Portland General Electric Company

Bart D. Withers Vice President

July 19, 1985

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Director of Nuclear Reactor Regulation
ATTN: Mr. E. J. Butcher, Jr., Acting Chief
Operating Reactors Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington DC 20555

Dear Mr. Butcher:

NUREG-0737, Item II.F.2
Inadequate Core Cooling Instrumentation

Your letter of June 13, 1985 requested information in addition to that contained in our March 12, 1984 and January 4, 1985 submittals concerning the Core Exit Thermocouple System, the subcooling margin monitors, and the Reactor Vessel Level Instrumentation System. The requested information is attached.

Sincerely,

B D Withers

Bart D. Withers
Vice President
Nuclear

Attachment

c: Mr. Lynn Frank, Director
State of Oregon
Department of Energy

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

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121 S.W. Salmon Street, Portland, Oregon 97204

REQUEST FOR ADDITIONAL INFORMATION FOR
INADEQUATE CORE COOLING INSTRUMENTATION

NRC Request

PGE has committed to upgrade the existing Core Exit Thermocouple (CET) System and it is still in process to finalize the CET System design with respect to either qualifying the existing reference junction box (RJB) or removing RJB to outside of the Containment. Provide a block diagram of the final CET System (primary and backup), including the qualification status of the components and schedule for modification, if any.

PGE Response

Our letter of January 4, 1985 provided the environmental and seismic qualification status of the final CET System. At that time, it was unknown as to whether the reference junction boxes would remain in Containment or would be relocated. It has since been determined the reference junction boxes in the final CET System will be located inside the control room (a mild environment). Seismically qualified, Class 1E platinum resistance temperature detectors will be used to measure the reference junction temperature for the backup displays.

With regard to the block diagram of the system, several design alternatives are still being considered which make it inappropriate to forward a block diagram at this time. The conformance of the system design, qualification, and schedule for installation to the NRC requirements are adequately described in our January 4, 1985 letter as supplemented herein.

NRC Request

PGE has used the two current subcooling margin monitors (SMMs) as its backup CET displays. Although the SMMs will have qualified input upon completion of CET upgrade, the SMM displays are not seismically qualified. PGE has also insisted in its two previous submittals dated March 18, 1983, and January 4, 1985 that it does not plan to upgrade SMM displays based on the short-term requirements of NUREG-0578. The Staff has responded to the PGE proposal in our February 2, 1984 evaluation that the requirements of NUREG-0578 have been superseded by specific design requirements given in NUREG-0737, Item II.F.2. Based on our review, PGE's proposal to use nonqualified SMMs as the backup displays for the CETs does not meet the requirements of NUREG-0737, Item II.F.2. In addition, the backup SMM instrumentation channel should be seismically and environmentally qualified, electrically independent from the primary SMM channel and energized from an independent station Class 1E power source, and should satisfy the single-failure criterion. Therefore,

provide the schedule and plan to upgrade the existing SMMs or provide an alternate instrumentation scheme which meets design requirements for SMMs and backup CET display.

PGE Response

As part of the CET upgrade, the two channels of the SMM will be upgraded to be electrically independent of one another and of the primary CET display. The SMMs are located in a mild environment and as such are not subject to environmental qualification requirements. The SMMs will be seismically qualified in accordance with IEEE 344-1975. Each SMM channel will be energized from an independent Class 1E power source. The SMM satisfies the single-failure criterion as follows:

a. The two SMM channels are redundant and are powered from separate trains of Class 1E power.

b. The two SMM channels will not share any common inputs.

c. The SMMs will be electrically isolated and independent from the primary CET display.

NRC Request

PGE has stated that the RVLIS will be operational by July 1, 1985 upon completion of the modification. Please describe and provide details of the modification and the schedule for submitting the implementation letter report, which was described in our February 2, 1984 evaluation.

PGE Response

As noted in our January 4, 1985 letter, problems were being experienced with the RVLIS regarding maintaining system fill. A modification was completed during the 1985 refueling outage to replace many of the system's mechanical joints with welded joints and to weld the caps on the three-way valves in the system. It is still our intent to submit the implementation letter report by September 1, 1985 as described in our March 12, 1984 letter.