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DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Clarifies 810501 response to NRC 810310 ltr to all pending OL applicants of Westinghouse & C-E NSSS. Info provided for safety evaluation preparation on auxiliary feedwater sys.

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ARIZONA PUBLIC SERVICE COMPANY
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May 27, 1981
ANPP-18076 - JMA/TFQ

Mr. Harold R. Denton
Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D. C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2 and 3
Docket Nos. STN-50-528/529/530
File: 81-056-026

References: (A) Letter from D. F. Ross NRC, to all pending OL applicants of NSSS designed by Westinghouse and Combustion Engineering, dated March 10, 1981.
(B) ANPP-17884-JMA/TFQ, Dated May 1, 1981.

Dear Mr. Denton:

Attached is clarification to our response, reference (B) to your letter, reference (A).

Item #1

Recommendation 5.2.6 (GS-6). The response did not address the second operator independently verifying valve alignment. The NRC requires this second operator verification and his sign-off on the procedure.

Item #2

Recommendation 5.2.6 (GS-6). During the AFW independent design review meeting, Mr. Wermiel expanded the definition of "extended cold shutdown." AFW Transcript, p. 213, states that prior to plant startup following a refueling shutdown or any cold shutdown 30 days or longer, a flow test will be performed to verify the normal flow path from the primary AFW system water source to the steam generators.

Response to #1 and #2

When an AFW system flow train has been out of service to perform testing or maintenance, the flow path availability will be confirmed by:

1. Implementing procedures that require an operator to determine that the AFW system valves are properly aligned and a second operator to independently verify and sign off on the procedure that the valves are properly aligned.

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2. PVNGS will adopt Technical Specifications to assure that, prior to plant start-up following a refueling shutdown or any cold shutdown 30 days or longer, a flow test will be performed to verify the normal flow path from the primary AFW system water source to the steam generators.

Item #3

Recommendation 5.3.2 requested a 72 hour endurance test for the AFW system pumps. This requirement was changed to a 48 hour endurance test. Refer to NUREG-0635, p. 3-10 footnote. Also see AFW Transcript, p. 211.

Response

PVNGS will perform as part of the start-up test requirements a 48 hour endurance test on the AFW system pumps. Following the 48 hour pump run, the pumps will be shutdown and cooled down and then restarted and run for one hour.. Test acceptance criteria will include demonstrating that the pumps remain within design limits with respect to bearing/bearing oil temperatures and vibration and for the two (2) essential AFW system pumps that the pump room abient conditions do not exceed environmental qualification limits for safety-related equipment in the room.

Item #4

Recommendation 5.3.4. provide further clarification of the procedures involved in periodic AFW testing. The concern is that when an essential AFW train is in testing mode, there is only one AFW train which will automatically start on receipt of an AFAS. The reactor operator needs to be fully aware that if the one remaining essential AFW pump fails to start, he will need to take manual action. Please provide clarification of the operator's action for this situation.

Item #5

The NRC also requires the Auxiliary Feedwater System Technical Specification to be modified to incorporate the third AFW train.

Response to #4 and #5

PVNGS will require local manual realignment of valves to conduct periodic test on one AFW system train and will have one remaining essential AFW train available for operation. In addition, the Start-Up AFW Pump, which is provided with an emergency power source, will be available to supply auxiliary feedwater to the steam generators from the Condensate Storage Tank. The flow path used by the Start-Up AFW Pump is separate from the Essential AFW Pump flow paths.

The reactor operator will be informed of the periodic test being performed on the AFW system train prior to the test, through a status list for equipment which is required to be tested by the standard technical specifications. Through normal training and caution statements in the periodic testing procedure, the reactor operator will be aware that manual action is required should an AFAS be actuated during a periodic test of an AFW train.

The Auxiliary Feedwater System Technical Specification will be modified to incorporate the third AFW train.

Item #6

Verify that the Feedwater Control Valves can be operated with a loss of normal AC power.

Response

The Feedwater Control Valves are equipped with a back-up power source, batteries with a converter, so that they may be operated in case of a loss of normal AC power.

Item #7

Will the suction valves on the start-up AFW pump be left open or closed after normal use, start-up, hot standby and shutdown?

Response

The suction valves will be closed to isolate the Condensate Storage Tank.

Item #8

Will the two suction valves to the start-up AFW pump be powered from separate busses so that a single failure will not violate the seismic integrity of the Condensate Storage Tank (CST)?

Response

The two valves are powered from different motor control centers so that with a failure of one motor control center the CST can still be isolated.

This information is provided to assist in your understanding of our design and operation of the Auxiliary Feedwater System, so that you may be able to prepare on SER on the AFW System.

Very truly yours,

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

EEVBJR/TFQ/sh

cc: J. Kerrigan
J. Wermiel

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President Nuclear Projects of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority so to do, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt

Edwin E. Van Brunt, Jr.

Sworn to before me this 27 day of MAY, 1981.

John M. Allen

Notary Public

My Commission expires:
My Commission Expires Jan. 23, 1983