



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

P.O. Box 450  
Richland, Washington 99352

01-OSR-0328

Mr. Ron F. Naventi, Project Manager  
Bechtel National, Inc.  
3000 George Washington Way  
Richland, Washington 99352

Dear Mr. Naventi:

**CONTRACT NO. DE-AC-01RV14136 - PROCUREMENT AND CONFIGURATION MANAGEMENT  
INSPECTION REPORT, IR-01-002**

From July 23-27, 2001, the Office of Safety Regulation (OSR) performed an inspection of the Bechtel National, Inc. (BNI) Procurement and Configuration Management Programs. No Findings were identified. Details of this inspection are provided in the enclosed inspection report, IR-01-002.

At the time of this inspection, BNI had not begun procurement of important-to-safety materials. The procurement program was in transition as a result of the planned implementation of the new Quality Assurance (QA) Manual and BNI procurement procedures. However, based on OSR interviews with BNI staff, review of several request for proposals, and review of QA organization activities associated with the qualification of suppliers, this inspection concluded BNI staff was well versed in the procurement process and capable of ensuring adequate quality.

In December 2001, following implementation of the QA Manual and new procurement procedures, the OSR plans to revisit this area.

The BNI Configuration Management program was adequately implemented. However, this program also was in transition with changes anticipated to reflect the new QA Manual and BNI organization. Future design phase inspections will be assessing BNI's implementation of the revised program.

Mr. Ron F. Naventi  
01-OSR-0328

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If you have any questions regarding this inspection, please contact me or Pat Carier of my staff on (509) 376-3574. Nothing in this letter should be construed as changing the Contract, DE-AC27-01-RV14136. If, in my capacity as the Safety Regulation Official, I provide any direction that your company believes exceeds my authority or constitutes a change to the Contract, you will immediately notify the Contracting Officer and request clarification prior to complying with the direction.

Sincerely,

Robert C. Barr  
Safety Regulation Official  
Office of Safety Regulation

OSR:JWM

Enclosure

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

U. S. DEPARTMENT OF ENERGY  
Office of River Protection  
Office of Safety Regulation

INSPECTION:           PROCUREMENT AND CONFIGURATION MANAGEMENT

REPORT NO.           IR-01-002

FACILITY:             Bechtel National, Inc. (BNI)

LOCATION:             3000 George Washington Way  
                          Richland, Washington 99352

DATES:                July 23-27, 2001

INSPECTORS:         J. McCormick-Barger (Lead), Senior Regulatory Technical Advisor  
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APPROVED BY:        P. Carrier, Verification and Confirmation Official  
                          Office of Safety Regulation

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IR-01-002

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EXECUTIVE SUMMARY  
Procurement and Configuration Management Inspection  
Inspection Report Number IR-01-002

## INTRODUCTION

This inspection of the Bechtel National, Inc. (the Contractor) Procurement and Configuration Management (CM) Programs covered the following specific areas:

- Configuration Management Program (Section 1.2)
- Application of Configuration Management to Subcontractors and Vendors (Section 1.3)
- Design Criteria (Section 1.4)
- Design Baseline (Section 1.5)
- Configuration Management Database (Section 1.6)
- Design Change Control (Section 1.7)
- Design Interfaces (Section 1.8)
- Computer Software Control (Section 1.9)
- Procedures Controlling the Procurement Process (Section 1.10)
- Procurement Documents (Section 1.11)
- Supplier Qualification and Monitoring Processes (Section 1.12)
- Review of Open Inspection Findings and Follow-up Items (Section 1.13).

## SIGNIFICANT OBSERVATIONS AND CONCLUSIONS

- The Contractor was continuing to implement the approved CM Plan utilizing trained personnel functioning in their assigned roles and responsibilities per approved procedures. (Section 1.2)
- Procurement procedures appropriately required the imposition of adequate CM requirements in subcontractor/vendor procurement documents, and applicable subcontracts and Request for Proposals were found to have specified these requirements. (Section 1.3)
- Functional requirements and design criteria were found to be under appropriate configuration control. (Section 1.4)
- Adequate configuration controls were in place to maintain the Technical Baseline current, accurate, and traceable. The ALTRIS database was found to be an acceptable configuration management database. (Section 1.5)
- The CM database had been developed and implemented consistent with the authorization basis and the Contractor had the controls in place to ensure incorporation of information

regarding Safety Design Class and Safety Design Significant structures, systems, and components identified as the design advances. (Section 1.6)

- The Contractor had implemented an adequate change control process. Interface between the design and ES&H organization, to ensure integrated safety management design requirements, as documented in the Standards Identification Process Database, were appropriately reflected in facility design was found to have been properly proceduralized and working well. (Section 1.7)
- Project procedures provided adequate requirements for communication of design interface requirements and details among the project design and functional organizations, as well as to organizations external to the design organizations. (Section 1.8)
- Computer software, necessary to support near-term regulatory submittals, had been adequately processed. However, the Contractor's earlier position, that software did not need to be validated and verified until the preparation of final design documents, appeared to be poorly conceived. At the exit, Contractor Senior Management responded that a more aggressive policy for validating and verifying software would be implemented. (Section 1.9)
- Based on review of a limited number of important-to-safety procurement documents, inspectors concluded Contractor staff was well versed in the procurement process and capable of ensuring adequate quality. Contractor staff review of procurement documents was thorough and a noteworthy practice. (Section 1.11)
- Actions to re-certify existing suppliers was commendable, resulting in the identification and in-progress resolution of quality assurance (QA) performance problems. The Contractor's actions regarding the identification, follow-up review, and resolution of an identified supplier QA deficiency was noteworthy. (Section 1.12)
- Two previously identified inspection follow-up items were closed, Finding IR-00-006-01-FIN, and Other Item 01-002-OTH. (Section 1.13)

# PROCUREMENT AND CONFIGURATION MANAGEMENT INSPECTION, IR-01-002

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## **PROCUREMENT AND CONFIGURATION MANAGEMENT INSPECTION REPORT, IR-01-002**

### **1.0 REPORT DETAILS**

#### **1.1 Introduction**

In accordance with the U.S. Department of Energy (DOE), Office of River Protection (ORP), River Protection Project Waste Treatment Plant (RPP-WTP) Contract<sup>1</sup> and, specifically, 10 CFR 830, Subpart A, "Quality Assurance Requirements," Bechtel National, Inc. (the Contractor) was required to incorporate applicable requirements and design bases in design work and design changes, identify and control design interfaces, procure items and services that meet established requirements and perform as specified, evaluate and select prospective suppliers on the basis of specified criteria, and establish and implement processes to ensure that approved suppliers continue to provide acceptable items and services. These requirements were reflected in the Contractor's authorization basis (such as, the Quality Assurance Program [QAP], BNFL-5193-QAP-01, Revision 8, and Safety Requirements Document [SRD], BNFL-5193-SRD-01, Volume 1, Revision 2, and Volume 2, Revision 4).

The inspectors reviewed the Contractor's procurement and configuration management procedures to determine if they complied with the commitments in the QAP and SRD. In addition, the inspectors assessed the implementation of the Contractor's procurement and configuration management programs as they related to the design phase of the RPP-WTP Contract to verify the Contractor was following its procedures and properly conducting important-to-safety (ITS) activities.

#### **1.2 Configuration Management Program (Inspection Technical Procedure [ITP] I-102)**

##### **1.2.1 Inspection Scope**

The inspectors assessed the following areas of the Contractor's implementation of the approved Configuration Management (CM) Plan: (1) use of approved procedures, (2) assignment of roles and responsibilities as described in the plan, (3) use of trained personnel to identify, evaluate, approve, and implement changes to the facility design, and (4) implementation of the CM procedures by properly trained individuals in the performance of ITS design work.

##### **1.2.2 Observations and Assessments**

During the last Office of Safety Regulation (OSR) detailed review of the RPP-WTP CM program, documented in Inspection Report IR-99-005, dated August 1999, the OSR concluded that the RPP-WTP CM Plan was adequate to meet the commitments in the authorization basis.

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<sup>1</sup> Contract No. DE-AC27-01RV14136 between the U.S. Department of Energy and Bechtel National Inc., dated December 11, 2000.

The previous inspection also concluded that procedures were in place and being implemented to address the requirements in the CM Plan. To verify that the CM Plan and implementing procedures continued to meet authorization basis requirements, the inspectors reviewed the following documents:

- PL-W375-MG0002, *RPP-WTP Configuration Management Plan*, Rev. 1 (CM Plan), dated December 12, 2000
- RPT-W375-EG00004, *Configuration Management Procedure List*, Rev. 1, dated February 8, 2001
- 24590 WTP-MAR-ENG-01-001, *Configuration Management Self Assessment Report-2001*, Rev. 0, dated July 23, 2001
- Procedure K70P528A, *Authorization Basis Maintenance*, Rev. 4, dated June 12, 2001
- Procedure K70P030C, *Design Change Control*, Rev. 5, dated June 13, 2001
- Crosswalk Between CM Plan Requirements and Implementing Procedures
- Letter Vacca to Brophy, CCN 018190, *Engineering Training Implementation Matrix*, Rev. 1, dated February 8, 2001
- Procedure K13P020A, *Project Records Management*, Rev. 0, dated April 13, 2001
- Procedure K10P008A, *Management Assessment*, Rev. 1, dated Nov. 13, 2000
- Procedure K13P066, *Quality Assurance Program Audits*, Rev. 0, dated December 14, 2000.

From the inspectors review of the above documentation, the inspectors determined that the CM Plan had continued to address authorization basis requirements and was being implemented through approved procedures. For example:

- The CM Plan defined the procedures for the implementation of CM for design and authorization basis control. The CM Plan, Section 4.1.2, "Documentation," stated, "Proposed changes are processed in accordance with the RPP-WTP project procedures for change control. These include procedures for: Design Change Control (procedure K70P030) ... Authorization Basis Maintenance (procedure K70P528)." This information was consistent with the Crosswalk Between CM Plan Requirements and Implementing Procedures (Crosswalk), which defined the implementing procedures that carry out CM Plan functions.
- The Crosswalk listed no procedure for status accounting; however, later interviews with the CM Senior Engineer and the Manager, Project Administration and Document

Control, indicated that the functions of status accounting were addressed in procedure K13P020.

- Procedure K10P008A, along with procedure K13P066, combine to define the roles and responsibilities for the CM functions of verification and audit.

However, CM Plan roles and responsibilities for the Engineering Vice President, the CM Manager, and some interfacing organizations, were not compatible with the current organization chart or position descriptions. This issue was self-identified in the CM Self-Assessment Checklist Item 3.1.2, described below, and was being addressed at the time of this inspection. Also, the specific implementation procedures were found to have assigned roles and responsibilities to appropriate positions to sufficiently carry out these CM Plan requirements.

The inspectors interviewed individuals responsible for the management and implementation of CM to determine if these individuals were fully aware of and implementing their CM responsibilities defined in procedures K70P030, K70P528, and K13P020. From these interviews the inspectors were told the following:

- The Engineering Manager stated he was directly accountable for maintaining the configuration management of the authorization basis and had delegated the responsibility for the development and implementation of the CM Program to the Systems Engineering Manager (Acting CM Supervisor) with the Deputy Engineering Manager, Systems & Projects, supporting the Systems Engineering Manager by maintaining approved procedures for the CM Plan.
- The CM Supervisor stated the existing plan was being followed; however, a new plan and associated implementing procedures were being written and would be approved shortly.

The inspectors also conducted interviews with a sample of engineering personnel (including one supervisor) assigned to identify, evaluate, and implement changes to the RPP-WTP facility design. These interviews were to verify: (1) personnel were trained and qualified to implement their CM responsibilities, (2) personnel understood their CM-related responsibilities, and (3) personnel were utilizing approved procedures to implement their assigned responsibilities for identifying, evaluating, and implementing changes to the facility design. All personnel interviewed stated they were qualified to perform ITS design work and utilized approved procedures to carry out their duties. They indicated they knew how to determine the current revisions of project procedures and stated they would review the appropriate procedures prior to placing completed work into the review cycle. Most personnel interviewed indicated they did not directly access the ALTRIS (a database that provided access to and contained a detailed listing of all Project Records) or Standards Identification Process Database (SIPD) databases for their information, but would ask Project Document Control (PDC) or Environmental Safety and Health (ES&H) staff to obtain information from ALTRIS or SIPD for their work.

The inspectors reviewed the results of self-assessments and audits performed by the Contractor since assuming the Contract, to determine if any CM related deficiencies had been identified. Self-assessment, "Configuration Management Self Assessment Report-2001," issued July 23,

2001, identified several items recommended for corrective actions. Since the report had just been issued, no deficiency reports had been written.

### **1.2.3 Conclusions**

The inspectors concluded that the Contractor was continuing to implement the approved CM Plan utilizing trained personnel functioning in their assigned roles and responsibilities per approved procedures.

## **1.3 Application of Configuration Management to Subcontractors and Vendors (ITP I-102)**

### **1.3.1 Inspection Scope**

The inspectors assessed the Contractor's efforts to include provisions for CM in its subcontracts and procurement documents (for important-to-safety procurements) to verify the Contractor was passing down the CM program commitments of the authorization basis to subcontractors and vendors.

### **1.3.2 Observations and Assessments**

To verify procedures contained requirements to include appropriate CM provisions in procurement documents, the inspectors reviewed the following procedures:

- Procedure K40P001, *Procurement Process*, Rev. 1, dated May 2000  
Procedure K40P006A, *Preparing Purchase Requisitions*, Rev. 0, dated March 22, 2001.

Procedure K40P001, Appendix 1, "Requirements for Procurement of Items and Services," required subcontractors and vendors to have CM programs commensurate with the quality level of the procurement. Procedure K40P006A, Section 3.3.2, "Purchase Requisition Preparation," Appendix 4, "Sample Statement of Work," also indicated applicable CM requirements were required to be identified.

The inspectors reviewed the Contractor's listing of subcontracts (issued since the establishment of the Bechtel National, Inc. [BNI] Contract) to identify any subcontracts that might contain design work scope, verify appropriate CM provisions were specified in the subcontracts, and verify that the Contractor had performed surveillance or audit activities to ensure these provisions were being implemented. Because very little procurement had occurred, this list was small and contained only one subcontract that included design work (GTS Duratek's design work on the melter). The inspectors performed a detailed review of this subcontract.

Letter L-11584, dated July 13, 2001, established GTS Duratek subcontract No. 24590-101TSA-W-0009, "Research and Technology Support-Revised Quality Assurance Requirements." The

inspectors determined that this subcontract appropriately imposed the Quality Assurance Requirements Document (QARD), Rev. 10, and NQA-1 requirements.

The inspectors interviewed the Contractor's representative for the GTS Duratek subcontract to verify the effective implementation of CM for the subcontractor, including the results of any Contractor quality assurance (QA) assessments performed in the area of CM. The Contractor's representative was aware that CM had been imposed via the QA program in the present subcontract. Since assuming the RPP-WTP Contract, the Contractor's QA organization had not yet performed an audit of the GTS Duratek QA program. Although not yet included on the Supplier Audit Schedule, dated July 13, 2001, the QA Manager stated that his auditors would be performing an audit of GTS Duratek within a few months. However, the previous RPP-WTP Contractor had performed several audits of the subcontractor.

The inspectors reviewed several ITS Request for Proposals procurement documents (see Section 1.11 of this report) and found appropriate reference to CM as it related to control of design information and documentation associated with procured materials and services.

### **1.3.3 Conclusions**

The inspectors concluded that procurement procedures required the imposition of adequate CM requirements in subcontractor/vendor procurement documents, and applicable subcontracts and Request for Proposals had specified these requirements.

## **1.4 Design Criteria (ITP I-102)**

During the last OSR inspection of the Contractor's CM program, documented in Inspection Report IR-99-005, dated September 2, 1999, the inspection team identified that the previous Contractor (BNFL Inc.) was adequately controlling the criteria being used to design the RPP-WTP facility. The inspection report noted that BNFL, Inc. was in the process of revising the basis for the CM program to include the project functional specification and not system descriptions. The functional specification contained the functional requirements upon which the CM program was based. This change in the CM basis involved a revision to the QAP, which had not been approved by DOE at the time of that inspection. An Inspection Follow-up Item (IR-99-005-02-IFI) was identified to track this authorization basis inconsistency. The Inspection Follow-up Item was subsequently closed on February 13, 2001, following OSR approval of Authorization Basis Amendment Request (ABAR), ABAR-W375-00-0010 that, among other things, addressed the issue regarding the statement that the CM program begins with system descriptions. OSR inspectors also reviewed Section 6.2.5 of the Contractor's QAP (BNFL-5193-QAP-01, Rev. 7) which had been revised to state that "configuration control ...originates with the functional requirements and...".

At the time of this inspection, the Contractor (BNI) had only recently assumed responsibility for the RPP-WTP design effort. As such, the Contractor was still in a transitional mode and, although bound by the existing CM Plan (PL-W375-MG00002) and design criteria and

functional requirements of the Technical Baseline, was in the process of issuing their own CM Plan, Technical Baseline documents (i.e., Basis of Design, Functional Specification, and Operations Requirements Document), and associated implementing procedures. Through the inspectors review of project design output documents and interviews of personnel, it was evident that little, if any, advancement of design output documents had occurred since the Contractor's assumption of project responsibility. This is not to say that the design had not advanced, but that any advancement in the design of structures, systems, and components (SSCs) was not reflected in revisions to applicable design output documents under configuration management. As such, there was little documentation available to review and come to judgment on the adequacy of implementation of the Contractor's CM Plan. Subsequent inspections, in particular the SRD Design Standards Implementation inspection scheduled for October 29, 2001, should provide OSR with the opportunity to better assess the adequacy of implementation of the Contractor's CM program and Technical Baseline design criteria and functional requirements.

#### **1.4.1 Inspection Scope**

The inspectors reviewed the project CM Plan, engineering and configuration management procedures, and documentation associated with controlling and maintaining the Design Criteria Database (DCD). Interviews were also held with engineering management and design personnel. These inspection activities were intended to verify: (1) functional requirements that form the basis for the Contractor's CM plan were developed and the requirements were controlled, (2) the Contractor had established written design criteria and these criteria were current and accurate, and (3) the Contractor's CM procedures had been applied to the design criteria to ensure traceability and configuration control.

#### **1.4.2 Observations and Assessments**

The inspectors reviewed the following documents:

- PL-W375-MG00002, *RPP-WTP Configuration Management Plan*, Rev. 1, dated December 12, 2000
- 24590 WTP-MAR-ENG-01-001, *Configuration Management Self Assessment Report-2001*, Rev. 0, dated July 23, 2001
- K13P023, *Internal Review and Approval of Documents*, Rev. 0, dated January 31, 2001
- K70P030C, *Design Change Control*, Rev. 5, dated June 13, 2001
- K70P528A, *Authorization Basis Maintenance*, Rev. 4, dated June 12, 2001
- K70P557C, *Design Inputs*, Rev. 2, dated June 4, 2001

- K70P565C, *Design Criteria Database*, Rev. 0, dated January 12, 2001
- BNI Memorandum CCN: 021101, *Design Criteria Database Change*, dated July 12, 2001.

Functional requirements and design criteria for the RPP-WTP project were specified in the Basis of Design document, the Contract, Functional Specification, Interface Control Documents, and selected authorization basis documents [e.g., the SRD, the Integrated Safety Management Plan (ISMP), the Radiation Protection Plan, and the QAP]. The CM Plan was reviewed and found to provide configuration control requirements for these functional requirements/design criteria source documents. As a reference tool for the convenience of the design engineers, the Contractor was using an electronic Design Criteria Database (DCD), which included verbatim design criteria extracted from these documents. The inspectors determined that the project functional requirements and design criteria were being controlled in accordance with the CM Plan and procedures K70P030 and K70P528. In addition, the inspectors interviewed engineering management and personnel and reviewed documentation associated with the DCD and determined that the DCD was being controlled in accordance with procedure K70P565C. No deficiencies were identified.

The Contract had been modified eight times since it was awarded. The inspectors determined that the design criteria in the Contract were slightly impacted by these modifications. Specifically, Contract Modification No. 3 included a slight revision to Design Criterion C.8, Spec. 12: 12.2.3.2. The inspectors reviewed Contractor memorandum CCN: 021101, and concluded that the DCD was appropriately updated to reflect this modification and the change was properly communicated to the project design organizations. The inspectors also determined that the other Contract modifications had also been reviewed by project engineering personnel and appropriate determinations of no impact to the DCD were made.

The inspectors determined that changes to the authorization basis documents, including the design criteria contained therein, were being properly controlled using authorization basis change notices (ABCNs) per K70P528A. For example, an ABCN (ABCN-24590-01-00002) was submitted to DOE by the Contractor requesting approval to remove the Employee Concerns Program (ECP) from the authorization basis. DOE approved this request on June 28, 2001 (OSR letter 01-OSR-0225). Other than the Contract modifications discussed above and this ABCN, there have been no other changes to the functional requirements and design criteria since the Contractor assumed responsibility for the project.

Traceability of design requirements/bases was accomplished on this project by the use of Design Input Memoranda (DIMs). DIMs was developed and controlled in accordance with project Procedure K70P557C. The inspectors verified during the demonstration of the Document Management System (DMS), that DIMs were being issued for and cross-referenced to appropriate design output documents. The DIM was essentially a traveler for the design output document (drawing or specification) issued by the design organizations that included the references to the source of functional requirements and design criteria upon which the design was based. The inspectors concluded that the DIMs provided an adequate means of traceability of functional requirements and design criteria. The DIMs were under change control.

### **1.4.3 Conclusions**

Functional requirements and design criteria were found to be under appropriate configuration control. Although the Contractor was working to replace the Basis of Design document and the Functional Specification with Technical Baseline documents more consistent with the RPP-WTP Contract, there were no identified instances of discrepancies between design output documents and the design criteria source documents. In addition, no problems were identified with the currency or accuracy of functional requirements or design criteria included within the Contract, authorization basis documents, Basis of Design, Functional Specification, and Interface Control Documents. Functional requirements and design criteria for the project remained essentially unchanged since Contract award. A minor change associated with Contract Modification No. 3 was the only design criteria change identified; this change was properly incorporated into the DCD and communicated to the design and functional organizations.

## **1.5 Design Baseline (ITP I-102)**

### **1.5.1 Inspection Scope**

The inspectors reviewed the CM Plan and Technical Baseline documents (authorization basis documents, the Contract, Basis of Design, Functional Specification, and Interface Control Documents) and observed a demonstration of the Project Document Control database (ALTRIS.) This review was intended to verify: (1) configuration controls had been applied to the design technical baseline relating to areas such as the Hanford site, safety analyses, SSCs, procedures, training, and computer software, and (2) the Contractor had a system to control and maintain accurate as-built records for important-to-safety SSCs.

### **1.5.2 Observations and Assessments**

The inspectors reviewed the following documents:

- PL-W375-MG00002, *RPP-WTP Configuration Management Plan*, Rev. 1, dated December 12, 2000
- 24590 WTP-MAR-ENG-01-001, *Configuration Management Self Assessment Report-2001*, Rev. 0, dated July 23, 2001
- K13P020A, *Project Records Management*, Rev. 0, dated April 13, 2001
- K13P023, *Internal Review and Approval of Documents*, Rev. 0, dated January 31, 2001.

The Contractor was provided the Waste Treatment Plant (WTP) Conceptual Design and supporting documentation at Contract award. During the completion of due diligence reviews, the Contractor determined that some of the Technical Baseline documents were seriously flawed, including the Basis of Design document and Functional Specification. The Contractor decided to



invoke Clause H.17 of the Contract which allowed them to not use documents turned-over from the previous contractors if, upon evaluation, the Contractor determined them to be unsatisfactory. The Contractor was in the process of revising the Basis of Design document and Functional Specification to make them consistent with the Contract and preparing a new Technical Baseline document, the "Operations Requirements Document." The Contractor was planning to issue these documents as Revision 0 with new document numbers and submit them to ORP by August 20, 2001. In the interim, the Contractor was committed to complying with the existing Basis of Design document and Functional Specification.

The inspectors reviewed the results of the Contractor's CM Self-Assessment (24590-WTP-MAR-ENG-01-001) performed in July 2001. The Contractor self-identified, based on a management assessment performed in December 2000, that although there had been a recommendation to prepare a procedure that defined the creation and content of the Technical Baseline, the procedure had not yet been developed. Based on interviews with engineering management and personnel, the inspectors concluded that the Contractor was still developing their plans for defining the Technical Baseline and determining the need for this procedure. Given the ongoing significant changes to the project Technical Baseline, the inspectors did not have an adequate basis to conclude that such a procedure was necessary. No deficiencies with respect to Basis of Design and Functional Specification compliance were noted during the inspection.

Engineering personnel responsible for developing the new Basis of Design were interviewed and documentation associated with the ongoing revision was reviewed. The Contractor was in the process of dispositioning comments received in response to the Document Review Request (DRR). Only a handful of comments had not been dispositioned. The inspectors determined that the Basis of Design revision was being processed in accordance with the CM Plan and procedure K13P023. No deficiencies were identified.

Since no as-built records for ITS SSCs had yet been prepared, approved, or put under document control for the project, this area was not inspected. The Contractor was in the process of identifying ITS SSCs using their integrated safety management (ISM) process. Output from the ISM process, including functional requirements, safety case requirements, and safety design class and safety design significant SSC classifications were to be captured in the Standards Identification Process Database (SIPD). SIPD was an electronic database used to set requirements for the design process. Although SIPD was not reviewed during this inspection, it will be assessed during the Standards Selection Process inspection scheduled for September 10, 2001. However, the inspectors observed a demonstration of the performance of the Project Document Control DMS, which was a database using software provided by ALTRIS. Information was entered into the database in accordance with project procedure K13P020. The inspectors found the database to contain project records appropriate to the design stage of the project. The database showed extensive capability for information cross-referencing and key word search. The database clearly indicated which documents were under configuration control and the latest revisions. The database also contained historic records for previous revisions of controlled documents. The database operator exhibited extensive knowledge of the database information and expertise in manipulation of the database files. No deficiencies were identified.

### **1.5.3 Conclusions**

Although there was an outstanding Contractor self-assessment item concerning the need to develop procedural control for the project Technical Baseline, adequate configuration controls were in place to maintain the Technical Baseline current, accurate, and traceable. By way of the demonstration of the DMS, ALTRIS was found to be an acceptable configuration management database. This is discussed further in Section 1.6.

## **1.6 Configuration Management Database (ITP I-102)**

### **1.6.1 Inspection Scope**

The inspectors assessed the Contractor's CM Plan for the development and implementation of a database that included a listing of Safety Design Class and Safety Design Significant SSCs and related design and associated documentation.

### **1.6.2 Observations and Assessments**

The inspectors reviewed the CM Plan, Section 5, "Configuration Status Accounting," and determined that it adequately summarized how the CM database was managed and reported in the DMS (which was operated, as stated in Section 1.5, using a software program called ALTRIS). During interviews, the CM Supervisor provided an extensive discussion of the present functional capabilities of the DMS and discussed the Contractor's future plans for the CM database, using operating software called INFOWORKS (the Contractor's corporate software for a DMS system). The CM Supervisor stated that once upgraded, INFOWORKS would be able to perform all the CM functions ALTRIS was presently performing. Using this system, DMS would continue to track each configuration item, its current Technical Baseline, and all approved and pending changes from initiation through implementation and final closeout, as stated in the authorization basis.

During a DMS demonstration by PDC, the operator was able to display the various Technical Baseline documents and relate them to their design information. This database was being regularly updated by PDC using procedure K13P020.

### **1.6.3 Conclusions**

The inspectors concluded that a CM database had been developed and implemented consistent with the authorization basis and the Contractor had the controls in place to ensure incorporation of information regarding Safety Design Class and Safety Design Significant SSCs identified as the design advances.

## **1.7 Design Change Control (ITP I-102)**

During the last OSR inspection of the Contractor's CM program, documented in Inspection Report IR-99-05, dated September 2, 1999, the inspection team identified that the previous Contractor (BNFL, Inc.) had adequate provisions for controlling the design change process that met authorization basis requirements. That inspection team determined design change documents had been appropriately reviewed and approved, and adequately addressed safety. However, the inspection team identified weaknesses in the design change control procedure, which lacked the flexibility to defer performing Detailed Impact Assessments (DIAs) when technical justification to do so existed and provisions to ensure that approved Design Change Applications (DCAs) were implemented in an accurate and timely manner. The Contractor had stated Procedure K70P030\_2 would be revised to clarify the requirements for deferring the performance of DIAs in those instances where technical justification to do so existed. In addition, prior to the end of the inspection, the Contractor revised Procedure K70P030\_2 to incorporate guidance for tracking and handling documents impacted by DCAs and to require that target dates be identified for closeout of DCAs. The Contractor also stated that a revision of the procedure would be made to provide more formality to the DCA form, specifically, the addition of a cover sheet which would highlight affected documents and provide a standard format for impact assessments. The inspection team concluded these revisions had the potential to correct the identified weaknesses and intended to verify this conclusion in subsequent inspections.

As already noted, at the time of this inspection, the Contractor (BNI) had only recently assumed responsibility for the RPP-WTP design effort. As such, the Contractor was in a transitional mode and, although advancing the design effort, had not engaged in design change activities in accordance with project configuration management requirements. Specifically, the Contractor had neither processed DCAs nor advanced either the alpha or numeric revisions of design output documents. The Contractor was actively engaged in revising the Technical Baseline documents (Basis of Design and Functional Specification), preparing a new CM Plan patterned after the Contractor's corporate CM procedure and standard processes, and revising implementing procedures; all reflecting the transition from the existing QAP to the new Quality Assurance Manual (QAM) and requirements from the Contract. The Contractor was also actively engaged in revising existing project design output documents to make them consistent with the Contractor's standard practices and assigning new document numbers. Due to the transitional aspects of the Contractor's activities, the inspectors were not able to review an active, working design change control process. OSR will assess implementation of the BNI Technical Baseline, CM procedures, and design change control processes during future inspections, particularly the SRD Design Standards Implementation Inspection scheduled for October 29, 2001.

### **1.7.1 Inspection Scope**

The inspectors reviewed the CM Plan and implementing procedures and design output documents, and interviewed project design management and personnel. These reviews and interviews were intended to verify: (1) the CM procedures ensured ongoing design changes were formally stated and communicated throughout the design organization to ensure consistent system integration and configuration control, (2) the CM procedures included allocation of

specific responsibility for approval of design output documents and design change documents, (3) the Contractor was using the following four-step process to achieve CM for a design change: identification, evaluation, approval, and implementation, (4) potential changes that may impact the design were reviewed for conformance to the design criteria and related project documents, (5) DCAs were developed to identify, communicate, record, and control proposed changes (additions and deletions) to the design that required a physical modification to the facility, and (6) procedures contained provisions that ensured proposed changes resulting in changes to technical safety requirements (TSRs) or creating unreviewed safety questions (USQs) were subject to OSR approval before the change was implemented.

### 1.7.2 Observations and Assessments

The inspectors reviewed the following documents:

- PL-W375-MG00002, *RPP-WTP Configuration Management Plan*, Rev. 1, dated December 12, 2000
- 24590 WTP-MAR-ENG-01-001, *Configuration Management Self Assessment Report-2001*, Rev. 0, dated July 23, 2001
- K13P023, *Internal Review and Approval of Documents*, Rev. 0, dated January 31, 2001
- K70P030C, *Design Change Control*, Rev. 5, dated June 13, 2001
- K70P528A, *Authorization Basis Maintenance*, Rev. 4, dated June 12, 2001
- K70P529A, *Engineering Calculations: Preparation, Checking, and Approval*, Rev. 1, dated February 23, 2000
- K70P551D, *Drawings and Sketches: Preparation, Checking, and Approval*, Rev. 2, dated June 4, 2001
- K70P555, *Design Verification*, Rev. 1, dated February 12, 2001.

As stated above, the Contractor had not processed any DCAs since assuming responsibility for design of the RPP-WTP. In addition, due to the late-conceptual or early-preliminary status of the project's design work, there were no Technical Safety Requirements yet developed nor were unreviewed safety question (USQ) determinations being made. Thus, these aspects of design change control were not assessed during this inspection.

The CM Plan (Section 4.1.2) was reviewed and found to require documentation of proposed design changes in accordance with the requirements of procedures K70P030C and K70P528A. Procedure K70P030C specified the requirements for processing DCAs and Design Change Notices (DCNs). Procedure K70P528A specified the requirements for processing ABCNs. The

Contractor was using DCAs, DCNs, and ABCNs as the formal mechanisms for communicating design changes throughout the design organization to ensure consistent system integration and configuration control. Procedure K70P030C was reviewed and found to contain adequate requirements for determining the need for a DCA or DCN, developing the DCA or DCN, and obtaining a review of the DCA or DCN across all design disciplines (or, in the case of the DCN, those disciplines potentially impacted by the design change) to determine the potential impact of the design change on the project. This included Process Technology for potential impacts to facility throughput and plant capacity and as low as reasonably achievable (ALARA) (adverse or beneficial) consideration. The DCA form (K73F001) required specific impact assessments for civil, structural, and architectural; controls and instrumentation; electrical; HVAC/fire protection; mechanical handling; mechanical systems; melter systems; operations; plant design; process; project controls; shielding and dose assessment; and, regulatory disciplines/areas. The DCN form (K73F003) processed for design changes not impacting the authorization basis, safety, environment, scope, cost, or schedule, required review and acceptance by ES&H staff and notification of the same design, operations, process, project controls, and shielding and dose assessment disciplines/areas as for the DCA. The inspectors concluded that Procedure K70P030C contained adequate requirements for ensuring that pending design changes are effectively communicated throughout the design organizations.

Procedure K70P528A was reviewed and found to contain adequate requirements for evaluating design changes against the contents of the facility authorization basis, preparing ABCNs for those design changes that are in conflict or inconsistent with the authorization basis, internal review and approval of ABCNs, and obtaining DOE approval, if required. The procedure was also found to contain adequate requirements for implementing approved ABCNs, including informing Project Document Control of approved authorization basis document page changes for distribution to controlled document copy-holders. The inspectors concluded that Procedure K70P528A contained adequate requirements for ensuring approved ABCNs were being formally communicated throughout the design organizations.

The CM Plan (Section 5) included adequate requirements for configuration status accounting of pending and approved changes (DCAs, DCNs, ABCNs, etc.). Configuration status accounting was accomplished through the DMS, wherein configuration items were tracked against the Technical Baseline and all approved and pending changes. As noted previously, the inspectors observed a demonstration of the DMS, and concluded that adequate status information was provided for configuration items. No deficiencies were identified.

The inspectors determined requirements for approval of Contractor output documents was adequate based on a review of Procedures K70P529A and K70P551D. Procedure K70P529A addressed the requirements for preparing, reviewing, and approving engineering calculations. The procedure required calculations be checked/independently verified at the level required by Procedure K70P555, and approved by the appropriate discipline design lead. Following approval, the calculation originator was required to promptly submit the calculation to Project Document Control for entry into DMS. Procedure K70P551D addressed the requirements for preparation, review, approval, and revision of design output drawings. The procedure required review of the drawing and attachment of a Design Input Memorandum (DIM) by the Hazards and Safety Analysis Lead for conformance with the Standards Identification Process Database

(SIPD) and authorization basis documents. The procedure also required design verification in accordance with K70P555 and checking of the drawing and DIM by an individual having adequate qualifications to originate the drawing. Finally, drawing approval was performed by the cognizant design discipline manager or designee. The procedure required similar verification, checking, and approval for major drawing revisions.

The inspectors reviewed the CM Plan and found it addressed configuration change control. The change control process described in Section 4.1 of the CM Plan included requirements for:

- Identification of design changes to be made (Section 4.1.1)
- Evaluation and approval by Area Design Managers, Area Project Managers, and/or the Project Safety Committee and determination of incorporation of the change into the project configuration (Section 4.1.3). This section also required review of the proposed design change by the Design and ES&H groups for determination of any required changes to the project authorization basis and, as necessary, approval by ORP prior to implementation
- Implementation of approved and authorized design changes into project documentation (Section 4.1.5).

While the CM Plan contained organizational titles that were inconsistent with the BNI organization, this was not considered to be a significant issue by the inspectors because the Contractor: (1) had not been processing design changes (Design Change Applications) since assuming control of the project, and (2) was actively developing a replacement CM Plan that would correct these organizational discrepancies.

The current CM Plan was reviewed and found to contain appropriate requirements for evaluating impacts to existing design criteria and other project documents from proposed changes to design output documents. Procedure K70P030C was reviewed and found to contain requirements for performing and documenting impact assessments associated with DCAs. For DCNs, the impact assessment was less rigorous and was largely performed by the change originator. The supervisors of other disciplines received notification of DCNs and provided comments to the originator, as necessary. Although the inspectors concluded that the requirements for performing impact assessments for design changes appeared to be adequate, the lack of processed DCAs and revision of design output documents did not allow for the verification of implementation adequacy. This will be addressed in future inspections.

Engineering/design management, supervision, and personnel were interviewed about the design change control process. All personnel interviewed were qualified to do ITS work and their configuration management training was up-to-date. Personnel exhibited adequate knowledge of configuration management procedures used to control the design process. None of the personnel interviewed had processed a design change application (DCA) since the Contractor assumed design responsibility, nor were they aware of any such design changes having been made by others. While it was evident that the design was progressing, there was no evidence that design output documents (drawings, specifications, etc.) had been revised under the CM program. This

included changes to both alpha and numeric design output documents. Personnel were knowledgeable of the CM group within the Engineering organization. In general, design personnel exhibited a reluctance to use the established databases (i.e., SIPD and DCD) during their design activities. Instead, they relied upon direct interactions with the Hazards and Safety Analysis Leads to obtain SIPD requirements for the design and directions from engineering management/supervision concerning changes to the DCD. At the time of the inspection, this was not considered to be a weakness by the inspectors, largely because of the lack of design output documents and design change documentation against which to assess the adequacy of program and procedure implementation.

### **1.7.3 Conclusions**

Through interviews of project design management and personnel and review of project design output documents and procedures, the inspectors determined that the Contractor had implemented an adequate change control process. There appeared to be adequate incorporation of configuration management requirements into project design activities and the design change process. In addition, the interface between the design and ES&H organization to ensure that integrated safety management (ISM) design requirements, as documented in the Standards Identification Process Database (SIPD), were appropriately reflected in facility design was found to have been properly proceduralized and working well.

## **1.8 Design Interfaces (ITP I-102)**

### **1.8.1 Inspection Scope**

The inspectors reviewed the CM Plan, Procedures K13P023 and K70P554, and project Interface Control Documents (ICDs), ICD-24590-01-00001 through -00027). This review was intended to verify that design interfaces were identified and controlled, and design efforts were coordinated among participating organizations.

### **1.8.2 Observations and Assessments**

The inspectors reviewed the following documents:

- PL-W375-MG00002, *RPP-WTP Configuration Management Plan*, Rev. 1, dated December 12, 2000
- 24590 WTP-MAR-ENG-01-001, *Configuration Management Self Assessment Report-2001*, Rev. 0, dated July 23, 2001
- K13P023, *Internal Review and Approval of Documents*, Rev. 0, dated January 31, 2001
- K70P554, *Interface Control*, Rev. 2, dated November 30, 2000

- Interface Control Documents, ICD-24590-01-00001 through –00027.

The CM Plan was reviewed and found to contain adequate requirements for interface management (Section 4.2). Interfaces addressed by the CM Plan included both interfaces internal to the project and external interfaces with ORP and ORP contractors. External interfaces between the Contractor and ORP and its contractors are also identified in Section C.9 of the RPP-WTP Contract. The interface requirements are further detailed in ICD-24590-01-00001 through –00027. The Contractor has committed to implement the design criteria contained within the ICDs as part of the Technical Baseline for the project and was applying appropriate configuration control to the ICDs.

Procedure K70P554 was reviewed and found to contain adequate requirements for controlling design interfaces internal and external to the Contractor organization. External interfaces were controlled using ICDs, as discussed above. Internal interfaces were determined and approved by the design discipline managers or designees and documented in internal interface documentation. Interdisciplinary reviews of internal interface documentation was performed in accordance with Procedure K13P023.

The CM Plan required the Contractor to identify internal interface requirements between buildings, areas, and functional groups associated with the project. As noted above, the inspectors assessed the interface between the design and ES&H organizations for integrated safety management (ISM) design requirements (i.e., SIPD) and found the interface to be working properly as evidenced by the appropriate reflection of ISM requirements in the facility design. Because of the lack of design output documentation produced by the Contractor, it was not possible to assess the effectiveness of internal interfaces between project buildings and areas. No deficiencies were identified.

### **1.8.3 Conclusions**

Project procedures provided adequate requirements for communication of design interface requirements and details among the project design and functional organizations, as well as to organizations external to the design organizations. No deficiencies were identified.

## **1.9 Computer Software Control (ITP I-102)**

### **1.9.1 Inspection Scope**

The inspectors reviewed the Contractor's computer software control process, to determine if the process was suitable to support the existing work scope and the long-term needs of the project. The inspectors reviewed the assessment of this area as recorded in previous inspection reports (Inspection Reports IR-99-005 and IR-00-006) and ascertained that the previous observations (particularly Section 1.5.2 of IR-00-006) remained valid and associated follow-up actions were completed. The current procedural requirements associated with software control were reviewed and implementation of procedural requirements was verified.



## 1.9.2 Observations and Assessments

The inspectors reviewed the following documents:

- BNFL-5193-QAP-01, *Quality Assurance Program*, Rev. 8, dated March 8, 2001
- K70C515D, *Code of Practice for Computer Program Use*, Rev. 2, dated June 18, 2001
- RPT-W375-G00010, *Software Designation List*, Rev. 4, dated April 16, 2001
- CAF-24590-01-0002, *Computer Application Use Registration for HADCRT, version 1.2*, dated April 23, 2001
- CAF-24590-01-0002, *Computer Application Use Registration for GXQ, version 4.0*, dated April 23, 2001
- CAF-W375-00-00002, *Computer Application Use Registration for Microshield, version 5.03*, dated April 3, 2000
- CAF-W375-01-00009, *Computer Application Use Registration for MNCP, version 4C*, dated February 15, 2001.

As described above, the computer software control process was previously inspected during an inspection completed on January 18, 2001 (Inspection Report IR-00-006). At the time of this earlier inspection, only 2 computer programs had been validated and verified. The Contractor had referenced Section 6.2.3 of the QAP and noted that software validation and verification was not required prior to preparation of final design documents. Since no final design documents had been prepared, the Contractor claimed that no verification and validation was required. In looking into this matter again, inspectors noted that the phrase "final design documents" was not defined and based on the Contractor's interpretation of the QAP, it was uncertain when validation and verification of computer software would be required.

The inspectors considered the Contractor's position with regard to validation and verification of computer software untenable in light of the ongoing design process. The Contractor's previous position would permit the facility design to continue for years with potentially inapplicable or misapplied computer software. Validation and verification of computer software late in the design process could negate years of design work if the software were determined to be inappropriate or misapplied.

The inspectors selected two ongoing Contractor processes that required near-term OSR review and approval and checked whether software associated with those processes had been validated and verified. The processes chosen for review involved the modification of the ISM process to identify ITS equipment for long-lead procurement and the safety analysis for criticality control. The inspectors considered the above processes, as a minimum, to have required the Contractor to

have used the following computer codes:

- Neutron transport codes
- Shielding codes
- Atmospheric dispersion codes
- Aerosol transport codes.

The inspectors reviewed the Contractor's "Software Designation List" and "Computer Application Use Registration" records and confirmed software for the above applications existed and were validated and verified or the validation and verification process was in progress.

The inspectors chose two codes for the above applications and using procedure K70C515D, reviewed the validation and verification process to confirm that the codes were adequately tested. This check confirmed the code for calculating atmospheric dispersion coefficients (GWQ, Version 4.0) had been adequately validated and verified. From a similar check of the code used to calculate aerosol transport (HADCRT, Version 1.2), the inspectors determined the Contractor's QA organization had identified discrepancies with the code and was pursuing resolution of the issue.

### **1.9.3 Conclusion**

Based on a selected sample of computer software requirements, the inspectors concluded that computer software that was necessary to support near-term regulatory submittals had been adequately processed. However, the Contractor's position from the January 2001 inspection, that software did not need to be validated and verified until the preparation of final design documents, appeared to be poorly conceived. At the inspection exit, Contractor Senior Management responded that a more aggressive policy for validating and verifying software would be implemented.

### **1.10 Procedures Controlling the Procurement Process (ITP I-130)**

During the last OSR detailed review of the RPP-WTP Procurement Program, documented in Inspection Report IR-99-002, dated June 10, 1999, the OSR identified that the Contractor's (BNFL, Inc.) procurement program was adequate but procedures lacked procedural guidance related to the control of the Approved Suppliers List (ASL) and generation of requests for proposals, contracts, or other contract awards documents. Then, as now, very little important-to-safety procurement had occurred. Although BNFL, Inc. had been implementing a procedural improvement program to address procedural weaknesses in most areas of the project, including procurement, very little meaningful progress had occurred at the time the Contract with BNFL, Inc. was terminated. The transition Contractor had made a deliberate decision not to address program improvements in the procurement area, rightly assuming that the new Contractor, BNI, would best be suited to address this important area.

At the time of this inspection, BNI had submitted to OSR for approval, a new QAM that reflected a commitment to NQA-1, QAP Requirements for Nuclear Facilities, including the associated 18 Basic Requirements rather than the 10 criteria of 10 CFR 830, Subpart A. This QAM, once approved, would be in alignment with the Bechtel Corporate procurement procedures, which the Contractor stated they planned to implement as soon as the QAM was approved. The Contractor stated they planned to delay issuing procurement requisitions, to the extent possible, until the QAM was approved. This inspection was intended to assess the Contractor's current activities in this area, to ensure that procurement activities, particularly during this transition period, were being conducted in accordance with authorization basis requirements. Because no procurement of important-to-safety materials had occurred at the Contractor facilities, no inspections of materials have occurred, no nonconforming items had been identified, and no material related supplier documents had been received; therefore, these areas were not reviewed during this inspection. A full implementation inspection is tentatively planned for the month of December 2001, by which time the Contractor plans to have implemented the new Bechtel procurement program and substantial important-to-safety procurement activities is expected to be ongoing.

### **1.10.1 Inspection Scope**

The inspectors briefly reviewed the current "legacy" procurement procedures that were transitioned to the Contractor during Contract transition from the previous Contractor. This review was intended to verify the procedures address: (1) preparing, reviewing, approving and processing procurement documents, (2) evaluating and selecting qualified suppliers and subcontractor, (3) monitoring suppliers and subcontractors, (4) processing nonconformances in items and services, (5) inspection of procured items, and (6) accepting and controlling product documentation.

### **1.10.2 Observations and Assessments**

The inspectors reviewed the following procedures:

- K40P001, *Procurement Process*, Rev. 1, dated February 6, 2001
- K40P006A, *Preparing Purchase Requisitions*, Rev. 0, dated April 2, 2001
- K40P004, *Procurement Solicitation*, Rev. 0, dated February 6, 2001
- K40C003A, *Code of Practice for Proposal Evaluation*, Rev. 0, dated February 6, 2001
- K40P008, *Acceptance of Procured Services*, Rev. 0, dated February 6, 2001
- K70P567A, *Graded Quality Approach*, Rev. 0, dated February 5, 2001
- K13P008B, *Supplier/Subcontractor Data Submittal*, dated January 30, 2001
- K13P058, *Supplies Assessments*, Rev. 2, dated January 31, 2001
- K13P057, *Supplier Evaluation and Selection*, Rev. 3, dated May 15, 2001
- K13P054D, *Corrective Action*, Rev. 2, dated June 21, 2001.

In general, the procedures listed above contained information and instructions to implement a procurement program. However, in many cases, the procedures were similar to those reviewed during the 1999 inspection and continued to lack detailed guidance for implementing a procurement program necessary for a project as large and complex as the RPP-WTP. These procedures relied heavily on procurement, engineering, and quality assurance staff knowledge and experience to ensure consistent, compliant procurement of important-to-safety materials and services. For example procedure K40P001, Procurement Process, provided an Appendix 1, "Requirements for Procurement of Items and Services," which specified the QAP requirements as they relate to procurement. However, the procedure did not explain which requirements apply for various quality level procurements, only that they are commensurate with the importance of the purchased item or service in accordance with the assigned quality level.

Because the Contractor stated they intended to implement the Bechtel corporate procurement procedures, adjusted to address specific Contract requirements, soon after the QAM was approved by the OSR, and they were delaying processing of final procurement requisitions until the new procedures were implemented, the inspectors did not perform a more detailed review of the "legacy" procedures.

### **1.10.3 Conclusions**

Because of the pending change over of procedures from the current "legacy" procedures to the Bechtel procurement procedures, a detailed review of existing procedures was not performed during this inspection. A subsequent OSR inspection of the procurement program is planned in December 2001, when the Contractor is expected to have fully implemented its new procurement program and is actively involved with procuring important-to-safety goods and services.

## **1.11 Procurement Documents (ITP I-130)**

### **1.11.1 Inspection Scope**

The inspectors reviewed several procurement documents associated with goods and services needed to support the upcoming Limited Construction Authorization (LCA). This review was conducted to verify these procurement documents: (1) stated applicable technical and quality assurance requirements, (2) stated applicable test and inspection requirements and acceptance criteria, (3) were reviewed by QA to ensure that they conformed to the QAP, and (4) included critical parameters and requirements (e.g., submittals, product-related documentation, nonconformance requirements, administrative documentation, and personnel or materials qualification, tests, inspections, and reviews).

### **1.11.2 Observations and Assessments**

Although, as stated above, the Contractor had not issued any purchase requisitions, they had issued two important-to-safety Requests for Proposals (RFPs) and one Technical Specification to

support the solicitation of supplier bids for goods and services needed to support the upcoming LCA work. The inspectors reviewed the following procurement documents:

- RFP No. 24590-QL-SRA-DB50-00002, *Concrete Batch Plant Aggregate and Ready Mix Production*, dated July 2001
- Purchase Requisition 24590-, *Site Development (Earth Works) Subcontract RFP*, dated June 19, 2001
- Technical Specification No. 24590-WTP-3PS-DG00-T0001, *River Protection Project - Waste Treatment Plant Specification for Purchase of Reinforcing Steel*, Rev. A, dated June 29, 2001.

The RFPs reviewed were very detailed (2-3 inches thick), contained the appropriate technical and quality assurance requirements, including reference to the appropriated codes and standards and acceptance criteria, had been reviewed and approved by QA, and addressed the critical parameters and requirements discussed above. The scope and depth of the RFPs indicated that the Contractor was well versed in the process for procuring complex, important-to-safety goods and services. The RFPs addressed myriad requirements, such as, QA Manual submittal and onsite inspection and audit requirements, Employee Health and Safety requirements, ISM requirements, Security requirements, accident and nonconformance reporting requirements, the need to require site employees to obtain General Employee Training, and various other legal requirements associated with working on a government project.

The Technical Specification, generated to support procurement of Quality Level 1 (QL-1) rebar, identified the appropriate standards referenced in the SRD, identified the requirement for submittal of a QA Plan compliant to NQA-1, required certified mill test reports and material labeling, required testing per American Society For Testing and Materials (ASTM) A706, and addressed other QA requirements. The Technical Specification was reviewed and approved through the use of the DRR process. The inspectors reviewed the DRR forms associated with the Technical Specification review and approval and noted that QA had reviewed, commented, and subsequently approved the document. Many other reviewers provided substantial technical commits on the first draft of the document, resulting in an improved and appropriate Technical Specification. Contractor technical staff involvement in review and approval of this document was a noteworthy practice and had a positive impact on the procurement process.

### **1.11.3 Conclusions**

From a review of procurement documents limited to requesting supplier bids, the inspectors concluded Contractor staff was well versed in the procurement process and capable of ensuring adequate quality. The Contractor specified appropriate quality and technical requirements and the documents addressed other requirements, as necessary to comply with a project as complex as the RPP-WTP. This conclusion was based on a small sample of important-to-safety procurement documents; a detail review of procurement, planned in December 2001, should provide a better base for concluding procurement activities area acceptable. The inspectors

found Contractor staff review of procurement documents to have been detailed resulting in improved and acceptable procurement documents and a noteworthy practice.

## **1.12 Supplier Qualification and Monitoring Processes (ITP I-130)**

### **1.12.1 Inspection Scope**

The inspectors reviewed the ASL, and several QA reviews of Suppliers' QA Plans, audits and site visits. This review was conducted to verify: (1) the Contractor maintains an ASL, (2) suppliers, and subcontractors have been appropriately identified and qualified, and (3) suppliers' and subcontractors' QA Plans have been reviewed, audited, and periodically evaluated.

### **1.12.2 Observations and Assessments**

Revision 1 of the Contractor's ASL, dated July 13, 2001, listed 8 suppliers, of which only 3 were indicated as currently qualified. This small list reflected the lack of important-to-safety procurement activities. The Contractor stated that the list would grow substantially in the near future when the Contractor becomes authorized by DOE to procure materials to support LCA and other future RPP-WTP long-term important-to-safety procurements needs. For example, the RFPs described above would require additions to the ASL, once the suppliers are identified and approved. As a result of the BNI's review of each of the suppliers on the ASL (those placed on the ASL by the previous RPP-WTP Contractors), quality related issues were identified that resulted in the suppliers not being designated as qualified. Audit reports had been issued to support these reviews and, in most cases, the suppliers were actively addressing the identified issues.

The inspectors reviewed the following audits of supplier QA programs:

- 24590-WTP-AR-QA-01-004, *Bechtel National Inc., Audit of IBC Advance Technologies, Inc.*, Rev. 0, dated July 11, 2001
- 2450-WTP-AR-QA-01-002, *Supplier Audit Report, Sandia National Laboratories, Program Development and Environmental Decisions Department, #6849*, Rev. 0, dated June 9, 2001.

These audits were performed using extensive QA program review checklists, provided substantial detail regarding supplier performance, and, collectively, contained identification of over 50 conditions that required corrective actions. As a result of these audits, the suppliers were designated on the ASL as not qualified.

During review of a supplier's submittal of an engineering report, the QA department identified that the report had been reviewed and approved by the same supplier engineer, a violation of the supplier's QA Plan, the Contractor generated a Deficiency Report, reviewed additional submittals and identified a second case of improper review and approval, solicited corrective actions from

the supplier, and conducted an audit at the suppliers facility to determine the pervasiveness of the problem, no additional issues were identified. The supplier subsequently corrected the deficiency. The Contractor's actions to address this problem were comprehensive and considered a strength.

The inspectors met with the Supplier Quality (Inspection) Supervisor, who was responsible for ensuring purchase requisition required supplier surveillance activities were performed as required. Although no surveillances had been performed, the Supervisor described his program for performing these surveillances. The Supervisor explained that the Contractor had, at its disposal, a fully owned subsidiary company, Global Supply Group, that will provide Bechtel-qualified supplier inspectors, located in regional offices throughout the United States. These inspectors would be available to the Contractor to perform supplier surveillance inspections as needed. A more detailed look at this area will be performed once substantial procurement activities are underway.

### **1.12.3 Conclusions**

The Contractor's efforts to maintain an ASL were acceptable. Actions to re-certify existing suppliers were commendable, resulting in the identification and in-progress resolution of QA performance problems. The Contractor's actions regarding the identification, follow-up review, and resolution of an identified supplier QA deficiency were noteworthy.

### **1.13 Follow-up on Previously Identified Inspection Items (Inspection Administrative Procedure (IAP) A-106)**

Selected inspection follow-up items, identified in previous inspection or evaluation reports, were reviewed to determine if they could be closed. The inspectors reviewed the Contractor's commitments provided in its responses to these inspection follow-up items and other information provided. The inspectors verified by work observation, records review, and other means as appropriate, that the corrective actions stated were appropriately completed. When warranted, the inspectors determined: (1) whether the Contractor had conducted an in-depth root-cause analysis (and implemented any appropriate corrective actions such as hardware or design modifications, training, procedure changes, or other actions as appropriate), (2) that generic implications were addressed, and (3) the Contractor's safety management practices and procedures were strengthened, as appropriate, to prevent recurrence.

1.13.1 (Closed) IR-00-006-01-FIN, "Five examples of failure to provide to the OSR timely, complete, and accurate information, in that inspection report response letters to the OSR were not amended when the Contractor changed its planned corrective actions." During the December 18, 2000, through January 18, 2001, inspection of Contractor (BNFL, Inc, and CHG) actions to address previously identified inspection Findings and follow-up items, the inspectors found several examples where the Contractor had revised its corrective action commitments previously documented in formal inspection Finding responses. An inspection Finding was identified for failure to provide to the OSR timely,

complete, and accurate information, in that inspection report response letters to the OSR, were not amended when the Contractor changed its planned corrective actions.

On April 20, 2001, the BNI provided a response to this Finding (CNN: 019348). In the response, which was approved by the OSR in a letter dated April 26, 2001 (01-OSR-0148), the Contractor stated that procedure K13P054, "Corrective Action," would be revised to address a process where both QA and the ES&H organizations would have specific responsibilities regarding ensuring the corrective actions for regulatory deficiencies would be the same as those specified in response documents or the OSR would be informed to obtain approval of the changes to the planned corrective actions. QA and ES&H were also to be required to conduct closure verifications of these deficiencies. The inspectors reviewed K13P054D, Rev. 2, dated June 15, 2001, and found it adequately addressed the corrective actions described in the April 20, 2001, response letter.

Based on the above, this item is closed.

- 1.13.2 (Closed) 01-002-OTH: In response to ORP/OSR-2001-03, Rev. 0, *Evaluation of Bechtel National, Inc. Capability To Change The RPP-WTP Authorization Basis*, dated March 19, 2001, the Contractor committed (CCN 019097) to corrective actions regarding the Contractor's organization and staffing. Specifically, the Contractor committed to implement interim measures to identify its employees.

The inspectors reviewed procedure 24590-WTP-GPP-HR-017\_0, *WTP Organization Chart and Staff Roster*, dated July 26, 2001. The procedure objective statement read, "The WTP project will maintain a project organization chart and roster of all individuals working on the project."

During this inspection, the inspectors received a copy of the Contractor's organization chart, dated July 9, 2001. This chart was signed by the Project Manager and was required to be updated monthly. The OSR inspectors concluded that the issuance of this procedure, with the objective statement discussed above, and issuance of monthly organization charts, completed the commitment and this item was closed.

## **2.0 EXIT MEETING SUMMARY**

The inspectors presented the inspection results to members of Contractor management at an exit meeting on July 27, 2001. The Contractor acknowledged the observations and conclusions presented. The inspectors asked the Contractor whether any materials examined during the inspection should be considered limited rights data. The Contractor stated that no limited rights data was examined during the inspection.



### **3.0 REPORT BACKGROUND INFORMATION**

#### **3.1 Partial List of Persons Contacted**

J. Hummer, Senior Engineer for CM  
K. Auclair, Systems Engineering Manager  
G. Schroeder, Compliance/Procedures Supervisor  
F. Marsh, Engineering Manager  
E. Hughes, Deputy Engineering Manager, Systems and Projects  
R. Souther, Chief Information Officer  
B. Busch, Manager of Engineering Automation  
P. Lowry, HLW Hazards and Safety Analysis Lead  
S. Arora, DCD Coordinator  
G. Hagen, Manager of Project Administration /Document Control  
N. Barangan, Electrical Supervisor for Balance of Facility  
D. Tretheway, Supervisor, Document Control  
P. Beers, Design Engineer for Mechanical HVAC  
G. Kloster, Technical Baseline Manager  
G. Beaumier, Principal Engineer for Melter Design  
G. Schell, Quality Assurance (QA) Manager  
D. Shugars, Quality Engineer Supervisor  
M. Platt, Safety Program Lead  
E. Smith, Safety Program Engineer  
M. Jewell, Deputy Procurement and Property Manager  
R. Anderson, Supplier Quality (Inspection) Supervisor  
S. Hudgens, Senior Designer, HLW Mechanical Handling  
M. Beary, Senior Engineer, HLW/LAW Process Engineering  
G. Best, Mechanical System Designer, Pretreatment  
A. Wong, Design Supervisor, Civil, Structural, & Architectural, Balance of Facility  
G. Kunkler, Senior Engineer, Mechanical Systems, Pretreatment

#### **3.2 List of Inspection Procedures Used**

Inspection Administrative Procedure A-106, *Verification of Corrective Actions*  
Inspection Technical Procedure I-102, *Configuration Management Assessment*  
Inspection Technical Procedure I-130, *Procurement Program Inspection*

#### **3.3 List of Items Opened, Closed, and Discussed**

##### **3.3.1 Opened**

None

### 3.3.2 Closed

IR-00-006-01-FIN	Finding	Five examples of failure to provide to the OSR timely, complete, and accurate information, in that inspection report response letters to the OSR were not amended when the Contractor changed its planned corrective actions.
1-002-OTH	Follow-up Item	The Contractor committed (CCN 019097) to corrective actions regarding the Contractor's organization and staffing. Specifically, the Contractor committed to implement interim measures to identify its employees.

### 3.3.3 Discussed

None

### 3.4 List of Acronyms

ABAR	Authorization Basis Amendment Request
ABCN	Authorization Basis Change Notice
ALARA	as low as reasonably achievable
ASL	Approved Suppliers List
BNI	Bechtel National, Inc.
CM	Configuration Management
DCD	Design Criteria Database
DIM	Design Input Memorandum
DOE	U. S. Department of Energy
DMS	Document Management System
DRR	Document Review Request
ES&H	Environmental Safety and Health
HLW	High Level Waste
ICD	Interface Control Document
IFI	Inspection Follow-up Item
IR	Inspection Report
ISM	Integrated Safety Management
ISMP	Integrated Safety Management Plan
ITP	Inspection Technical Procedure
ITS	important-to-safety
LAW	Low Activity Waste
LCA	Limited Construction Authorization
ORP	Office of River Protection
OSR	Office of Safety Regulation

OTH	Other
PDC	Project Document Control
PSC	Project Safety Committee
PT	Pretreatment
QA	quality assurance
QAM	Quality Assurance Manual
QAP	Quality Assurance Program
QARD	Quality Assurance Requirements and Description
QL	Quality Level
RFP	Requests for Proposals
RPP-WTP	River Protection Project Waste Treatment Plant
SIPD	Standards Identification Process Database
SRD	Safety Requirements Document
SSCs	structures, systems, and components

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