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SUBJECT: Forwards supplemental info in support of 941009 proposed
 amend to TS 3/4.8.2, "DC Sources - Operating," submitted
 under emergency circumstances.

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Arizona Public Service Company
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JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

102-03147-JML/AKK/RJR
October 12, 1994

U.S. Nuclear Regulatory Commission
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Dear Sirs:

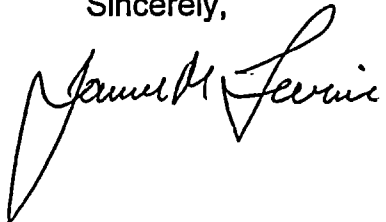
Reference: Letter No. 102-03144, dated October 9, 1994, "Proposed Technical Specification Amendment to Specification 3/4.8.2, D.C. Sources, Under Emergency Circumstances"

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
Supplemental Information in Support of Proposed
Technical Specification Amendment to Specification 3/4.8.2,
D.C. Sources, Under Emergency Circumstances
File: 94-056-026; 94-005-419.05

Based upon a meeting held with NRC Staff on October 12, 1994, Arizona Public Service Company (APS) is providing the enclosed supplemental information in support of the proposed amendment to Technical Specification 3/4.8.2, D.C. Sources - Operating.

Should you have any questions, please contact Scott A. Bauer of my staff at (602) 393-5978.

Sincerely,



JML/AKK/RJR/rv
Enclosure

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ENCLOSURE

**SUPPLEMENTAL INFORMATION IN SUPPORT OF
PROPOSED AMENDMENT TO TECHNICAL SPECIFICATION
SECTION 3/4.8.2, D.C. SOURCES
UNDER EMERGENCY CIRCUMSTANCES**

ENCLOSURE

On October 12, 1994, a meeting was held with the NRC to discuss APS' proposed amendment to Technical Specification 3/4.8.2, D.C. Sources. In the meeting, and in telephone calls subsequent to the meeting, APS presented additional/revised compensatory measures to be implemented between now and the fifth refueling outage for Unit 2 in view of the degradation observed in the four battery banks. These additional/revised compensatory measures are described below.

APS is replacing a combined total of 23 cells in the bank A and C batteries. The replaced cells will be used to form four control groups of 4 cells each. Testing of these four groups will be performed at approximately 30 day intervals as follows:

Time From Present and Type of Test

<u>Control Group #</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
1	S	N/A	N/A	N/A
2	N/A	S	N/A	N/A
3	N/A	N/A	S	N/A
4	N/A	N/A	N/A	S

Legend: S = Battery Service Test (performed to the bank A battery load profile)

This testing is being performed to provide assurance that the degradation mechanism is primarily related to discharge/recharge cycling of the batteries and to demonstrate that the batteries in the unit are capable of meeting the design duty cycle. After each test, an evaluation of the performance of each group will be performed using the following acceptance criteria:

1. The control group results meet the bank A battery design duty cycle; and
2. No individual cell reversal occurs (<1.0 volts).

The results of the tests will be used to verify the degradation model and will be provided to the NRC.

If the above criteria are not met, the unit will enter the action statement for Specification 3.8.2.1 and will take appropriate actions.

PVNGS will also initiate the following additional compensatory actions for Unit 2:

1. Maintenance limitations for important equipment:

PVNGS will use PRA to review all 125 VDC system and related auxiliaries corrective/preventative maintenance work. The need to perform long-term maintenance and achieve long-term availability of important-to-safety equipment will be balanced.

2. Controls for electrical supply integrity:

PVNGS will issue a night order to the Unit 1 Control Room stating that Unit 2 offsite power supplies and associated 13.8 kV buses should not be interrupted.

Access to the switchyard will be limited. All emergent switchyard work will be reviewed by the Unit 1 Shift Supervisor.

Manual operation of the Auxiliary Feedwater Pump Turbine and Atmospheric Dump Valves will be reviewed with the Unit 2 operators.

3. Increase the following battery testing to every other week for all cells. Testing will be staggered between trains.

<u>Parameter</u>	<u>Limits/Allowable</u>	<u>Actions to be Taken if Outside Limits</u>
Float Voltage	≥ 2.18 Volts	Battery Inoperable
Float Current	≤ 500 ma	Battery Inoperable
Specific Gravity	≥ 1.280	Restore within limits within 7 days
	Avg of all connected cells > 1.290	Restore within limits within 7 days
	Not more than 0.020 below average of all connected cells	Battery Inoperable
	Avg of all connected cells ≥ 1.280	Battery Inoperable

Margin Calculation

As discussed in the October 12, 1994, meeting the electrical load calculation for bank B battery will be completed by October 14, 1994. This action will ensure the bank A load profile is the worst-case profile.

Root Cause Analysis

Disassembly and inspection of the remaining 2 cells at the C&D Facility will be performed. Any significant findings from the root cause analysis, surveillance testing or any other source that invalidate APS' conclusion(s) will be promptly communicated with the NRC. Final results of the root cause analysis will be provided to the NRC.

Additional Data

As requested in the meeting and subsequent conversations, attached is the battery bank 2A design duty cycle load profile, the results of capacity discharge tests for 5 cells from battery bank 2A, and a list of the Unit 2 battery bank required capacities.

Battery A Load Profile

Step Duration	Load	Corrected Load	Amp-Hr	Cumulative Amp-Hr
1	515	561.35	9.36	9.36
24	184	200.56	80.22	89.58
1	298	324.82	5.41	94.99
14	184	200.56	46.80	141.79
1	298	324.82	5.41	147.20
14	184	200.56	46.80	194.00
1	298	324.82	5.41	199.42
17	184	200.56	56.83	256.24
1	298	324.82	5.41	261.65
12	184	200.56	40.11	301.77
1	298	324.82	5.41	307.18
18	184	200.56	60.17	367.35
1	298	324.82	5.41	372.76
11	184	200.56	36.77	409.53
1	298	324.82	5.41	414.94
1	184	200.56	3.34	418.29
1	240	261.60	4.36	422.65

SOURCE: Document 02-EC-AK-207

CAPACITY TEST FOR CELLS REMOVED FROM BATTERY 2A

Cell Number	Battery 2A Cells		Δ From Projected
	Projected	10/10/94 Actual	
5	62.3%	50.0%	-12.3%
33	40.2%	56.7%	+16.5%
34	57.1%	61.7%	+4.6%
35	46.7%	51.7%	+5.0%
51	58.1%	57.3%	-0.8%
AVERAGE	52.9%	55.5%	+2.6%

**AMOUNT OF MANUFACTURER'S
RATING REQUIRED TO MEET THE
SAFETY-RELATED FUNCTIONS OF THE
UNIT 2 BATTERY BANKS**

<u>BANK</u>	<u>% OF MANUFACTURER'S RATING</u>
2A	55.2
2B	49.4*
2C	33.6
2D	30.1

*** Preliminary value. Final value to be issued on 10/14/94, however
"A" bank is the worst case profile.**

