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AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Public Service Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards comments of util review board re open items from Class IE dc power sys review. Six items identified which require addl clarification.

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ARIZONA PUBLIC SERVICE COMPANY
P. O. BOX 21666 · PHOENIX, ARIZONA 85036

September 4, 1980
ANPP-16286 - JMA/JPS

Dr. H. R. Denton, Director
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: 80-001-419.06

Reference: Letter dated June 30, 1980 from E. E. Van Brunt, Jr.
to Dr. H. R. Denton

Dear Dr. Denton:

The responses of Bechtel Power Corporation and Arizona Public Service Company to the open items of the Class IE DC Power System Review have been reviewed by the PVNGS Power Systems Review Board. The Board was to assure the responses to these open items adequately addressed the initial concerns raised in the DC System Review of May 8, 1980.

As a result of their review, the Review Board has identified six open items which require additional clarification. The comments of the Review Board on these items are attached for your information.

These comments will be resolved to the satisfaction of the Review Board by Bechtel. Final resolution of these items by the Review Board will be submitted to you when completed.

Respectfully submitted,

ARIZONA PUBLIC SERVICE COMPANY

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

On its own behalf and as agent for all other joint applicants.

EEVBJr/JPS/av
Attachment
cc: J. Kerrigan
F. Rosa

STATE OF ARIZONA)
) ss.
County of Maricopa)

John M Allen

Subscribed and sworn to before me this 4 day of September, 1980.

My Commission Expires Jan. 23, 1983

My Commission expires:

8009090523

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COMMENTS OF THE PVNGS
POWER SYSTEMS REVIEW BOARD ON
RESPONSES TO OPEN ITEMS FROM THE
CLASS IE DC POWER SYSTEM REVIEW

Action #4

Bechtel has misinterpreted the original question. Please respond to the question as expanded upon below.

The necessity of thermal or magnetic trips on the battery to bus disconnect device should be determined. Since the battery must be most reliable and the chance of a fault occurring on the main DC bus is considered very remote, the necessity of tripping devices on this breaker is questioned when reliability and security of control is of extreme importance.

Consideration should be given to the use of a permanently connected, mechanically interlocked disconnect device at each DC main switchgear. As the switchgear terminals, for termination of the power cables to the testing load bank, are not readily accessible, it is suggested that a permanent connection between this section of cables and the switchgear be considered. In this arrangement, the other end of these power cables would be brought out to another location, suitably located for performing the testing operations, and be terminated in a junction

box. This junction box would serve as the connection point for the loadbank and thus provide a means for battery testing without disturbing the permanent battery connections.

Action #5

Bechtel stated that Power Conversion Products (PCP) has had no experience with failed battery chargers of the current design. What mechanism does PCP have to obtain feedback from previous customers?

Action #6

Bechtel has examined the DC Power Systems' capability to withstand multiple failures. Please expand the response to this item to incorporate the results of a recent Class IE DC System Reliability Analysis.

Action #7

Bechtel has examined the potential for adverse interaction between acid spills in the battery room and the floor coatings. The response states the floors and embeds are coated with an epoxy paint which resists acid attack.

Please quantify this response to indicate to what degree it is resistant, i.e., what does the specification state. Also, the battery support frames and attachments to the embeds should also be analyzed.

Action #8

Bechtel has investigated how the battery rooms are protected from flooding by fire protection water sprays in the lower cable spreading room and discussed how water is prevented from entering the battery rooms because of external drains.

Please discuss the possibility of flooding from any indirect routes (i.e., pipe chases) and also discuss how battery room flooding is prevented should the external drains become plugged.

Action #13

In the response to this item, Bechtel indicated that an undervoltage relay alarm occurs when the bus voltage drops approximately 5 volts below the float voltage level.

Please verify that this small allowance in voltage drop will not result in excessive nuisance alarms and whether an increase in allowable voltage fluctuation is warranted.