Portland General Electric Company

July 5, 1979

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Director of Nuclear Reactor Regulation
ATTN: Mr. A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

Enclosed are the responses prepared by Bechtel Power Corp. to informal questions raised by staff members during their site visit on June 13-14, 1979. This visit and the questions responded to herein concern construction details related to the structural modifications of the Control-Fuel-Auxiliary Building Complex.

Sincerely,

Ronald W. Johnson

R. W. Johnson
Corporate Attorney
Portland General Electric Company

RWJ/JGL/4kk6A24
Enclosure

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket 50-344
PORTLAND GENERAL ELECTRIC COMPANY, et al	)	(Control Building Proceeding)
	)	
(Trojan Nuclear Plant)	)	

CERTIFICATE OF SERVICE

I hereby certify that on July 5, 1979, Licensee's letter to the Director of Nuclear Reactor Regulation dated July 5, 1979 and an attachment entitled "Request for Additional Information, Trojan Nuclear Plant, Proposed Control Building Design", have been served upon the persons listed below by depositing copies thereof in the United States mail with proper postage affixed for first class mail.

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Ronald W. Johnson
Corporate Attorney
Portland General Electric Company

Dated: July 5, 1979

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Responses to NRC Questions Raised
During the June 13-14 Visit
to Trojan Nuclear Plant

Question 1

Describe in detail the construction of the new R-line wall.

Response 1

The general sequence and details of construction for the R-Line wall are described in Section 4 of PCE 1020. New construction of the R-line wall will extend from Column Line 41 to approximately 14 ft south of Column Line 46 and from El. 45 ft to 97 ft. 3 inches.

Temporary removal of the stairway to the viewing gallery, the access platform for the overhead crane, the dry standpipe, and other interfering facilities above El. 93 ft in the Turbine Building will provide the necessary access for chain-hoist rigging as described below. Platforms and stairs will be removed by hand-rigging and use of the Turbine Building crane.

Form work and reinforcing steel installation for the new R-line wall between Column Lines 41 and 46 will be of conventional construction with forms on both surfaces up to El. 59 ft 3 in. A steel ledger angle will be embedded in the concrete wall at El. 59 ft 3 in. to aid in setting steel Plate No. 1. At this elevation, conventional form work and reinforcing steel will continue to be used to form the east face of the R-line wall to the underside of the floor at El. 65 ft.

When holes are being drilled through the existing R-line wall, personnel will be stationed on the side of the wall opposite the drill to observe penetration of that side of the wall. Communications will be maintained between these personnel and the drillers. Depth limiting devices will be used with the drills to control the length of the penetration. The use of pilot holes, rebar finders and impact drills will reduce the possibility of cutting reinforcing steel in the existing block walls and the concrete core. However, reinforcing steel may be encountered during drilling which would require moving some holes and grouting the partially drilled hole. Such grouting will be performed prior to drilling the replacement hole. A template, which will be made after all holes in the wall for a given plate have been drilled, will serve as the drilling pattern for the associated plate.

Steel plates for the west face of the wall from El 59 ft 3 in. to 97 ft 3 in. will be delivered and unloaded at ground level, El. 45 ft. Steel plates to be installed consist of 8 sections and will be numbered 1 through 8 for identificatiuon (see drawing RSK-1). Steel Plates No. 1 through 6 will be hoisted and installed below all the cable tray. Steel Plates No. 7 and 8 will be hoisted through the opening below the Turbine Building crane and lowered over the cable trays from above the El. 93 ft floor.

When hoisting each steel Plate No. 1 through 6, slings from two of the chain hoists will be used to lift the load and come-alongs, cable pullers, or

similar tools will be used to drift the plates clear of the fire lines below El. 69 ft. When hoisting Plates No. 1 through 6, the third chain hoist will be attached to the plate at a point nominally above the center of gravity.

This chain hoist will not be loaded but will remain taut to receive the load should either of the two outboard chain hoists malfunction. Drawing RSK-1 shows details of the hoisting operations.

Steel Plate No. 1 will be hoisted from ground level and set in place at El. 59 ft 3 in. and extend upward to El. 64 ft. After the plate has been set and aligned, the following activities will be performed:

1. The through bolts will be installed, with a bond-breaker applied. The nuts will be tightened to hold the liquid concrete head, but the bolts will not tensioned.

2. Concrete will be placed behind steel Plate No. 1, which is used as a form.

Steel Plate No. 2 will then be hoisted from El. 45 ft, past Plate No. 1, and set in place from El. 64 ft to 70 ft. After Plate No. 2 has been set and aligned, the following activities will be performed:

1. Through bolts will be installed in the same manner as for Plate No. 1.

2. Steel Plates No. 1 and 2 will be welded together.

3. Concrete will be placed the same as for Plate No. 1.

Steel Plate No. 3 will then be installed using the through bolts, welding and placing concrete in the same manner as Plate No. 2 from El. 70 ft to El. 74 ft 3 in.

Steel Plate No. 4 will then be installed in the same manner as Plate No. 3 from El. 74 ft 3 in. to 79 ft 3 in. except that grout, rather than concrete, will be placed between the plate and the existing wall. Spacers will be used to maintain a nominal 1 in. clearance between Plate No. 4 and the existing R-line wall.

Plate No. 7 will be raised to the El. 93-ft floor by the Turbine Building crane. This plate will be drifted east to the R-Line wall, then be picked up by three chain hoists, and lowered into place. Following installation of Plate No. 7, Plates No. 5 and 6 will be installed on either side of Plate No. 7 and welded to it from El. 79 ft 3 in. to El. 85 ft 3 in. During installation of Plates No. 5, 6, and 7, spacers and grout dams will be placed at the north and south ends of the plates around cable tray openings. Grout will be placed behind these plates following welding.

Steel Plate No. 8 consists of two pieces that will either be assembled at ground level, El. 45 ft, in a vertical support frame or assembled offsite. 317

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The plate will weigh approximately 23 tons and will be lifted from El. 45 ft with the Turbine Building crane to an elevation adequate to clear the El. 93-ft floor. From this point, the plate will be moved east with the Turbine Building crane and the south end of the plate placed as far behind the diesel exhaust pipes as possible, as limited by the travel of the auxiliary hoist on the Turbine Building crane. Plate No. 8 will then be set on a Hillman roller runway and prior to release of the crane hoist, chain hoist No. 5 will be attached to the south end. Once the plate is supported by Chain Hoist No. 5 and the Hillman roller runway, it can be moved into position parallel to the R-line wall. Hoists 1, 2, and 4 will then be attached and Plate No. 8 will be lifted clear of the support frame and lowered into position using the four 16-ton chain hoists. This in itself will provide 2-to-1 redundancy. In addition, each chain hoist has a 5-to-1 safety factor as does the design of the complete hoisting assembly. The two outboard chain hoists will handle the load with the two inboard hoists following the load in a taut condition. As long as the inboard following hoists do not assume an inordinate portion of the load, the outboard hoists will share the load in accordance with their relation to the plate's center of gravity. This relationship is shown on Drawing RSK-1. The inboard hoists will be monitored to take only enough load to be kept taut by the use of load cells in the rigging.

Prior to hoisting, both the hoist of the Turbine Building crane and the chain hoists will be tested onsite or at another appropriate facility. Chain hoists will be Yale NH Hand Hoist or equal.

Question 2

Describe the methods which will be used to control dust during the modification work.

Response 2

As necessary, water spray will be used to limit the spread of dust. Vaneaxial or other type fans with flexible discharge ducts may also be used to direct dust away from the area as necessary. However, it is not expected that the amount of dust generated will cause problems with equipment in the vicinity of modification work. Any debris or dust on the penetration side of the wall can be contained by a light enclosure over the penetration.

Question 3

What will be the extent of vibration and noise associated with drilling of the wall?

Response 3

Vibrations and noise transmitted through the structure from the drilling operation on the R-line wall adjacent to the control room are expected to be detectable in the control room and may present a temporary nuisance.

Vibrations will be insignificant relative to levels that could adversely affect control room equipment, and transmitted noise should be well below levels which could disrupt normal voice communications within the control room. However, an appropriate testing program is being considered to verify the effects of the vibration and noise environment that could be associated with drilling operations adjacent to the control room.

Question 4

What provisions have been considered to provide access and egress along Column Line R in the area of modification work in case of a plant emergency?

Response 4

For any condition requiring immediate access to or egress from areas in which modification work is being performed, all work will be terminated and materials will be moved out of the way. The worst case of possible interference with access will be during movement of Plates 1 through 4 into a position parallel with Column Line R. It is possible that access will be restricted for a period on the order of 15 min while each plate is being rolled into a position parallel to Column Line R. Adequate alternate access is available through other doors in the Turbine and Control Buildings, and temporary obstruction of access in the area of modification work does not present any difficulty with access or egress requirements.

Question 5

How will cable trays in the cable spreading room be protected from accidental dropping of the large plate washers?

Response 5

Cable tray covers will be placed on trays in the vicinity of the work associated with hoisting plate washers. The tray covers to be used, as necessary, are those of standard design and construction and in common use.

Question 6

What precautions will be taken to prevent damage to Class 1 utilities beneath the El. 45-ft slab in the Turbine Building in the event of an accidental drop of a section of the steel plate during handling?

Response 6

The redundant hoists, along with large factors of safety in the hoisting assemblies, will preclude the accidental drop of a section of steel plate.

Question 7

How will the fire barrier be maintained between the Control Building and the Turbine Building?

Response 7

During drilling operations, a fire watch will be stationed at the work location. After the holes are drilled and prior to the installation of the plates, the holes will be sealed with approved fire protection material.