10 CFR 50.73

APS

A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear Generating Station

Cliff Eubanks
Vice President
Nuclear Operations

Tel (623) 393-6116
Fax (623) 393-6077

Mail Station 7602
PO Box 52034
Phoenix, Arizona 85072-2034

102-05502-CE/SAB/JAP/REB
May 26, 2006

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
License No. NPF 74
Licensee Event Report 2006-003-00

Attached please find Licensee Event Report (LER) 50-530/2006-003-00 prepared and submitted pursuant to 10 CFR 50.73. The LER reports an actuation of the B train emergency diesel generator due to a loss of power to one class bus (B train 4.16 KV) caused by human error during testing.

In accordance with 10 CFR 50.73(d), copies of this LER are being forwarded to the NRC Regional Office, NRC Region IV and the Senior Resident Inspector. If you have questions regarding this submittal, please contact James A. Proctor, Section Leader, Regulatory Affairs, at (623) 393-5730.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

CE/SAB/JAP/REB/gt

Attachment

cc: B. S. Mallett NRC Region IV Regional Administrator
M. B. Fields NRC NRR Project Manager - (send electronic and paper)
G. G. Warnick NRC Senior Resident Inspector for PVNGS

IE22

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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4. TITLE

Loss of Power to One Class Bus During Testing Due to Human Error

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									None	05000
04	02	2006	2006	- 003 -	00	05	26	2006	FACILITY NAME: None	DOCKET NUMBER: 05000

9. OPERATING MODE

5

10. POWER LEVEL

000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☒ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
James A. Proctor, Section Leader, Regulatory Affairs - Compliance	623 393 5730

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On April 2, 2006, Unit 3 was in Mode 5, Cold Shutdown, when a loss of electrical power to the B train class 4.16 KV bus occurred. At the time of the event engineering and maintenance personnel were performing integrated safeguards testing when the B train emergency diesel generator (EDG) tripped causing a loss of power to the class bus. Equipment operated as expected, the EDG was reset and automatically actuated to reenergize the bus. Testing was then successfully completed.

The event is under investigation. Initial investigation results have identified that human error was the cause of the event. Corrective actions taken included verification of no damage to the EDG or the class bus. Action to preclude recurrence included implementation of a formal prejob briefing for engineering personnel and peer checking by engineering during the testing.

There has been no similar event reported to the NRC by Arizona Public Service in the last three years.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

All times in this report are approximate and Mountain Standard Time (MST) unless otherwise noted.

1. REPORTING REQUIREMENT(S):

This LER (50-530/2006-003-00) is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A), to report an actuation of the B train emergency diesel generator in response to a valid loss of power event to one class bus (3EPBBS04).

2. DESCRIPTION OF STRUCTURE(S), SYSTEM(S) AND COMPONENT(S):

Class 1E AC System

Safety-related equipment is divided into two load groups. Either one of the associated load groups is capable of providing power for safely shutting down the unit. Each ac load group consists of one 4.16 kV bus (EIIS: EB), three 480V load centers (EIIS: ED), four 480V motor control centers (MCCs)(EIIS: ED), and two non-Class 1E MCCs (EIIS: ED). The preferred power source for each load group is off-site ac power (EIIS: EK).

Standby Power Supply [EIIS Code: EK]

The standby power supply for each safety-related load group consists of one emergency diesel generator (EDG)(EIIS: EK), complete with its accessories and fuel storage and transfer systems. The standby power supply functions as a source of alternating current (ac) power for safe plant shutdown in the event of loss of preferred power and for post-accident operation of engineered safety feature (ESF) loads.

3. INITIAL PLANT CONDITIONS:

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

Unit 3 was in Mode 5, Cold Shutdown, for a refueling outage at the time of the event. Shutdown Cooling (SDC)(EIIS: BP) train A was in-service with an inlet temperature of approximately 135 F and outlet temperature of approximately 110 F. Off site power (preferred) was providing power to the A train components. Engineering and maintenance personnel were performing integrated safeguards (ISG) testing on the B train at the time of the event with the B train EDG providing power to the B train components.

4. EVENT DESCRIPTION:

On April 2, 2006 at approximately 20:54 Mountain Standard Time, Unit 3 experienced a valid Loss of Power (LOP) actuation on the Train "B" 4.16 kV safety bus. The event occurred during performance of surveillance test 73ST-9DG02 (Class 1E Diesel Generator and Integrated Safeguards Test Train B). EDG "B" had been started in Emergency Mode per the surveillance test by opening the normal supply breaker to the associated B train 4.16 kV bus and initiating simulated Safety Injection Actuation System (SIAS) and Containment Isolation Actuation System (CIAS) signals. A subsequent portion of the surveillance test was in progress which demonstrates that the EDG "test mode" trips are bypassed with the EDG operating in Emergency Mode. The step being performed was intended to simulate an overcurrent (test mode) trip by installing a jumper at the overcurrent relay. However, the jumper was inadvertently installed at the differential current relay, which generated an "Emergency Mode" trip of EDG "B". This resulted in the deenergization of the 4.16 KV bus. The operations staff (utility-licensed) entered Abnormal Operating Procedure (AOP) 40AO-9ZZ12 (Degraded Electrical) and reset EDG "B". Upon reset at 21:26, EDG "B" automatically started in response to a valid Loss of Power (LOP) signal from the deenergized 4.16 KV bus. The EDG "B" output breaker automatically closed to restore power to the Train "B" 4.16 KV and equipment was automatically sequenced onto the 4.16 kV bus. Due to the loss of power on the Train "B" 4.16 KV bus, the Train "B" Control Room Essential Filtration

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System (CREFS) and Control Room Emergency Air Temperature Control System (CREATCS) were rendered inoperable and LCOs 3.7.11 Condition 'A' and 3.7.12 Condition 'A' were entered. Operability of Train "B" CREFS and CREATCS was restored when the Train "B" 4.16 KV bus was reenergized and these LCO Conditions were exited.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

There was no safety consequence related to this event. Offsite power remained available to the Train "A" 4.16 KV bus and EDG "A" remained operable throughout the event. SDC was unaffected since it was powered by the Train "A" safety train, which was supplied by offsite power. The Required Action and Completion Time for LCOs 3.7.11 and 3.7.12 require restoration of the inoperable train within 7 days and 30 days, respectively. Power to the B train 4.16 KV bus and the LCOs were exited within approximately 30 minutes.

No other ESF actuations occurred and none were required. There were no structures, systems, or components that were inoperable at the time of discovery that contributed to this condition. The event did not result in the release of radioactivity to the environment and did not adversely affect the safe operation of the plant or health and safety of the public.

The condition did not prevent the fulfillment of any safety function and did not result in a safety system functional failure as defined by 10CFR50.73(a)(2)(v). Note that safety functions are: reactor shutdown, heat removal, control of the release of radioactive material, and mitigation of the consequences of an accident.

6. CAUSE OF THE EVENT:

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The investigation of the event has not been completed however, preliminary results indicate that human error on the part of engineering (utility non-licensed) and maintenance (utility non-licensed) personnel caused the event. The maintenance personnel were not properly briefed by the test engineer of their role during the evolution; the electricians did not see the procedural steps to be performed but were taking verbal direction from the engineer; there was inadequate communication from the engineer to the maintenance personnel as to which relay was to be jumpered during the ISG testing. A contributing cause of the event was the use of only one engineer to conduct the test. Previous performances of the test procedure required two engineers.

The engineer involved in the event indicated that there was some self-imposed time pressure to complete the testing. In addition, the relays involved in this event are located in the EDG control cabinet with limited space for personnel and the EDG B control room was noisy because the EDG was running and EDG alarm panel horn was actuated making communication difficult.

A supplement to this LER will be submitted if the completed investigation identifies information that significantly changes the course or consequences of the event presented in this LER.

7. CORRECTIVE ACTIONS:

Operations personnel (utility-licensed) entered the Degraded Electrical AOP. The EDG was reset and automatically energized the bus.

Specific guidance was added to the ISG Test Log to require an engineering peer check of direction provided by the Lead Test Engineer to others. In addition, a formal prejob briefing, specifically for the engineering staff, that addresses the scope of testing, roles

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and responsibilities of personnel involved, critical parameters, standards, and lessons learned for performing the integrated safeguards test was implemented.

If the completed investigation results in substantial changes to the corrective actions a supplement to this LER will be submitted.

8. PREVIOUS SIMILAR EVENTS:

There has been no similar event reported by Arizona Public Service to the NRC within the last three years in which personnel operated an incorrect component resulting in a reportable event.