10 CFR 50.73

Jennifer L. Spina
Vice President
Nuclear Regulatory & Oversight

Palo Verde
Nuclear Generating Station
P.O. Box 52034
Phoenix, AZ 85072
Mail Station 7602
Tel: 623.393.4621

102-08956-JLS/TR
June 5, 2025

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

Subject: **Palo Verde Nuclear Generating Station (PVNGS) Unit 1**
Docket No. STN 50-528 / Renewed License No. NPF-41
Licensee Event Report 2025-003-00

Enclosed, please find the Licensee Event Report (LER) 50-528/2025-003-00 that has been prepared and submitted pursuant to 10 CFR 50.73. This LER reports an event in which Unit 1 had a Specified System Actuation due to an invalid Loss of Power (LOP)/Load Shed (LS) signal which resulted in a valid LOP to the Train A Class 1E 4.16 kilovolt (kV) bus.

In accordance with 10 CFR 50.4, copies of this LER are being forwarded to the Nuclear Regulatory Commission (NRC) Regional Office, NRC Region IV, and the Senior Resident Inspector.

No new commitments are being made to the NRC by this letter.

Should you need further information regarding this submittal, please contact Matthew S. Cox, Department Leader, Nuclear Regulatory Affairs, at (623) 393-5753.

Sincerely,

Spina, Jennifer (Z08962)

Digitally signed by Spina, Jennifer (Z08962)
Date: 2025.06.05 11:50:41 -07'00'

JLS/TR/cr

Enclosure: Unit 1 Licensee Event Report 2025-003-00

cc: J. Monninger NRC Region IV Regional Administrator
W. T. Orders NRC NRR Project Manager for PVNGS
A. Tran NRC Acting Senior Resident Inspector for PVNGS

ENCLOSURE

Unit 1 Licensee Event Report
2025-003-00

NRC FORM 366 (04-02-2024) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED BY OMB: NO. 3150-0104 | EXPIRES: 04/30/2027

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name		2. Docket Number	3. Page
Palo Verde Nuclear Generating Station (PVNGS) Unit 1	■ 050 ☐ 052	00528	1 OF 4

4. Title

Unit 1 Specified System Actuation due to Loss of Power (LOP)/Load Shed (LS) Signal

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved		
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	☐ 050	Docket Number
04	08	2025	2025	- 003 -	00	06	05	2025	Facility Name	☐ 052	Docket Number

9. Operating Mode	10. Power Level
Defueled	0

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.1200(a)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	☐ 73.1200(b)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	☐ 73.1200(c)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.36(c)(2)	☑ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)	☐ 73.1200(d)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**	☐ 73.1200(e)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.77(a)(1)	☐ 73.1200(f)
☐ 20.2203(a)(2)(iii)		☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(2)(i)	☐ 73.1200(g)
☐ 20.2203(a)(2)(iv)		☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(ii)	☐ 73.1200(h)
☐ 20.2203(a)(2)(v)		☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)		

☐ **OTHER** (Specify here, in abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Matthew S. Cox, Department Leader, Nuclear Regulatory Affairs	(623) 393-5753

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS		Cause	System	Component	Manufacturer	Reportable to IRIS

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☑ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)

On April 8, 2025, at 1924 Mountain Standard Time (MST), while Operations was re-energizing the Unit 1 Train A Balance of Plant Engineered Safety Features Actuation System (BOP-ESFAS) following pre-planned refueling outage maintenance, an invalid Loss of Power (LOP)/Load Shed (LS) signal actuated. This resulted in a valid LOP to the Unit 1 Train A Class 1E 4.16 kilovolt (kV) bus. Operators restored power to Train A Class 1E 4.16 kV bus with the Train A Emergency Diesel Generator (EDG) at 1934 MST.

The direct cause of this event was that the Repetitive Task (RT) to install cross train jumpers and lift leads for the load shed relays to support de-energizing the Train A BOP-ESFAS was not performed. Corrective Actions include briefings with Operations and maintenance personnel to reinforce effective communication and supervisory oversight in accordance with station procedures as well as procedure and design modification implementation enhancements.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Palo Verde Nuclear Generating Station (PVNGS) Unit 1	■ 050 ☐ 052	00528	2025	- 003	- 00

NARRATIVE

All times are in Mountain Standard Time.

1. REPORTING REQUIREMENT(S):

This Licensee Event Report (LER) is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) for Specified System Actuation, because an unexpected LOP/LS signal actuated. As a result, the Train A Emergency Diesel Generator (EDG) started and restored power to the Train A Class 1E 4.16 kV bus.

This event was reported to the NRC pursuant to 10 CFR 50.72(b)(3)(iv)(A), Specified System Actuation, as an 8-Hr Non-Emergency report on April 8, 2025, via the Event Notification System (ENS) notification (EN# 57656).

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

Electrical Power System: The safety related equipment for each PVNGS unit is powered by one of two load groups (Train A and Train B). Either of the associated trains can provide power for safe plant shutdown. Each alternating current (AC) train includes one Class 1E 4.16 kV bus (EIIS: EB).

The preferred and alternate power sources for each load group is offsite 525 kV AC power (EIIS: EK) and is supplied via the 13.8 kV secondary windings of two of the three startup transformers (EIIS: EA) to six 13.8 kV intermediate buses. Each unit receives 13.8 kV power from two of the intermediate buses. Class 1E 4.16 kV safety load group power is provided from the associated intermediate bus engineered safety feature (ESF) transformers.

Emergency Diesel Generator (EDG) (EIIS: EK): The system 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 (off-site) power. Each EDG is an independent unit capable of providing power to safety equipment in the event of the loss of the preferred (off-site) power to safely shut down the plant.

Engineered Safety Features Actuation System (ESFAS) (EIIS: JE): The system provides initiating signals to components requiring automatic actuation. These actuating signals are generated when monitored variables reach levels that require protective action. The system performs its function by initiating ESFAS equipment, if select abnormal conditions are detected. The LOP/LS signal logic continuously monitors the Class 1E 4.16 kV bus undervoltage relays. The load shed signal sheds 4.16 kV and selected 480V loads from the Class 1E 4.16 kV bus and trips the 4.16 kV Class 1E bus preferred (offsite) power supply breakers. A LOP/LS also sets the load sequencer to the proper mode of operation to ensure only necessary loads are automatically started to protect the plant in the event of a loss of offsite power.

3. INITIAL PLANT CONDITIONS:

In support of the 1R25 refueling outage, PVNGS Unit 1 was at 0 percent power and defueled with the core offloaded to the spent fuel pool.

At the time of the event, Train A and Train B BOP-ESFAS were de-energized in support of planned Train B BOP-ESFAS modification work activities. To maintain availability of the Train A EDG during the Train A BOP-ESFAS outage, the EDG handswitch was placed in the OFF position with pre-planned actions to be performed in the event of a LOP event.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Palo Verde Nuclear Generating Station (PVNGS) Unit 1	■ 050 ☐ 052	00528	2025	- 003	- 00

NARRATIVE

In addition, the Train A Class 1E 4.16 kV bus was being supplied by offsite power by the ESF alternate transformer through its alternate supply breaker due to the primary ESF transformer being unavailable due to inspections and modification work.

Unit 2 and Unit 3 were in Mode 1 at 100 percent power and were not impacted by the event.

4. EVENT DESCRIPTION:

On April 5, 2025, at 1319, Train B BOP-ESFAS was de-energized in support of Train B BOP-ESFAS modification work activities.

On April 8, 2025, at 1030, Train A BOP-ESFAS was de-energized in support of Train B BOP-ESFAS modification work activities.

At 1924, during the Train A BOP-ESFAS restoration, an invalid LOP/LS signal actuated. This resulted in a valid LOP of the Unit 1 Train A Class 1E 4.16 kV bus. The loss of power resulted in Train A equipment de-energizing and an actuation signal being sent to the Train A EDG. The Train A EDG did not start due to the handswitch being in the OFF position.

At 1934, Operations placed the Train A EDG handswitch in Remote and the Train A EDG started. Loads sequenced on appropriately.

The Train A EDG continued to power the Unit 1 Train A Class 1E 4.16 kV bus until April 10, 2025.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

This event did not cause an increase in the Unit 1 Risk Management Action Level (RMAL) and nominal defense in depth was maintained. Therefore, the nuclear safety impact associated with this event is minimal.

There was no radiological or industrial safety significance involved in this event.

6. CAUSE OF THE EVENT:

The direct cause of this event was that the instrument and controls RT to install cross train jumpers and lift leads for the load shed relays to support de-energizing the Train A BOP-ESFAS was not performed.

The apparent cause of this event was that Operations did not provide adequate supervisory oversight to ensure their organization adheres to station standards.

Contributing causes of this event included Operations personnel did not meet station standards for Procedure Use and Adherence regarding a non-conditional step, Operations procedure for de-energizing BOP-ESFAS did not include a step to confirm successful completion of a procedural step, inadequate communication between work groups, and inadequate implementation of the Train B BOP-ESFAS design modification work activities.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Palo Verde Nuclear Generating Station (PVNGS) Unit 1	■ 050 ☐ 052	00528	2025	- 003	- 00

NARRATIVE

7. CORRECTIVE ACTIONS:

Development of briefings to reinforce effective communication and supervisory oversight in accordance with station procedures for Operations and maintenance personnel.

Revise Operations procedure for de-energizing BOP-ESFAS to enhance verbiage and to add a new step to confirm the action was completed prior to proceeding in the procedure sequence.

Review of the BOP-ESFAS modification implementation activities to identify any gaps in required work activities.

8. PREVIOUS SIMILAR EVENTS:

On April 27, 2024, Unit 3 Train B EDG inadvertently started when the handswitch was taken to REMOTE as part of clearance restoration activities. The automatic start of the EDG was caused by a LOP signal that had not been reset after the de-energization of Train B BOP-ESFAS. The cause of this event was an error trap in the De-Energization of BOP-ESFAS procedure.

Although both of these events resulted from utilizing the De-Energization of BOP-ESFAS procedure, the corrective actions from the previous LER (50-530/2024-002-00) event would not have prevented the event which is the subject of this LER.