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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SEP 14 1979

Docket No. 50-344

Mr. Charles Goodwin, Jr.  
Assistant Vice President  
Portland General Electric Company  
121 S.W. Salmon Street  
Portland, Oregon 97204

Dear Mr. Goodwin:

In conducting our review of PGE-1020, "Report on Design Modifications for the Trojan Control Building," as supplemented and amended, we have determined that we will need the additional information identified in the enclosure to continue our review.

In order for us to maintain our review schedule, your response is requested as soon as possible. Three signed originals and forty copies are required.

Please contact us if you have any questions concerning this request.

Sincerely,

A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosure:  
Request for Additional  
Information

cc: w/enclosure  
See next page

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REQUEST FOR ADDITIONAL INFORMATION

TROJAN CONTROL BUILDING MODIFICATIONS

1. Provide a detailed description of how the equivalent diameter was determined which was used in computing the penetration of the dropped washer into the steel cover plate for cable trays.
2. Provide a drawing which illustrates the projected area used for computing the equivalent diameter.
3. Provide a listing of all areas containing safety-related cables or equipment in which wood framing will be used during the modification work.
4. For the cable trays ABA401, ABA010, and ABA380, which may be exposed to a drop of a plate washer in excess of 3 feet, you have stated that suitable guides or alternate protection will be provided. Describe the guides or alternate protection and show pictorially how the protection will work.
5. Your response regarding the use of grout for installation of rebar into the existing walls and rock does not adequately justify its acceptability in these applications. Therefore, provide the following:
  - a) Verification that inactive carbon, sand and cement are the only constituents of the grout and that contains no other materials.
  - b) Substantiation that the expansion of the grout in only the plastic stage is sufficient considering the effects of any shrinkage which may occur beyond that in the plastic stage. If there is any expansion beyond the plastic range, substantiate that it's effects are negligible with regard to splitting of the existing materials (block, concrete, etc.).
  - c) Test data which substantiate that the use of this grout (1) in holes of dimensions similar to those which will be used at Trojan, (2) in materials similar to those in which the rebar will be grouted (i.e., concrete grouted masonry block and rock), and (3) using the same type rebar as that to be used at Trojan that the full rebar strength will be developed in every case. In addition to the tests mentioned in the specification CRD-C588-78, the following tests should be performed: 1) tensile tests on the grout in accordance with ASTM Specification C190-77, and 2) strength tests on full-scale specimens representing the proposed anchorages in accordance with the spirit of ASTM Specification E488-76.

6. Provide the results of your analyses showing that plates 1 through 6 are sufficient to sustain without detrimental effects on plates 1-6, the structure, equipment, components, piping, or cable trays, the impact of plate 8 should a drop of plate 8 occur. Include (a) a detailed description all assumptions used in the analyses, and (b) detailed justification for all of the assumptions used in the analyses, all of the loads and all of the acceptance criteria relied upon. Include an identical discussion for plate 7.
7. Propose an inservice inspection program for the bolts to be used to provide for shear transfer between the new and existing structural elements. Provide and justify the bases on which it can be concluded that the proposed inspection program will provide assurance that the relied-upon bolt tensions will be maintained in all bolts throughout the life of the plant.
8. PGE-1020 indicates that the plates to be installed on the west wall of the Control Building will be used as forms for concrete to be poured. Other information has indicated that these plates will not be used for concrete forms. Verify that the plates to be installed on the west walls will be used as forms for concrete. If this is the case:
  - (1) specifically identify the plates that will be so used, and
  - (2) provide the details of your analysis which demonstrate that these plates will be seismically qualified throughout all work phases. Provide detailed justifications for all criteria and assumptions relied upon in your analyses.
9. Your September 5, 1979 response to structural question 24 is unacceptable. Since reliance is being placed on test data which considered only planar loads, and ultimate strengths are determined from this test data, it is necessary to assure that the out-of-plane earthquake component does not significantly reduce the strengths determined from the consideration of the test results. Therefore, in light of the above-referenced question resulting from your July 6, 1979 response to question 17, provide the details of your analyses to demonstrate that the effects of the out-of-plane earthquake component will not significantly affect the attainment of the assumed capacities. Provide detailed justifications for all assumptions and criteria relied upon.
10. Verify that the computer program WECAN was used only for linear elastic analyses. Additionally, verify that the computer program verifications for the CYLNOZ, SPHNOZ and DESREV meet the requirements of Standard Review Plan Section 3.9.1.II.