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ANPP-24173-BSK/RQT

REGION VISE

U. S. Nuclear Regulatory Commission  
Region V  
Creekside Oaks Office Park  
1450 Maria Lane - Suite 210  
Walnut Creek, CA 94596-5368

Attention: Mr. D. M. Sternberg, Chief  
Reactor Projects Branch 1

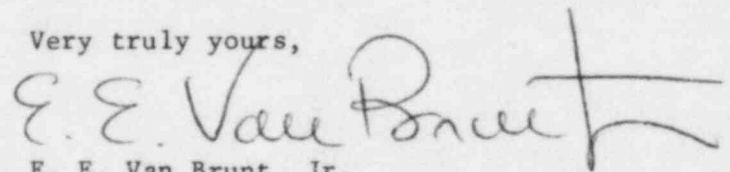
Subject: Final Report - DER 82-63  
A 50.55(e) Report Relating to Design Calculation  
Error In Refueling Water Tank Seismic Response  
File: 83-019-026; D.4.33.2

Reference: A) Telephone Conversation between A. D'Angelo and G. Duckworth  
on Oct. 26, 1982.  
B) ANPP-22375, dated Nov. 24, 1982 (Interim Report)  
C) ANPP-22844, dated Jan 27, 1983 (Time Extension)  
D) ANPP-23277, dated March 27, 1983 (Time Extension)  
E) ANPP-23469, dated April 12, 1983 (Time Extension)

Dear Sir:

Attached is our final written report of the deficiency referenced above,  
which has been determined to be Not Reportable under the requirements of  
10CFR50.55(e).

Very truly yours,



E. E. Van Brunt, Jr.  
APS Vice President,  
Nuclear Projects Management  
ANPP Project Director

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Enclosure

cc: Page 2

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U. S. Nuclear Regulatory Commission  
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Washington, D. C. 20555

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FINAL REPORT - DER 82-63  
DEFICIENCY EVALUATION 50.55(e)  
ARIZONA PUBLIC SERVICE (APS)  
PVNGS UNITS 1, 2, & 3

I. Description of Deficiency

This report was initiated as a result of the Torrey Pines Technology Independent Evaluation of PVNGS which requested that the design of the Condensate Storage Water Tank (CST) be reevaluated.

The Refueling Water Tank (RWT) is designed to resist stresses resulting from operating and extreme environmental/accident loads. During a Bechtel review of the RWT calculation package (Calculation 13-CC-CT-015), an error was found in the determination of the tank-wall bending moment at the junction of the basemat. The correction of this error in the calculation without a more detailed three-dimensional finite element analysis would result in calculated stresses in some of the inside-face vertical rebar of the tank-wall that exceed Design Criteria allowables. Since the analysis and design of the Condensate Water Storage Tank (CST) was based upon the analysis of the RWT (see Calculation 13-CC-CT-010, Revision 0), the CST is likewise affected.

II. Analysis of Safety Implications

This condition is evaluated as not reportable. Based upon independent detailed analysis of the RWT and the CST, the existing designs of both structures have been determined to be adequate for all load combination specified in the Project Design Criteria (see attached report). Therefore, a safety significant condition does not exist, hence the subject condition is not reportable under the requirements of 10CFR50.55(e).

III. Corrective Action

1. Bechtel Engineering has performed independent detailed analysis for the RWT (Calculation 13-CC-CT-015, Revision 4) and the CST (Calculation 13-CC-CT-010, Revision 1).

Details of this analysis are presented in the attached report "Engineering Evaluation for the Design of the Condensate Water Storage Tank and the Refueling Water Tank", dated May, 1983. Based upon the results of the detailed analysis, it has been determined that local yielding of some of the inside-face vertical rebar at the wall basemat junction occurs for the RWT and the CST under certain load conditions. The 1/4 inch stainless steel liner plate, attached to the inside surface of each tank, ensures the leak tight integrity of each structure. Under the extreme loading condition that might locally crack the concrete at the wall-basemat junction, the strain in the liner will remain well below allowable strain for stainless steel based upon ASME Section III Division 2 Code. Therefore, it has been demonstrated that this local yielding of the rebar in no way impairs the design function of the tanks or poses any threat to any other Category I structure or equipment.

2. Safety Analysis Report Change Notice 1100 is being issued to revise Section 3.8.4.1.8 (subtitled "Refueling Water Tank") of the FSAR. This revision clarifies the following for the RWT:
  - a) the concrete shell will retain the hydrostatic pressure without reliance upon the stainless steel liner; and
  - b) the welded stainless steel liner ensures the leak tight integrity of the structure.