

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-344/78-17

Docket No. 50-344 License No. NPF-1 Safeguards Group _____

Licensee: Portland General Electric Company
121 S. W. Salmon Street
Portland, Oregon 97204

Facility Name: Trojan

Inspection at: Bechtel Power Corporation, San Francisco, California

Inspection conducted: August 28-30, 1978

Inspectors: *L. J. Vorderbruggen* 9/7/78
for D. F. Kirsch, Reactor Inspector Date Signed
T. W. Hutson 9/7/78
T. W. Hutson, Reactor Inspector Date Signed
_____ Date Signed

Approved By: *R. C. Haynes* September 7, 1978
R. C. Haynes, Chief, Projects Section, Reactor Date Signed
Construction and Engineering Support Branch

Summary:

Special Inspection on August 28-30, 1978 (Report No. 50-344/78-17)
Areas Inspected: An announced inspection was conducted by regional based inspectors of licensee quality assurance audit activities at the Bechtel Power Corporation, San Francisco Power Division. Also, the NRC inspectors independently examined the implementation of Bechtel quality assurance program/procedures and engineering department procedures effecting design control/verification for the control building structural support system modification. The inspection involved 32 inspector-hours by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Individuals Contacted

a. Portland General Electric Company (PGE)

- *F. H. Greenwood, QA Supervisor-Projects
- *M. R. Gandert, Civil Engineer
- *H. R. Sager, QA Supervisor-Operations

b. Bechtel Power Corporation (Bechtel)

- D. L. Damon, Project Engineer
- S. T. Cozzens, Project Quality Engineer
- K. K. Gross, Civil Engineering Group Supervisor
- T. M. Baler, Civil Engineering Group Leader
- H. B. Norris, QA Supervisor
- D. Vanderpol, QC Supervisor
- T. J. Flickinger, QA Engineer
- J. H. Draggs, Project QA Engineer

*Denotes those attending exit interview.

2. Audit of Design Control for Control Building Modification

a. General

The licensee conducted an audit of the Bechtel Power Corporation, San Francisco Power Division Trojan Project activities relating to the control building structural support system modification. The licensee audit team was accompanied by Region V NRC inspectors whose inspections consisted of the following activities:

- (1) Examination of the licensee audit scope, substance and conclusions.
- (2) Examination of selected Bechtel procedures and activities to independently establish conclusions regarding procedural adequacy and compliance.

b. Licensee Audit Planning and Conduct

The inspectors examined the licensee's audit planning guide which addressed those criteria of 10 CFR 50, Appendix B, applicable to the control building structural support system modification. The audit plan referenced applicable Bechtel procedures and by checklist identified specific items to be examined.

Areas examined by the auditors consisted of the following:

- (1) Quality Assurance Program
 - (a) Issuance and Control of the Bechtel Nuclear Quality Assurance Manual (NQAM)
 - (b) Project Quality Document List
 - (c) Personnel Indoctrination and Training
 - (d) QA Management Audits
- (2) Organization
- (3) Design Control
 - (a) Design Criteria
 - (b) Design Interface Control
 - (c) SAR Change Control
 - (d) Project Q List
 - (e) Specifications
 - (f) Calculations
 - (g) Drawings
 - (h) Material Requisitions
 - (i) Contracts
 - (j) Project Master Distribution Schedule
 - (k) Bid Evaluation
- (4) Construction Quality Control Program
- (5) Audits

The licensee identified certain items requiring corrective action and identified these to Bechtel. In each case, Bechtel initiated actions to correct the item. The licensee identified two items for which they require a formal response from Bechtel.

The NRC inspectors found that the licensee's audit was conducted in a manner consistent with regulatory requirements. No items of noncompliance or deviations were identified.

c. Review and Implementation of QA Procedures

The inspectors examined the following Bechtel procedures applicable to design control:

- (1) Nuclear Quality Assurance Manual, Section II, Design Control Procedures
- (2) EDP 4.1, Revision 2, Design Criteria
- (3) EDP 4.27, Revision 0, Design Verification
- (4) EDP 4.34, Revision 2, Off-Project Design Review
- (5) EDP 4.36, Revision 0, Standard Computer Programs
- (6) EDP 4.37, Revision 2, Design Calculations
- (7) EDP 4.46, Revision 8, Project Drawings
- (8) EDP 4.49, Revision 8, Project Specifications

The inspectors found that the Nuclear Quality Assurance Manual, Section II, was consistent with the quality assurance requirements of 10 CFR 50, Appendix B. The above Engineering Department Procedures (EDP's) were found to provide suitable measures to effectively implement the quality assurance requirements of the Nuclear Quality Assurance Manual.

No items of noncompliance or deviations were identified.

d. NRC Inspections

The inspectors examined the following documents for conformance with requirements of the Bechtel Quality Assurance Manual, Section II and related implementing procedures:

- (1) Calculations for base slab (G1) and foundation rock anchors (G8)
- (2) Structural support system drawings:
 - (a) C-1100 Foundation Plan Section and Details

- (b) C-1101 Floor Plans - Elevation 61' and 77'
 - (c) C-1102 Roof Plans and Floor Plan at 93'
 - (d) C-1104 Section A at Line N
 - (e) C-1105 Section B at North Wall
 - (f) C-1106 Sections C and D
 - (g) C-1107 Section E at South Wall
 - (h) C-1108 Elevation at Column Line R
 - (i) C-1200 Reinforced Concrete Details
 - (j) C-1201 Support System Connection Details
- (3) Bechtel audit of project engineering drawings performed on August 22, 1978
 - (4) Bechtel plan and checklist for design calculations audit performed on August 28, 1978
 - (5) Design Control Checklist
 - (6) Drawing Control Log
 - (7) Design Review Notice Log
 - (8) Specifications as follows:
 - (a) C-335 Technical Requirements and Specifications for Furnishing Concrete
 - (b) C-351 Purchase of Reinforcing Steel
 - (c) C-386 Rock Anchors
 - (d) C-441 Material Testing Services
 - (e) C-450 Pipes, Valves and Fittings

No items of noncompliance or deviations were identified.

3. Exit Interview

At the conclusion of the inspection on August 30, 1978, the inspectors met with licensee representatives (denoted in Paragraph 1) to summarize the inspection purpose, scope and findings as documented in this report.