U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-344/88-17

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License No. NPF-1

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

Facility Name: Trojan Nuclear Plant

Inspection at: Rainier, Oregon

Inspection Conducted:

Charles Ramsev. Reactor Inspector Richards, Chief Engineering Section

Approved by:

S'mmary:

Inspection on April 18-21, 1988 (Report No. 50-344/88-17)

<u>Areas Inspected</u>: Routine unannounced inspection of the licensee's fire protection program implementation and action on previous NRC inspection findings. Inspection procedures 64704 and 92701 were used.

Results: Of the areas inspected, one violation was identified.

DETAILS

1. Individuals Contacted

Portland General Electric

*D. W. Cockfield, Vice President, Nuclear *C. A. Olmstead, General Manager, Trojan *J. W. Lentsch, Personnel Protection Manager *J. McClersebar, Manager, Plant Modifications *A. N. Roller, Manager, Nuclear Plant Engineering *T. D. Walt, Manager, Nuclear Safety and Regulation *C. P. Yundt, General Manager, Technical Functions *C. H. Brown, QA Operations Branch Manager *R. L. Russell, Operations Supervisor *J. D. Reid, Manager, Plant Services *D. W. Swan, Manager, Technical Services *D. Swanson, Manager, Nuclear Safety Branch *L. Erickson, Manager, Nuclear Quality Assurance *M. Perry, Nuclear Plant Engineering Supervisor *R. Reinhardt, Fire Protection Supervisor *A. R. Ankrum, Compliance Engineer *D. Ferrell, Quality Assurance Engineer *J. Siebel, Senior Mechanical Engineer *R. N. Hanen, Electrical Engineer *M. Gandert, Civil Engineer

Bechtel

*F. Stumpp, Nuclear Plant Engineering

NRC

*T. Storey, SAIC Consultant

*Denotes those attending the exit meeting held on April 21, 1988.

- 2. Licensee Actions On Previous Inspection Findings
 - A. (Closed) Violation 344/87-34-07, "Manual Firefighting Capability". In response to this Notice of Violation, the licensee's corrective actions included the following:
 - (1) Improved Fire B igade Training The licensee's Quality Assurance Surveillance Report No. P166 (CHB-37-88) documents a Quality Assurance Engineer's observation of internal structural firefighting and live fire training that was provided to 14 fire brigade members by the licensee on April 8, 1988 at Chemeketa Community College. The training lasted a full day and the attending fire brigade members were the last of the Trojan Fire Brigade members required to be trained in 1988.

All of the other fire brigade members received this training earlier in the year.

According to the Quality Assurance Engineer's observations, the training was of excellent quality. It included classroom instruction on the use of fire apparatus, breathing apparatus, protective clothing, fire hose streams and safety procedures. Smoke training was performed in a concrete structure in a manner that created challenge and uncertainty for the brigade members. Live and internal structural firefighti g was described by the Quality Assurance Engineer as thorough and strenuous.

According to the licensee, this training will be provided annually to all fire brigade members and as initial training for all new fire brigade members. As a result of the licensee's evaluation of each brigade member's performance during the training, the licensee made the determination that at least one fire brigade member was not suitable for this type of work activity. The licensee further acknowledged that this level of comprehensive training for the fire brigade is an asset to the plant's overall fire protection program.

(2) Improved Offsite Fire Department Assistance -

Coordination with the offsite fire department has been improved by having department fire chiefs attend General Employee Training for site badging, and familiarization tours of the plant have been given to responding offsite fire department personnel. Pre-fire plans have been updated and provided and interface procedures nave been developed that delineate methods for accomplishing tasks such as reporting of fires, site access and personnel management during fires.

B. <u>(Open) Violation 344/87-34-01, "Lack of Qualified Staff Involvement</u> in Fire Protection Program Implementation". In response to this Notice of Violation, the Licensee's December 28, 1987 submittal to the NRC acknowledged the violation and indicated that actions taken to avoid future violations in this area consisted of a revision of Nuclear Division Procedure (NDP) 200-1, Nuclear Engineering Procedure (NPEP) 200-1 and Administrative Order (AO) 10-2 to specify the qualifications required for personnel to perform these reviews. The licensee's response further states in part that, "these requirements will be equivalent to those provided in BTP Chemical and Mechanical Engineering Branch 9.5-1."

The inspector's review of procedure NDP 200-1 controlling the design review for the C-160 remote shutdown panel modification currently in progress disclosed that the revised procedure did not conform to the appropriate NRC licensing documents (Technical Specification 6.5.3 and 6.8.1; Section A.1 of Appendix A to B.T.P. 9-5-1; Section 1.0 of NRC supplemental Guidance, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance" and; ANSI N.45-2.11). In five Non-Conforming Activity Reports (NCAR's) and two Non-Conforming Reports (NCR's), the Licensee's Internal Quality Assurance Audit Report No. LWE-4-BB, dated January 13, 1988, identifies similar concerns relating to design change control and involvement of the Loss Prevention (Fire Protection) Engineer in this process. Furthermore, during the inspection, the inspector's review of 17 Fire Protection Interface Checklists for the design control process for Request for Design Change (RDC) number 85-052 and the resulting 17 approved Design Change Packages (DCP's) for the C-160 remote shutdown panel modification disclosed that the appropriate fire protection discipline review included in this process. This has resulted in a number of Field Change Notices (FCN's) to the associated DCP's. Therefore, the licensee has employed outside qualified fire protection consultants to perform this review of the remote shutdown panel modification DCP's.

Regarding the broader concern for a qualified fire protection engineer's consistent involvement in the design control process as part of the routine fire protection program implementation, the licensee took the position that "a careful reading of Technical Specifications and PGE-8010 ("PGE Nuclear Quality Assurance Program"), do not explicitly require that a "Fire Protection Engineer" review new designs and modifications. The licensee feels that their response to statement No. A.1 of Branch Technical Position (BTP) APCSB 9.5-1 substantiates their position. Therefore, the various members of PGE Engineering Department who are knowledr, eable in fire protection system designs and the requirements of Nuclear Plant Safety are qualified to perform these 1-views.

The inspector informed the licensee that this issue is being forwarded to MRR for resolution. This item remains open pending NRR resolution.

C. (Open) Violation 344/87-34-02, "Failure to Follow Procedures Required to Issue Welding and Cutting Permits."

In response to this Notice of Violation, the licensee's December 28, 1987 submittal to the NRC took exception to this violation on the basis that the violation resulted from a lack of information provided by PGE to the NRC inspector. The licensee further stated in their submittal that subsequent to receipt of the 344/87-34 inspection report, selected craft foremen who would normally initiate welding and burning permits were interviewed, and all were appropriately knowledgeable of the welding and cutting requirements i licensee procedure No. PS-7.

In response to the inspector's follow-up on this concern, the licensee acknowledged on April 21, 1988 that their further investigation into this matter revealed that there were personnel issuing welding and cutting permits who had not been appropriately trained. Furthermore, there was no documentation available to verify the training of some individuals who indicated they were knowledgeable of licensee procedure No. PS-7. Therefore, on April 21, 1988, the licensee discontinued issuing welding and cutting permits and immediately began training sessions on procedure No. PS-7 and the special contingencies associated with the current outage for all personnel responsible for issuing welding and cutting permits.

In view of this acknowledgement and statements made by the licensee in a December 28, 1987 submittal to the NRC in response to this concern, the licensee indicated that a revised response to the Notice of Violation would be submitted which will acknowledge the validity of the violation.

This item remains open pending further licensee action and verification by Region V.

3. Remote Shutdown Pane! Modification

To meet the technical requirements of Appendix R to 10 CFR 50, the licensee is in the process of installing the required control room alternate shutdown capability, with primary control and process monitoring functions provided by remote panel controls and indication. The previous C-160 remote shutdown panel has been removed and a new panel is being installed in a new location with enhanced remote shutdown capability.

The results of the inspector's review of the licensee's Request for Design Change (RDC) No. 85-052 for this installation are as follows:

A. Review of Design Change Packages (DCP's)

There are 18 DCP's associated with this modification (DCP No. 17 was not issued at the time of the inspection). Based on the inspector's understanding of the licensee's design change control process and review of the associated DCP's, the inspector concluded that none of the DCP's had received a proper review by a qualified fire protection engineer. Checklists attached to the DCP's entitled "Fire Protection Interface Review Form", were prepared and approved by individuals of varying expertise (i.e. civil, mechanical engineering, etc.) but none of the individuals were qualified as a fire protection engineer. No other fire protection review of the modification was performed.

Apparently because of this lack of review by a fire protection engineer in the initial design control process, the licensee is experiencing numerous field changes to the design as a result of contractor fire protection engineers reviewing the design post-installation. This is further discussed in paragraph 2.B. of this report.

B. Testing of the Remote Shutdown Panel

The licensee has performed numerous Temporary Plant Tests (TPT's) on various remote shutdown panel circuits for functional integrity. Various other testing will be performed on the panel components using Plant Operating Test (POT) and Plant Engineering Test (PET) procedures. TPT No. 249 is scheduled to be performed as an intergrated Hot Functional Test (HFT) of the complete remote shutdown panel modification prior to restart from the current outage. The licensee is pursuing with NRR the appropriate acceptance criteria for this test.

C. Fire Barrier Penetration Seal Configuration Control

Where fire barrier penetration seals were required to be breached by the remote shutdown panel modification, the licensee's design control procedure (NDP-200-1) required preparation of a construction package to control these fire barrier penetrations in accordance with procedure No. NDP-200-14. Attachment No. 1 to Request for Design Change (RDC) No. 85-052 contains the scope of fire barrier penetration seal work associated with Design Change Package (DCP) No. 14 for the remote shutdown panel installation. Where such penetration seals are required to be degraded or breached, the work instructions in the attachment requires that fire watches be maintained pursuant to plant technical specifications.

D. Operator Training

The licensee stated that overview training of the remote shutdown panel modification was provided to all licensed and non-licensed operators during March and April 1988. Hands on training for licensed operators (grave yard shift only) simulated use of the panel on the Bailey Computer System. This training was being conducted at the time of the inspection.

The task analysis of the control room evacuation procedure was complete and required operator actions and fire brigade preplans were being developed. Fire area success trees and matrix changes impacting the remote shutdown methodology were ongoing due to required field changes to the panel design. The licensee indicated that procedure revision and upgrading would continue until this process was complete. Once the installation is complete, a validation walk through will be performed by each operations area as initial training. Operator training on the panel installation will be included in initial, annual requalification and simulator training. At least two operations crews will be trained to perform startup testing (TPT-249) of the panel.

E. Enhanced Capability of the Remote Shutdown Panel

As modified by the licensee, the remote shutdown panel will provide substantially more controls and indications than was provided on the previous remote shutdown panel required by General Design Criterion (GDC) 19. Furthermore, the modified panel will provide remote controls and indications beyond the minimum requirements of Appendix R to 10 CFR 50. The licensee indicated that the extent of the additional capability of the panel would be provided to the NRC upon request.

No violations or deviations were identified.

4. Routine Fire Protection Program Review

A. Fuel Building Fire Detector Installation

Sections 5.4.4 and 5.4.6 of the NRC's Safety Evaluation Report (SER) dated March 1978, and Amendment No. 22 to Facility Operating License No. NPF-1 required the licensee to install two additional fire detectors over the Fuel Building Radwaste Storage Area and two additional fire detectors in the New and Spent Fuel Pool Storage Areas, at elevation 93 feet, by the end of the 1979 refueling outage.

The licensee's FSAR (PGE-1012) response to NRC guideline position Nos. 4.8.13, 4.8.14 and 4.8.15 of Branch Technical Position (BTP) APCSB 9.5-1, indicates that compliance with the guideline positions will be achieved by installing additional fire detectors in these areas.

During a plant tour on April 20, 1988, the inspector and the licensee staff observed that no fire detectors were installed over the radwaste storage area, or in the new and spent fuel pool storage areas. Further, the inspector's review of the licensee's fire protection general plant drawing (figure 3-1.4) for this elevation of the Fuel Building disclosed that the drawing also indicated that there were no fire detectors installed in these areas.

The licensee was not certain that the fire detectors were installed within the schedular requirement of emendment No. 22 or that they were removed at some point during 9 years of plant operation.

This apparent failure to implement the provisions for an early warning fire detection system on the 93 foot elevation of the Fuel Building is considered a violation of Amendment No. 22 to Facility Operating License No. NPF-1 (344/08-17-01).

B. Quality Assurance

The inspector reviewed the licensee's internal annual quality assurance audit Report No. LWE-4-88, dated January 13, 1988. The audit was thorough and was effective in identifying a number of specific and programmatic weaknesses. Each audit finding appeared to contain appropriate recommendations for corrective actions. However, audit finding No. 13 of audit report No. LWE-4-88 identifies to the licensee that there is no single source document that lists all of the 'icensee's commitments and deviations from National Fire Protection Association (NFPA) Codes. This is a significant finding because fire protection design reviews, maintenance and surveillance activities, and staff and management decisions on fire protection concerns, can be difficult to develop without this knowledge.

During the exit meeting held on April 21, 1988, the inspector informed the licensee that while no regulatory requirement exists specifying that the licensee should have such a single source document, the absence of such a document could inhibit the proper implementation of the fire protection program. The licensee acknowledged the inspector's statements.

5. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC, the licensee, or both. Open items disclosed during the inspection are discussed in Paragraphs 2.B and 2.C.

6. Exit Meeting

An exit meeting was held with the licensee's staf on April 21, 1988. The items of concern in this report were discussed at that time and in previous meetings with the licensee. The licensee acknowledged the content and scope of the inspection findings.