



Portland General Electric Company

David W. Cockfield Vice President, Nuclear

October 27, 1989

Trojan Nuclear Plant
Docket 50-344
License NPF-1

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington DC 20555

Dear Sir:

Additional Information Pertaining to
Inspection Report 50-344/89-09

Your letter of August 29, 1989 forwarded Inspection Report 50-344/89-09. There were several requests for additional information contained in the body of the report.

Attachment 1 to this letter provides the requested information.

Sincerely,

Attachment

c: Mr. John B. Martin
Regional Administrator, Region V
U.S. Nuclear Regulatory Commission

Mr. David Stewart-Smith
State of Oregon
Department of Energy

Mr. R. C. Barr
NRC Resident Inspector
Trojan Nuclear Plant

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RESPONSES TO REQUESTS
FOR ADDITIONAL INFORMATION

1. Weaknesses in the Identification of Visually Apparent Design Problems

A walkdown of the emergency ventilation system for the Control Room, CB-1, resulted in identification of an improperly installed ventilation support by the inspector. The inspector requested Portland General Electric (PGE) Company to determine if this condition had been previously noted and evaluated. PGE responded it had not. At a meeting with PGE on June 8, 1989, the inspector questioned management regarding the programs in place that should identify deficient conditions which could affect proper design basis implementation. Several additional examples of problem identification deficiencies were noted by the Nuclear Regulatory Commission (NRC) team during the inspection. As a result of this observation and discussion, PGE management committed to address needed actions to increase the recognition and evaluation of visually apparent problems in response to the inspection report.

Response

In 1989, PGE has generated over 450 Nonconforming Activity Reports (NCARs), 500 Nonconformance Reports (NCRs) and 10,000 Maintenance Requests. These problem identification and tracking systems show that PGE has recognized and taken actions to evaluate visual, as well as administrative, problems at Trojan. PGE will continue to emphasize problem identification and resolution to ensure all apparent problems are identified and appropriate corrective action is taken.

One such mechanism to identify apparent problems is the walkdowns of safety-related systems to verify the Design Basis Documents (DBDs). These walkdowns will be reperformed for all systems, since the adequacy of the original walkdowns is questionable. The walkdowns will be conducted by a team of representatives from the Nuclear Plant Engineering (NPE), and Plant System Engineering (PSE), and Quality Assurance.

As part of a new Engineering Excellence Program, PGE is considering quarterly system walkdowns by PSE and NPE engineers to provide additional opportunity to further recognize and evaluate visually apparent problems.

PGE plans to provide written guidance to personnel prior to conducting the walkdowns. The guidance will focus on recognizing deficient conditions which could effect the system design basis.

2. Design Basis Document Program Scope

The overall list of DBDs was reviewed by the team for completeness. The team identified that PGE did not have plans for any generic DBDs, such as Cable and Raceway Systems or concrete anchor bolts. As a result of this discussion, PGE committed to study and address the need for such Generic DBDs as a response to the inspection report.

Response

PGE has prepared some generic DBDs, specifically for structural and seismic design bases, site external hazards (tornado, external flooding, volcano, aircraft impact, explosion hazards, toxic chemicals, ship collision with the intake structure, and freezing weather), and site internal hazards (high-energy and moderate-energy line breaks, flooding due to pipe breaks, and internally generated missiles).

PGE is in the process of evaluating the entire DBD Program for the purpose of upgrading the program. All previously issued DBDs will be reviewed in 1990 and revised to provide additional design information as necessary. As a part of this evaluation, PGE will determine what additional DBDs are to be written and plan a schedule for completion of this task. This evaluation will include a study of the need for generic DBDs on Cable and Raceway Systems and Anchor Bolts. The evaluation is scheduled to be completed by April 30, 1990. A new schedule for additional DBD preparation will then be determined.

3. Improper Concrete Anchor Bolt Factor of Safety

In addition to the apparent violation for concrete anchor bolt factor of safety (Item 50-344/89-09-04), it was identified that there is apparently no design guide, or equivalent document, available to establish design requirements for concrete anchor bolts. PGE committed to include a discussion of the availability of appropriate design guidance such as design manuals or design guides generally used by designer organizations in response to this inspection report.

Response

PGE uses design guidance contained in various documents for civil/structural designs. Examples of these documents are:

- Final Safety Analysis Report (FSAR)
- Regulatory Guide In-House Position Statements
- Civil Structural Design Criteria Standard 11760-C1
- Design Requirements for Original Specifications
- Applicable Codes and Standards
 - Uniform Building Code
 - American Institute of Steel Construction (AISC)
 - American Iron and Steel Institute (AISI)
 - American Concrete Institute (ACI)
 - American Welding Society (AWS)
- Civil Branch Guides
 - Cable Tray Support Analysis
 - Seismic Analysis and Reviews
 - Passive Fire Protection Procedures

The need for additional design guidance is recognized. The issuance of additional Civil Branch Guides is planned with at least three to be issued prior to the end to 1989. One of these guides will include more specific design criteria for concrete anchor bolts.

In addition to the Civil Branch Guides, PGE has several existing Design Criteria Documents for both Electrical and Mechanical Branches. These documents are revised as necessary and new documents are issued on an as-needed basis as identified by PGE management.

4. Systematic Efforts to Identify and Resolve Design Vulnerabilities

PGE was requested to provide written response discussing management plans regarding systematic efforts to identify and resolve design vulnerabilities through future Safety System Functional Inspections (SSFIs) or other processes.

Response

In addition to using system-related DBD walkdowns and other processes previously addressed in this attachment, PGE has committed to performing SSFIs at the Trojan Plant.

PGE will perform these evaluations under the cognizance of the Quality Operations (QO) Branch of the Nuclear Quality Assurance Department. Members of the existing QO staff will be supplemented with experienced contract engineers to form an inspection team for the evaluation. The 1989 inspection is scheduled to begin November 13, 1989 and will cover the Service Water System.

5. Review of Safety Evaluations

The inspector, in discussion with licensee representatives, suggested that the procedure for safety evaluations (Procedure 100-5, Revision 4) should be reviewed for improvements and that the licensee might consider reviewing a sample of past safety evaluations for similar omissions. The licensee was requested on July 21, 1989, to consider these suggestions in their response to the apparent violation.

Response

Nuclear Division Procedure (NDP) 100-5, "Preparation of Safety Evaluations Required by 10 CFR 50 and Trojan Technical Specifications", was reviewed for improvements, and Revision 5 has been implemented. Revision 5 includes the guidelines from the Nuclear Safety Analysis Center (NSAC) Guide 125. Further improvements are currently under evaluation.

PGE has considered the suggestion to conduct a review of a sample of past safety evaluations. Since the safety evaluations receive an independent review by the Trojan Nuclear Operations Board (TNOB) staff, it has been determined that further independent review is unnecessary.