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AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Public Service Co.
RECIP.NAME RECIPIENT AFFILIATION
KNIGHTON,G. Licensing Branch 3

SUBJECT: Submits supplemental response to 830728 ltr re independent source range neutron flux monitor at remote shutdown panel. Design features & procedural guidance in existing design satisfy 10CFR50,App A,Criterion 3 based on listed features.

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ANPP 28863 WLH/TFQ
February 14, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. George Knighton, Chief
Licensing Branch No. 3
Division of Licensing
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: 84-056-026; G.1.01.10

Reference: (A) Letter from G.W. Knighton, NRC, to E.E. Van Brunt, Jr. APS dated July 28, 1983.
(B) Letter from E.E. Van Brunt, Jr. APS, to G.W. Knighton, NRC dated November 23, 1983.

Dear Mr. Knighton:

The NRC, per Reference (A), reiterated its position with regard to the need for an independent source range neutron flux monitor at the PVNGS Remote Shutdown Panel (RSP). APS had provided a response, Reference (B). Further review has indicated a need to modify that response. This letter is also a response to Reference (A), which is to supersede our previous response.

Reference (A) states that the PVNGS design does not meet the NRC staff's position with regard to 10CFR50, Appendix R, Item II.L.2, which is to include the direct capability for monitoring source range neutron flux from the RSP. The NRC staff concern is the potential loss of reactivity control function from RSP due to potential boron dilution events caused by fire induced spurious operation of components.

APS believes that the NRC position is not justified for PVNGS because:

1. Other than Section III.G, III.J, and III.O, 10CFR50, Appendix R is not applicable to plants other than those "...licensed nuclear power electric generating stations that were operating prior to January 1, 1979..."

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2. PVNGS has committed to meet Appendix R, Sections III.G, III.J, and III.O. Compliance with Section III.L.2 is not applicable.

   [APS did advise the NRC (in the Fire Protection Independent Design Review, held February 25, 1981, and subsequently in the Fire Protection Evaluation Report, Amendment 3) that "PVNGS alternative shutdown capability provides the functions" that APS considers as meeting Appendix R, Section III.L. These evaluations contemplated that the features described in 3.B, C, and D below were adequate to meet the NRC position.]

3. There are sufficient design features and procedural guidance in the existing design for PVNGS to comply with the requirements of Criterion 3 of Appendix A of 10CFR50, which is the applicable licensing standard. Specifically the PVNGS design incorporates the following features:

   A. Only in the event of control room evacuation is alternate shutdown capability from the remote shutdown panel required.

   B. When evacuation of the control room becomes necessary, the control room operator manually trips the reactor, verifies power is decreasing and all rods are inserted.

   C. By procedure and by the proposed PVNGS Technical Specifications, the operator is required to maintain a shutdown margin of 6% $\Delta K/K$, in modes 3 and 4, hot standby and hot shutdown respectively, and 4% $\Delta K/K$ in mode 5, cold shutdown. Upon control room evacuation these margins will be verified by sampling of the reactor coolant system to monitor boron concentration, at least once per hour.

   D. The Reactor Makeup Water Tank is the only source of unborated water, which could lead to a boron dilution event. This tank is isolated from the charging pumps prior to the cooldown of the RCS. This assures RCS makeup will be from the Refueling Water Tank (RWT). The RWT, which has a Technical Specification requirement of 4000 to 4400 ppm boron concentration, provides water to the charging pumps via a gravity feed path or, alternatively, via the boric acid makeup pumps (if non-IE electrical power is available).

Based upon the preceding discussion, APS believes that the current design is adequate and that a backfit of a source range monitor at the remote shutdown panel is not required to assure reactivity control is maintained while shutting down the plant at that station.

If you do not accept the APS position as stated above, please arrange for appeal meeting at your earliest convenience.

Very truly yours,

E. E. Van Brunt

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

EEVB/TFQ:pt

cc: E.A. Licitra
G. Wermiel
A.C. Gehr