



Palo Verde Nuclear
Generating Station

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192-01132-DMS/SAB/DJS
January 16, 2004

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS) Unit 2
Docket No. STN 50-529
License No. NPF-51
Licensee Event Report 2003-002-00**

Attached please find Licensee Event Report (LER) 50-529/2003-002-00 that has been prepared and submitted pursuant to 10CFR 50.73. This LER reports the Engineered Safety Feature Actuation of the "A" train Diesel Generator due to a valid Loss of Power (LOP) on the bus on November 21, 2003.

In accordance with 10 CFR 50.4, a copy of this LER is being forwarded to the NRC Regional Office, NRC Region IV and the Resident Inspector. If you have questions regarding this submittal, please contact Daniel G. Marks, Section Leader, Regulatory Affairs, at (623) 393-6492.

Arizona Public Service Company makes no commitments in this letter. The corrective actions described in this LER are not necessary to maintain compliance with regulations.

Sincerely,

DMS/SAB/DJS/kg

A member of the **STARS** (Strategic Teaming and Resource Sharing) Alliance

Callaway • Comanche Peak • Diablo Canyon • Palo Verde • South Texas Project • Wolf Creek

TEZZ

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Attachment

cc: B. S. Mallett NRC Region IV Regional Administrator
M. B. Fields NRC NRR Project Manager + (send electronic and paper)
N. L. Salgado NRC Senior Resident Inspector for PVNGS

Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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)

1. FACILITY NAME Palo Verde Nuclear Generating Station Unit 2	2. DOCKET NUMBER 05000529	3. PAGE 1 OF 5
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4. TITLE
ESF Actuation - Unit 2 Emergency Diesel Generator Actuation

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
11	21	2003	2003	002	00	01	16	2004	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	N/A	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)								
10. POWER LEVEL	N/A	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)					
		20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)					
		20.2203(a)(1)	50.36(c)(1)(i)(A)	xx	50.73(a)(2)(iv)(A)	73.71(a)(4)				
		20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)	73.71(a)(5)				
		20.2203(a)(2)(ii)	50.36(c)(2)		50.73(a)(2)(v)(B)					
		20.2203(a)(2)(iii)	50.46(a)(3)(ii)		50.73(a)(2)(v)(C)					
		20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
		20.2203(a)(2)(v)	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)					
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)							
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)							

12. LICENSEE CONTACT FOR THIS LER

NAME Daniel G. Marks, Section Leader, Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) 623-393-6492
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE			MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO							

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

On November 21, 2003, at approximately 22:53 Mountain Standard Time, Palo Verde Nuclear Generating Station Unit 2 experienced a valid Engineered Safety Feature (ESF) actuation of the "A" Emergency Diesel Generator (EDG). Unit 2 had been performing testing of the Gas Turbine Generator #1 (alternate AC Power source for station blackout) in isochronous mode. This testing required GTG #1 to be run in parallel with EDG "A." Upon completion of the paralleled operation, the Train "A" 4.16 kV bus had been successfully transferred to the EDG and loads carried by the EDG for approximately 5 minutes. When the EDG speed control was taken from "droop" mode (load sharing) to "isochronous" mode (fixed frequency,) the EDG output breaker tripped opened, resulting in a valid Loss of Power (LOP) signal based on undervoltage on the Train "A" bus. EDG "A" shifted from the "test run" mode to the "emergency" mode and the output breaker re-closed, re-supplying the train "A" 4.16 KV bus.

Offsite power was available to both safety buses throughout the event. The other (Train "B") safety bus was being supplied by offsite power and its EDG was operable. The offsite electrical grid was stable. Palo Verde Unit 2 was defueled in its 11th refueling outage. 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.

In the past three years, Palo Verde Nuclear Generating Station has not experienced a valid EDG actuation.

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

1. REPORTING REQUIREMENT(S):

APS is reporting this condition pursuant to 10 CFR 50.73 (a) (2) (iv) (A) due to the automatic actuation of the emergency ac electrical power systems, emergency diesel generators (EDGs) (EII Code: EB).

Pursuant to 10 CFR 50.72 (b) (3) (iv) (A), a notification was made to the Headquarters Operations Officer on November 22, 2003 (reference ENS # 40349).

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

The diesel generator system (EDGs) (EII Code: EB) is a class 1E standby generation system that functions as a standby source of AC power for safe plant shutdown in the event of loss of preferred power. This system includes all necessary auxiliaries to maintain the diesel engine in a readiness condition. Each diesel generator is an independent unit capable of providing power to safety equipment in the event of the loss of the preferred (off-site) power (LOP) to safely shutdown the plant or mitigate the consequences of a loss of coolant accident (LOCA).

3. INITIAL PLANT CONDITIONS:

On November 21, 2003, at approximately 22:53 Mountain Standard Time (MST), Palo Verde Unit 2 was defueled in its 11th refueling outage.

There were no major structures, systems, or components that were inoperable at the start of the event that contributed to the event.

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

4. EVENT DESCRIPTION:

On November 21, 2003, at approximately 22:53 Mountain Standard Time, Palo Verde Nuclear Generating Station Unit 2 experienced a valid Engineered Safety Feature (ESF) actuation of the "A" Emergency Diesel Generator (EDG). Unit 2 had been performing testing of the Gas Turbine Generator #1 (alternate AC Power source for station blackout) in isochronous mode. This testing required GTG #1 to be run in parallel with EDG "A."

Gas Turbine Generator (GTG) one was being tested in accordance with procedure, "GTG Isochronous Test." As part of restoring train A safety related bus in Unit #2 back to offsite power, the Diesel Generator (DG) was paralleled with the GTG. The procedure then called for unloading and disconnecting from the GTG, paralleling the DG with offsite power, and then unloading and shutting down the DG. The objective of the restoration section is to maintain uninterrupted power to the A train bus. During the process of attempting to unload the GTG, by increasing load on the DG, the GTG output breaker opened unexpectedly, and the DG accepted the load. Shortly afterwards, about the time the control room operators switched the DG to the isochronous mode of operation, the DG test mode start/run relay de-energized, the DG output breaker tripped de-energizing the bus. EDG "A" shifted from the "test run" mode to the "emergency" mode (on a loss of offsite power (LOP) signal) and the output breaker re-closed, re-supplying the train "A" 4.16 KV bus. The DG then successfully ran and accepted the required loads in the emergency mode.

Offsite power was available to both safety buses throughout the event. The other (Train "B") safety bus was being supplied by offsite power and its EDG was operable. The offsite electrical grid was stable.

Palo Verde Unit 2 was defueled in its 11th refueling outage. 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. There were no failures that rendered a train of a safety system inoperable and no failures of components with multiple functions were involved. 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.

On November 22, 2003, the NRC Operations Center was notified in accordance with 10CFR50.72(b)(3) of the event at approximately 02:30 MST.

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

5. ASSESSMENT OF SAFETY CONSEQUENCES:

This condition did not adversely affect the safe operation of the plant or health and safety of the public. Specifically, it did not result in the release of radioactivity; it did not affect or result in any other ESF actuations, and caused no failures of the other train safety systems. Unit 2 was in an outage and de-fueled. The affected ESF train A was removed from service for testing and the B train was not affected. Two offsite power sources were available at all times during this event. The DG operated and accepted loads in the emergency mode within its design basis requirements; therefore there was no impact to the safety analysis or consequences due to this event.

There are no actual safety consequences as a result of this event, the event would not have prevented the fulfillment of the safety function, and the condition did not result in a safety system functional failure as defined by 10 CFR50.73 (a) (2) (v).

6. CAUSE OF THE EVENT:

APS has concluded the direct cause of the LOP on the A train bus was the de-energizing of the of the DG test mode start/run relay. The cause of why the relay de-energized has not been determined and is currently being investigated under the APS corrective action program.

No unusual characteristics of the work location (e.g., noise, heat, poor lighting) directly contributed to this event.

7. CORRECTIVE ACTIONS:

Troubleshooting was performed and the test mode start/run relay was replaced.

An administrative hold had been placed on the "GTG Isochronous Test," the test procedure in use at the time of the event. Minor revisions to this procedure were made following troubleshooting. The test was re-performed without any incidents and completed satisfactorily.

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

Any additional corrective actions taken as a result of the investigation of this event will be implemented in accordance with the APS corrective action program. If information is subsequently developed that would significantly affect a reader's understanding or perception of this event, a supplement to this LER will be submitted.

8. PREVIOUS SIMILAR EVENTS:

In the past three years, Palo Verde Nuclear Generating Station has not experienced a valid EDG actuation.

9. ADDITIONAL INFORMATION:

None.