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SUBJECT: Forwards partial response to TAA 830516 audit rept Findings  
 15 & 16 of independent verification program. Response to  
 Finding 14 forthcoming.

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 subject of the land owned by the United States in the  
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 information of the public.

The following is a list of the land owned by the United States  
 in the State of California, and the same is hereby published for the  
 information of the public.

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## Washington Public Power Supply System

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Director of Nuclear Reactor Regulation  
Attention: Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: INDEPENDENT AUDIT OF WNP-2  
PLANT VERIFICATION PROGRAM

Enclosed is our response to findings Nos. 15 and 16 of the May 16, 1983, TAA audit report. We will provide a response to finding No. 14 at a later date. If you have questions related to the TAA report or the Supply System response, contact John R. Honekamp (509) 372-5359.

Very truly yours,

*G. D. Bouche*

G. D. Bouchey, Manager  
Nuclear Safety and Regulatory Programs

Enclosures: 1. TAA Report  
2. Supply System Response

cc: R Auluck NRC  
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June 8, 1983

PARTIAL RESPONSE TO TAA AUDIT REPORT  
DATED MAY 16, 1983

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TAA Finding #15

The QVP does not inspect certain important construction features such as the supporting and securing of power plant components. This "hole" in QVP's scope should be filled.

Supply System Response

It is correct that the QVP has not reinspected major mechanical equipment supports, however, it is not correct that this fact represents a "hole" in the QVP scope. The purpose of the QVP is to verify the adequacy of safety-related work completed, inspected and accepted prior to the stop work in July 1980. Independent of the QVP, substantial reinspections have been performed as part of the Test and Startup Program and to resolve specific problems identified during and after the Restart Program. Therefore, the general approach employed by the QVP is to identify the work completed, inspected and accepted prior to the stop work, evaluate any special reinspections performed independent of the QVP, then perform those additional reinspections needed to meet the QVP requirements.

At the time of the TAA audit, this process had not been completed for major mechanical equipment installed by the 215 contractor, hence the general approach was discussed with TAA, but no conclusions were presented relative to the need for reinspection by the QVP. This evaluation has now reached the point where it is clear that all 215 mechanical equipment was transferred to Bechtel prior to the completion of final alignment and document review. Although installation of some equipment was essentially complete, the fact that final alignment and document review were not complete has led the Project to treat all WBG equipment installations as incomplete. Therefore, this element of the 215 Contract work does not fall within the scope of QVP.

As indicated on pages 7 and 13 of the TAA audit report, this finding was triggered by the fact that shims were observed to be missing from the RHR-B heat exchanger during a Supply System field inspection conducted as part of the Design Reverification Program. This inspection was conducted on April 27, 1983, the day prior to the Finding Review Committee (FRC) meeting attended by TAA during which Potential Finding Reports (PFR) RHR-24 and 33 relative to this inspection were discussed. The FRC classified these two PFRs as findings and requested a meeting with the Project to determine the status of the installation and the cause of the apparent discrepancies. Although the Project review is not yet complete, it has been established that final alignment and inspection of the RHR heat exchangers were not completed at the time of the

stop work and that the missing shims were the result of a construction coordination problem that occurred later when Bechtel assumed responsibility for work that was partially completed by the original 215 contractor. Since the QVP addresses work that was completed, inspected and accepted prior to the stop work, this problem which occurred after the stop work is not indicative of a "hole" in the program, therefore, no redirection of the QVP is required. This problem will be evaluated and corrected through the ongoing construction and QA programs.

The construction coordination problem that resulted in the missing shims is characterized by the coincidence of unique installation requirements and the transfer of responsibility for installation work that was partially complete.

As part of our ongoing construction completion program (not QVP), we intend to increase our confidence that there is not a generic problem with equipment installation resulting from the transfer of responsibility from WBG to Bechtel by reviewing all Contract 215 QC-I equipment installation packages to assure that vendor equipment installation requirements have been implemented. Records will be checked to assure that applicable vendor requirements have been incorporated in the installation; assure that closing documentation exists for all equipment installations entered on the MWL; and to assure that open items have been transferred to the TCS. Where documentation is not adequate to provide objective evidence that these requirements have been met, field verification will be used to assure that they have been implemented regardless of who did the work.

The following summary of results from the Project review of the RHR heat exchanger deficiencies provides the basis for our conclusions that the final alignment and inspection was not complete in July 1980 and that the missing shims were the result of a construction coordination problem associated with the coincidence of unique installation requirements and the transfer of responsibility for installation work that was partially complete.

1. The RHR heat exchangers were received in 1975 and installed by WBG in May 1978. Final alignment and inspection was not complete at the time of the work stoppage in July 1980 as identified in the WBG documentation completion program effort (Ref. WBG BEC-215-82-0363, dated 4/15/82). The work was subsequently transferred to BPC.
2. WBG Inspection Report 215-IR-09880, dated 4/5/82, regarding RHR-HX-1A indicated installation documentation is incomplete. WBG Inspection Report 215-IR-09887, dated 4/19/82, regarding RHR-HX-1B indicated installation documentation is incomplete. These IRs were closed by WBG with QC verification of installation and closure to be transferred to Bechtel.

3. The GE Specification 22A5233, "Installation Instructions for RHR Heat Exchangers" provided installation instructions for the upper keyway fitup clearances and the lower support clearances between the slotted hole and the bolt. This instruction allowed either the use of shims or restraining pads for the lower supports. This specification was included in the 215 Contract, Appendix IV.
4. RFI-PQA-107, dated 1/16/79 identified that foundation detail on BRI Drawing No.S772 does not call for shims or restraining pads for the supports as required by GE Specification 22A5233. The RFI was dispositioned by agreeing that the changes shall be made to the support bracket per GE instructions and the installation shall be in accordance with procedures and verified by QA/QC.
5. Letter WNP-2 WBG-215-F-80-1096, dated 4/14/80, transmitted PED 215-CS-2677 which provided direction to install shims on the upper keyway support to reduce the gap (X + Y) on both heat exchangers in compliance with GE Spec. 22A5233. The PED contained as-built dimensions of the gaps required to be shimmed for both heat exchangers.
6. GE FDDR KK1-165, dated 3/24/80, was issued to disposition two cases at azimuths 90 and 180 where the as-built "Z" dimensions on the upper keyways exceeded the GE specification. These cases were dispositioned "use-as-is" based on GE calculations.
7. A review of WBG heat exchanger work packages found preliminary and incomplete sketches and calculations for restraining pads at the lower support. Neither the shim installation nor the restraining pads had been completed by the time of the stop work order.
8. In closing the WBG IRs (item 2) Bechtel addressed the requirements contained in GE Specification 22A5233 for torquing the nuts on the anchor bolts, but apparently overlooked the requirements for shimming the upper and lower supports which are contained in the same document.

#### TAA Finding No. 16

In view of the gap in the QVP inspection program identified in Finding No. 15, we believe there should be a fresh, systematic appraisal of the QVP scope to determine if there are other significant areas which are not covered by it.

#### Supply System Response

Our discussion with TAA representatives on April 29, 1983, may have unintentionally left the impression that equipment installations are not being verified. The Bechtel Reverification Group (BRG)

was performing an evaluation of Project programs which address Contract 215 equipment installation at the time of TAA's visit. This evaluation will be included in the Contract 215 reverification report.

At our April 29th meeting, we responded to TAA's questions on the RHR heat exchanger mounting by taking action to investigate whether or not the missing shims should have been discovered by QVP reinspections. At the receipt of this audit finding (5/19/83) we were concluding a part of our investigation which has revealed that Contract 215 equipment installations were not completed prior to July 1980, and are therefore outside the scope of QVP (Re: response to finding No. 15).

To clear the path for understanding the completeness of QVP's examination of Contract 215's work scope, not only to determine the total quantity of hardware to be reinspected but to identify specific items to be selected for reinspection, you may need to be aware that WBG's computer control lists were used as the basis for establishing the QVP scope. These lists provide an identification of work packages for piping, hangers, structural items and equipment; the only substantive categories of work in the contract. The coverage of QVP reinspections, including Contract 215, is typified in the following lists:

#### QVP ELEMENTS

##### Systems Completion

- o Piping and Hangers
- o Structural Steel
- o Equipment Installation
- o Ductwork and Hangers
- o Cable Installation and Terminations
- o Conduit Support
- o I&C Installation

##### Prepurchase & Inactive Contracts

- o Components and Valves
- o Cable
- o Structural Steel
- o Concrete, Resteel and Cadwelds
- o Cranes and Hoists
- o Piping and Hangers
- o Mechanical and Electrical Equipment
- o Soil Compaction
- o Instrumentation

Special Tasks

- o Design Change Documentation
- o Personnel Qualifications
- o Receiving Inspections
- o Grout

Further, many other review, reinspection and evaluation activities serve to comprise the totality of WNP-2 construction verification:

"OTHER" VERIFICATION ACTIVITIES

- o Sacrificial Shield Wall Evaluation and Repair Program
- o PWR Review and Repair Program
- o WBG Documentation Completion Program
- o Restart Program Elements
- o Weld Radiograph Review
- o Concrete Anchor Evaluation Program
- o Backfill Testing Program
- o Structural Steel Bolting
- o Drywell Steel Inspection
- o Special Inspections and Audits by Corporate or Project QA
- o Hanger Retrofit Program
- o Piping and Hanger As-Built Programs
- o TSU's Component Verification Program
- o Pre-Service Inspection
- o Coating Rework
- o Bechtel QA Program Elements

We believe the root cause of the RHR heat exchanger support deficiency is a construction coordination problem which occurred during the transfer of responsibility from WBG to Bechtel for completing the installations. The resulting vulnerability to potential deficiencies is limited to Contract 215, as no other such transfer of responsibility between contractors has taken place. This issue is being appropriately addressed as described in our response to Finding 15.

In conclusion, the Quality Verification Program is soundly based on our comprehensive assessment of the construction work in place prior to the stop work, and our careful consideration of that work for possible reinspection. No further appraisal of the QVP scope is necessary.



