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SUBJECT: Forwards fuel assembly guide tube wear program for review & approval. Application fee also remitted to NRC.

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Arizona Nuclear Power Project

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August 20, 1987
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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529 (License NPF-51)
Fuel Assembly Guide Tube Wear Program for PVNGS Unit 2
File: 87-C-056-026; 87-001-419.15

Reference: Letter from E. E. Van Brunt, Jr. (ANPP) to G. W. Knighton (NRC) dated August 12, 1985. Subject: Guide Tube Wear Surveillance, (ANPP-33200).

Dear Sirs:

Attached to this letter is the Fuel Assembly Guide Tube Wear Program for PVNGS Unit 2. This program is being submitted for your review and approval.

In accordance with the requirements of 10 CFR 170.12(e), an application fee of \$150.00 is being forwarded to the USNRC License Fee Management Coordinator.

By copy of this letter, we are also forwarding the proposed program to the appropriate state agency.

If you have any questions, please contact Mr. W. F. Quinn of my staff.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/SGB/lis
Attachment

cc: O. M. De Michele
E. E. Van Brunt, Jr.
G. W. Knighton w/a
E. A. Licitra "
M. Davis "
G. Fiorelli "
A. C. Gehr "
C. E. Tedford "
R. M. Diggs (with WFD \$150)

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PVNGS Unit 2

Fuel Assembly Guide Tube

Wear Program

(GTWP)

Introduction:

Fuel assembly guide tube wear was identified as a concern in the Safety Evaluation Report of the Combustion Engineering Standard Safety Analysis Report - System 80 (NUREG-0852), and in the Safety Evaluation Report and Supplemental Safety Evaluation Reports (SSER) for PVNGS (NUREG-0857).

PVNGS has committed to perform a GTWP during the Unit 1 first End of Cycle (EOC) outage. In addition, SSER 5, Section 4.2.5, requested that this same program be implemented during the Unit 2 first EOC outage. This request was based upon "the NRC staff's practice to require supplemental surveillances related to significant design changes in the first two plants incorporating such new features".

By a letter dated August 12, 1985, from E. E. Van Brunt, Jr. (ANPP), to G. W. Knighton (NRC), PVNGS has committed to perform a GTWP during the Unit 2 first EOC outage. It was stated within this letter that the scope of the Unit 2 GTWP would be defined upon completion of the Unit 1 wear program and subsequent data analyses.

DESCRIPTION OF TEST PROGRAM:

Measurements of guide tube wear will be performed on fuel assemblies, four guide tubes per assembly, by an experienced nuclear vendor [e.g. Combustion Engineering, Inc. or Advanced Nuclear Fuels Corp. (formerly Exxon Nuclear)]. The number of assemblies to be tested will be dependent upon the PVNGS Unit 1 first EOC guide tube wear data analysis.

Quantitative measurements of guide tube wear will be performed in the spent fuel pool using nondestructive eddy-current testing techniques developed specifically for this purpose.

The nondestructive eddy-current test is performed by inserting a bobbin several feet into the top of each guide tube and then withdrawing the coil at a constant speed. Data is collected as the coil is withdrawn. Volumetric variations in wall thickness are detected by comparison with data obtained from characterized standards. The vendor's database of guide tube wear measurement results from PVNGS Unit 1 and other plants, will also be used for comparison and interpretation of test results.

The eddy-current testing will be performed in the spent fuel pool, rather than in the reactor vessel prior to movement to the spent fuel pool. Performing the test in the spent fuel pool during the fuel shuffle will reduce the Unit 2 EOC outage duration.

SAMPLE SIZE:

Sample size will be based upon the Unit 1 first EOC guide tube wear test results.

SELECTION OF ASSEMBLIES TO BE TESTED:

Selection of assemblies will thoroughly sample the various Control Element Assembly (CEA) finger configurations while concentrating on locations with the highest probability of wear. The assemblies to be tested will include those that have resided under 12 finger and 4 finger CEA's during Cycle 1. Selection will also be dependent upon Unit 1 guide tube wear test results.

QUALITY ASSURANCE:

The vendor's QA program for field testing services will be utilized.

REPORT OF RESULTS:

A report of test results will be prepared following completion of the examination program. The report will determine if guide tube wear is within acceptable bounds, and will address whether future testing is required.

