



Portland General Electric Company



June 9, 1981

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir:

The attached information regarding the seismic qualification of the Trojan Nuclear Plant Auxiliary Feedwater System is being provided in response to Generic Letter 81-14 dated February 10, 1981.

Sincerely,

Bart D. Withers
Vice President
Nuclear

Attachment

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

Subscribed and sworn to before me this 9th day of June 1981.

Notary Public of Oregon

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My Commission Expires:

August 9 1983

ATTACHMENT 1

Responses to February 10, 1981 Generic Letter 81-14 Concerning the Seismic Qualification of the Auxiliary Feedwater System

NRC Item A

Specify whether your AFW system is (a) designed, constructed, and maintained (and included within the scope of seismic-related Bulletins 79-02, 79-04, 79-07, 79-14, and 80-11, and IE Information Notice 80-21), in accordance with Seismic Category I requirements (e.g., conformance to Regulatory Guides 1.29 and the applicable portions of the Standard Review Plan or comparable criteria) or (b) designed, constructed and maintained (and included within the scope of seismic related Bulletins 79-02, 79-04, 79-07, 79-14, and 80-11, and IE Information Notice 80-21) to withstand a Safe Shutdown Earthquake (SSE) utilizing the analytical, testing, evaluation methods and acceptable criteria consistent with other safety-grade systems in your plant. To assist the staff in an expeditious assessment of your plant, if your AFW system, or portions thereof, is not qualified to withstand an SSE utilizing the analytical, testing and evaluation criteria consistent with other safety-grade systems in your plant, we request that you identify those components and structures not seismically qualified in the appropriate row of the attached Table 1.

PGE Response

The safety-related portion of the AFW system (the portion of the system which is necessary for the safe shutdown of the Trojan Nuclear Plant) is designed, constructed, and maintained in accordance with Seismic Category I requirements including Regulatory Guide 1.29. This portion of the system was included in the scope of seismic-related Bulletins 79-02, 79-04, 79-07, 79-14, and 80-11, and IE Information Notice 80-21. In addition, the seismic qualification is consistent with the qualification of other safety-related systems at the Trojan Nuclear Plant.

As indicated in Table I, the primary water and supply path is not seismically qualified. Specifically, the condensate storage tank and the piping from the condensate storage tank to the check valve in each pump's suction line are Seismic Category II. However, the majority of the supply piping is underground and is expected to survive the SSE even though not designed as Seismic Category I. Furthermore, the secondary water and supply path is seismically qualified and is capable of providing the necessary water in the event the primary water supply is unavailable.

The recirculation lines from the safety-related pump to the condensate storage tank are Seismic Category II downstream of the pressure reducing orifices and locked open valves (as shown in FSAR Figure 10.4-2). A break in the recirculation lines would not jeopardize the operation of the safety-related pumps. All other electrical and mechanical components required for operation of the safety-related pumps are safety grade.

The recently installed non-safety-related motor-driven AFW pump and associated piping are not designed to Seismic Category I standards, inasmuch as the AFW system already includes two redundant 100-percent-capacity pumps which are safety related and Seismic Category I. The motor-driven pump is not required for safe shutdown of the plant.

NRC Item B

Where seismic qualification is indicated by leaving Table 1 blank, provide a description of the methodologies and acceptance criteria used to support your conclusion of seismic qualification, including: seismic analyses methods employed, seismic input, load combinations which include the SSE, allowable stresses, qualification testing and engineering evaluations performed.

In addition, where seismic qualification of a secondary water supply or path is relied upon, provide a summary of the procedures which would be followed to enable you to switch from the primary to secondary source.

PGE Response

The seismic design for the Trojan Nuclear Plant is described in FSAR Sections 3.2.1, 3.7, 3.8.1, and 3.10. The procedure for switching from the primary to the secondary water path is described in the Trojan Emergency Operating Instruction EI-5. If water from the condensate storage tank is not available to the Auxiliary Feedwater Pumps, the following operations are required:

- (a) Open the service water cross-connect valves MOV-3045A and B (control switches are located in the main control room) to supply service water to the safety-related Auxiliary Feedwater Pumps, and;
- (b) Operate the safety-related Auxiliary Feedwater Pumps in accordance with Operating Instruction OI-8-2, "Auxiliary Feedwater".

NRC Item C

If a lack of seismic qualification is indicated for items 1, 2, 3, 4, 5 and 6, 7, or 8 in Table 1, provide additional information which specifies the level of seismic qualification afforded in the original design for each of these areas.

PGE Response

This item is not applicable for the Trojan Nuclear Plant.

NRC Item D

If substantial lack of seismic qualification is indicated for items 1, 2, 3, 4, 5 and 6, 7, or 8 in Table 1, provide the same information requested in A through C for any alternate decay heat removal system. The bounds of these systems shall be considered to a similar extent as that described

for the AFW system. Provide a summary of the procedures by which operation of these alternate heat removal systems will be accomplished.

PGE Response

This item is not applicable for the Trojan Nuclear Plant.

NRC Enclosure 2 "Actions Required of Pressurized Water Reactor Licensees Without a Seismically Qualified Auxiliary Feedwater System"

PGE Response

This enclosure is not applicable since Trojan has a seismically qualified AFW system.

TABLE 1

AUXILIARY FEEDWATER SYSTEM QUALIFICATION

| <u>Components</u> | <u>Seismically Qualified</u> |
|---|------------------------------|
| 1. Pumps/Drivers | Yes[a] |
| 2. Piping | Yes |
| 3. Valves, actuators | Yes |
| 4. Power supplies | Yes |
| 5. Primary water and supply path | No |
| 6. Secondary water and supply path | Yes |
| 7. Initiation and control system | Yes |
| 8. Structures supporting or housing safety-related AFW system items | Yes |

[a] Does not include the non-safety-related motor-driven pump.

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