



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear
Generating Station

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102-05373-CE/CKS/DJS
November 7, 2005

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528
License No. NPF 41
Licensee Event Report 2005-006-00**

Attached please find Licensee Event Report (LER) 50-528/2005-006-00 prepared and submitted pursuant to 10 CFR 50.73. This LER reports a shutdown required by Technical Specifications based on the inability to return "A" Emergency Diesel Generator to operable status following a failed routine surveillance test within the TS action completion time. This report also discusses the failure to complete the required LER within sixty (60) days of the event which occurred on March 18, 2005.

In accordance with 10 CFR 50.4, 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 Daniel G. Marks, Section Leader, Regulatory Affairs, at (623) 393-6492.

The corrective actions described in this LER are not necessary to maintain compliance with regulations.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

CE/CKS/DJS/ca

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

JE22

LICENSEE EVENT REPORT (LER)

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

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.

1. FACILITY NAME Palo Verde Nuclear Generating Station (PVNGS) Unit 1	2. DOCKET NUMBER 05000528	3. PAGE 1 OF 5
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4. TITLE

TS Required Reactor Shutdown on EDG "A" Failure to Start During Post Maintenance Testing

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
03	18	2005	2005	- 006 -	00	11	07	2005		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

1

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

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> 20.2201(b) | <input type="checkbox"/> 20.2203(a)(3)(i) | <input type="checkbox"/> 50.73(a)(2)(i)(C) | <input type="checkbox"/> 50.73(a)(2)(vii) |
| <input type="checkbox"/> 20.2201(d) | <input type="checkbox"/> 20.2203(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
| <input type="checkbox"/> 20.2203(a)(1) | <input type="checkbox"/> 20.2203(a)(4) | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |
| <input type="checkbox"/> 20.2203(a)(2)(i) | <input type="checkbox"/> 50.36(c)(1)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)(A) |
| <input type="checkbox"/> 20.2203(a)(2)(ii) | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) |
| <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(v)(A) | <input type="checkbox"/> 73.71(a)(4) |
| <input type="checkbox"/> 20.2203(a)(2)(iv) | <input type="checkbox"/> 50.46(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(v)(B) | <input type="checkbox"/> 73.71(a)(5) |
| <input type="checkbox"/> 20.2203(a)(2)(v) | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(v)(C) | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> 20.2203(a)(2)(vi) | <input type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D) | Specify in Abstract below
or in NRC Form 366A |

10. POWER LEVEL

100

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

Daniel G. Marks, Section Leader, Regulatory Affairs

TELEPHONE NUMBER (Include Area Code)

623-393-6492

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
X	EK	DG	C634	Y					

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 March 18, 2005 at 15:00 Mountain Standard Time (MST) Palo Verde Unit 1 was in Mode 1 (Power Operations), operating at approximately 100 percent power, when Control Room personnel commenced a reactor shutdown required by Technical Specification 3.8.1.

On March 17, 2005, at approximately 04:11 MST, Unit 1 Diesel Generator "A" failed to start during its post maintenance retest. The diesel generator (DG) tripped on incomplete sequence. Prior to tripping, the DG reached approximately 100 rpm for fifteen seconds. It has been determined that the cause of the DG failure was due to a governor failure. The failed governor has been replaced. At 17:50 MST on March 17, 2005, DG "B" was tested satisfactorily to confirm there was no common cause failure. Unit 1 was shutdown because the load rejection retest of DG "A" is prohibited in Modes 1 through 4. The LCO 3.8.1 would expire at 04:00 MST, March 19, 2005 requiring initiation of Shut Down required by Technical Specifications if no action was taken. At 08:48 MST on March 19, 2005, Unit 1 entered Mode 5 (Cold Shutdown) and exited LCO 3.8.1.

In the past three years, Palo Verde reported reactor shutdowns required by Technical Specifications but none associated with the same root cause.

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Palo Verde Nuclear Generating Station Unit 1	05000528	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		2005	-- 006	-- 00	

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

1. REPORTING REQUIREMENT(S):

This LER (50-528/2005-006-00) is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(A), to report the completion of a reactor shutdown required by Technical Specifications. Specifically, on March 18, 2005 Control Room personnel completed a reactor shutdown because the load rejection retest of DG "A" is prohibited in Modes 1 through 4. LCO 3.8.1b which requires two Emergency Diesel Generators (EDG) – (EIS:EK), each capable of supplying one train of the onsite class 1E alternating current (ac) power distribution system, be operable. (Reference: ENS call # 41502)

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

The standby power supply for each safety-related load group consists of one EDG, 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:

On March 18, 2005 Palo Verde Unit 1 was in Mode 1 (Power Operations), operating at approximately 100 percent power. At the start of the event EDG "A" was inoperable due to a pre-planned routine maintenance outage. No other major structures, systems, or components 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:

Prior to the event, on March 16, 2005, at 04:00 MST Unit 1 entered LCO 3.8.1 to conduct pre-planned routine maintenance on EDG 'A.'

On March 17, 2005 at 04:11 MST the Unit 1 EDG "A" failed to start during its post maintenance retest. The Diesel Generator tripped on incomplete sequence during an exception Test Mode start/run. Prior to tripping, an Area Operator reported that the diesel reached approximately 100 rpm for 15 seconds. The engine was quarantined for Root Cause Analysis. Subsequently, Unit 1 was shutdown because the load rejection retest of the replaced governor for DG "A" is prohibited in Modes 1 through 4. At that point in time, Unit 1's only operable EDG was the "B" train EDG.

Technical Specification 3.8.1 condition "B" requires the following actions to be completed with one EDG inoperable:

"B.1 Perform SR 3.8.1.1 for the operable required offsite circuit(s) within 1 hour and once per 8 hours thereafter and,

B.2 Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable within 4 hours from discovery of condition B concurrent with inoperability of redundant required feature(s) and,

B.3.1 Determine OPERABLE DG is not inoperable due to common cause failure within 24 hours (or)

B.3.2 Perform SR 3.8.1.2 for OPERABLE DG within 24 hours and,

B.4 Restore DG to OPERABLE status within 72 hours and within 6 days from discovery of failure to meet LCO."

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

5. ASSESSMENT OF SAFETY CONSEQUENCES:

With one EDG inoperable, the remaining operable EDG and offsite circuits are adequate to supply electrical power to the onsite class 1E ac power distribution system. The 72 hour completion time takes into account the capacity and capability of the remaining ac sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The event did not result in any challenges to the fission product barriers or result in the release of radioactive materials. Therefore, there were no adverse safety consequences or implications as a result of this event and the event did not adversely affect the safe operation of the plant or health and safety of the public.

The event did not result in a transient more severe than those analyzed in the updated Final Safety Evaluation Report Chapters 6 and 15. The event did not have any nuclear safety consequences or personnel safety impact.

The condition would not have prevented the fulfillment of any safety function and did not result in a safety system functional failure as defined by 10 CFR 50.73(a)(2)(v).

6. CAUSE OF THE EVENT:

The cause of the EDG "A" failure was due to a governor failure. The failed governor has been replaced. At 17:50 on March 17, 2005, EDG "B" was tested satisfactorily to confirm there was no common cause failure. Unit 1 was shutdown because the load rejection retest of the replaced governor for DG "A" is prohibited in Modes 1 through 4.

[The load rejection test (Technical Specification Surveillance Requirement (SR) 3.8.1.9) is prohibited in Modes 1 through 4.]

The cause of the late Licensee Event Report (LER) was cognitive error. The cognitive error appears to have been a "mental lapse," in that the LER requirement to report the completion of a shutdown was not recognized, even though ENS 41502 to report the initiation of a shutdown was recognized and performed. Normally, the "POTENTIALLY

LICENSEE EVENT REPORT (LER)

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

SIGNIFICANT Maintenance Rule Functional Failure (MRFF) Condition Reports/Disposition Request (CRDR) # 2782680 would be returned to the CRDR Review Committee for reclassification to "SIGNIFICANT" when the condition becomes reportable. A review of CRDR 2782680 determined that it was not reclassified until 04/01/2005 when it was determined to be (solely) a Maintenance Rule Functional Failure (MRFF) (SIGNIFICANT EQUIPMENT ROOT CAUSE OF FAILURE ANALYSIS). CRDR 2783081 was written to document the reports required for the Unit 1 normal shutdown. A review of CRDR 2783081 determined that it was only classified as REVIEW -CLOSED because the shutdown had no other complications, further supporting the "mental lapse" theory.

7. CORRECTIVE ACTIONS:

On March 18, 2005 the reactor was manually shutdown. The governor on EDG "A" was replaced and all retests were completed satisfactorily. The Unit was started and synchronized to the grid on March 21, 2005.

A significant investigation into the EDG "A" governor failure has been completed.

The late LER submittal was a cognitive error. All members of the Regulatory Affairs group were counseled regarding this omission to report the completion of a TS required plant shutdown.

8. PREVIOUS SIMILAR EVENTS:

In the past three years, Palo Verde reported reactor shutdowns required by Technical Specifications but none associated with the same root cause.