10 CFR 50.73

A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear Generating Station

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102-06213-DCM/RAB/JR
July 07, 2010

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 2010-003-00

Enclosed, please find Licensee Event Report (LER) 50-528/2010-003-00 that has been prepared and submitted pursuant to 10 CFR 50.73. This LER reports a condition prohibited by technical specifications when a containment building equipment hatch was not capable of being fully closed during core alterations.

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 Marianne Webb, Section Leader, Regulatory Affairs, at (623) 393-5730.

Arizona Public Service Company makes no commitments in this letter.

Sincerely,

FOR D. C. MIMS

DCM/RAB/TNW/JR/gat

Enclosure

cc: E. E. Collins Jr. NRC Region IV Regional Administrator
J. R. Hall NRC NRR Project Manager - (send electronic and paper)
L. K. Gibson NRC NRR Project Manager - (send electronic and paper)
R. I. Treadway NRC Senior Resident Inspector for PVNGS

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 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)

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

4. TITLE

Technical Specification Violation - Loss of Containment Building Equipment Hatch Closure Capability

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
										05000
05	02	2010	2010	- 003 -	00	07	07	2010	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE: 6

10. POWER LEVEL: 0

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)
Marianne Webb, Section Leader, Regulatory Affairs	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 May 8, 2010, during the Unit 1 refueling outage, the station discovered that the containment building equipment hatch (hatch) was not capable of being fully closed while core alterations were in progress on May 2, 2010.

On two occasions, totaling approximately 4 hours and 47 minutes, core alterations were in progress and a potential existed that the hatch could not be fully closed. The investigation found that post-maintenance test procedures were not followed to ensure proper hatch motion after maintenance on both the east and west hatch hoist upper limit switches. As an immediate corrective action, the hatch west hoist upper and lower limit switches were readjusted and the hatch was closed and secured.

In the past three years, Palo Verde Nuclear Generating Station has not reported a similar event where the containment equipment hatch was not able to be fully closed during core alterations.

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

All times are Mountain Standard Time and approximate unless otherwise indicated.

1. REPORTING REQUIREMENT(S):

This Licensee Event Report (LER) is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications (TS). The Containment (EIIS: NH) building equipment hatch (hatch) was not capable of fully closing during core alterations or movement of irradiated fuel assemblies within containment as required by TS Limiting Condition for Operation (LCO) 3.9.3, Containment Penetrations.

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

The hatch is a 23 foot circular opening that, when open, provides a means to move large equipment and components into and out of Containment. The hatch weighs 39,500 pounds and is designed as part of a pressure boundary capable of withstanding 60 psig.

In Modes 1 through 4, the hatch is closed to comply with TS LCO 3.6.1, Containment. The Containment is not required to be operable in Mode 5. However, in Mode 6, TS LCO 3.9.3 requires the hatch to be closed or capable of being closed during core alterations or movement of irradiated fuel assemblies within Containment. The closed hatch minimizes the release of fission products to the environment in the event of a fuel handling accident inside Containment.

3. INITIAL PLANT CONDITIONS:

On May 2, 2010, Palo Verde Unit 1 was in Operating Mode 6 (Refueling). There were no other 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:

May 1, 2010

- The hatch was opened during core alterations to support outage activities.

May 2, 2010

- From 00:30 to 02:20, maintenance was performed on both the east and west hatch hoist upper limit switches. When maintenance activities on the hatch were complete, a post-maintenance test to ensure the hatch could be closed was not performed as required by procedure.
- At 02:09, the core reload was complete.
- From 18:32 to 21:40, core alterations proceeded again (lowering of upper guide structure).

May 8, 2010

- An attempt was made to close the hatch; however, the west side equipment hatch hoist would not allow the hatch to fully close or fully open. As an immediate corrective action, the hatch west hoist upper and lower limit switches were readjusted and the hatch was closed and secured.

5. ASSESSMENT OF SAFETY CONSEQUENCES:

The purpose of maintaining the capability to close the hatch during Mode 6 is to minimize the release of radioactivity in the event of a fuel handling accident inside Containment. This capability is not credited in the PVNGS UFSAR, Chapter 15, Accident Analysis to mitigate the consequences of the accident or prevent the release of radioactive material. It is assumed, during a fuel handling accident inside Containment, that radioactivity is instantaneously released to the Containment and released to the outside atmosphere within two hours.

There were no actual safety consequences as a result of this condition. The condition would not have prevented the fulfillment of a safety function and the condition did not result in a safety system functional failure as described by 10 CFR 50.73 (a)(2)(v).

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

6. CAUSE OF THE EVENT:

The investigation found that controls in Procedures 40OP-9ZZ26, Tracking Containment Penetrations, and 40DP-9AP21, Protected Equipment, were not adequate to prevent work on the hatch during core alteration activities. Also, following the maintenance work performed on both the east and west hatch hoist upper limit switches, Electricians did not follow post-maintenance test step 3.1 of the work order which required a performance test in order to ensure proper operation of the hatch in the open and close direction. Through interviews of training personnel and experienced Electricians, the investigation found that an adjustment to the upper limit switch could adversely affect the lower limit switch. Changes to set points for the limit switches are made by using two adjustable rotating gears; one is for the upper limit switch and the other is for the lower limit switch. The work order did not contain a precaution that adjusting one limit switch can affect the set point of the other limit switch if its associated rotating gear is not secured by hand. Near the end of the Unit 1 refueling outage core reload, the hatch was not able to fully close on May 2, 2010, between 00:30 and 02:09 and again between 18:32 and 21:40 while completing core reload and subsequently lowering the upper guide structure which also is defined as a core alteration.

Additionally, neither the controls in procedures nor worker training resulted in awareness by Operations personnel, Containment Coordinators and Electrical Maintenance personnel that work on the hatch hoist upper limit switches has the potential to affect closure capability of the hatch.

7. CORRECTIVE ACTIONS:

As an immediate corrective action, the hatch west hoist upper and lower limit switches were readjusted and the hatch was closed and secured on May 8, 2010.

The following additional corrective actions are planned:

- Develop and implement initial and continuing training on shutdown risk and cover post-maintenance testing requirements for operators in Licensed Operator Initial Training and Licensed Operator Continuing Training.

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

- Develop and implement initial and continuing training on shutdown risk and Conduct of Maintenance post maintenance testing requirements for maintenance personnel qualified as general plant electrician, general plant mechanic and general plant instrumentation.
- Revise Procedures 40OP-9ZZ26, Tracking Containment Penetrations, and 40DP-9AP21, Protected Equipment, to address Containment equipment hatch controls.
- Update vendor technical document (VTD), Geared Rotary Limit Switch Adjustment, and VTD, General Electric CR115E Geared Rotary Limit Switch Installation and Maintenance Guide, to ensure proper setting of the hoist upper limit switch without affecting the lower limit switch (and vice versa) and ensuring an adequate retest.

8. PREVIOUS SIMILAR EVENTS:

Palo Verde Nuclear Generating Station (PVNGS) has not reported a similar event in the past three years. However, during the Unit 2 outage in 2009, a dedicated Containment equipment hatch closure crew left their station (in Containment) to attend a safety stand-down in another unit. While the corrective actions from Unit 2 could have increased the awareness of the importance of being able to close the equipment hatch, and sensitized plant personnel to work activities on the hatch, they did not address the specific work control issues identified in this event.