FPL

April 30, 2008
10 CFR § 50.73
L-2008-100

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 2008-002-00
Date of Event: March 1, 2008
LER 2008-002-00, Containment Purge Valve and Associated Penetration Fail Leak Rate Test Due to Inadequate Preventive Maintenance

The attached License Event Report (LER) 05000250/2008002-00 is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B.

If there are any questions, please call Ms. Olga Hanek at (305) 246-6607.

Very truly yours,

William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

RE

Attachment

cc: Regional Administrator, USNRC, Region II
Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant

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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
Turkey Point Unit 3	05000250	1 OF 3

4. TITLE Containment Purge Valve and associated Penetration Fail Leak Rate Test Due to Inadequate Preventive Maintenance

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
3	01	2008	2008	- 002 -	00	4	30	08	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE

3

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

NAME	TELEPHONE NUMBER (Include Area Code)
Ronald L. Everett, Licensing Engineer	305-246-6190

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
E	NH	ISV	Henry Pratt	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 1, 2008, a local leak rate test (LLRT) was performed on Penetration 35 (POV-3-2600 and POV-3-2601) and a purge valve, POV-3-2600, and penetration 35 failed the test with a leakage of about 45,000 sccm. The acceptance criteria was less than or equal to 16,500 sccm. The valve POV-3-2600 failed its LLRT because the valve disc was not fully closed. Corrosion in the actuator bearing surfaces created friction that was suspected to have prevented the actuator from delivering the seating torque needed to provide an adequate seal. The penetration and associated valves were put under administrative controls to prevent further operation. The penetration is considered to have been inoperable from 2/28/08 at 00:25 hours when the penetration was opened in Mode 3, until the successful LLRT on 3/1/08 at about 14:10 hours. Since the penetration was inoperable for approximately 61 hours, the 24-hour allowed outage time of Technical Specification (TS) 3.6.1.7.b was exceeded. Immediate corrective actions included performing a "snoop" check on the outer isolation valve disc/seat. The snooping (which would act as a seat lubricant), additional pressurization of the penetration (up to approximately 60 psig), and waiting time most likely allowed the actuator spring force to position the disc a small amount further into the seat resulting in a successful LLRT. Preventive maintenance (PM) was revised to grease the bearing surfaces on an 18-month frequency.

DESCRIPTION OF THE EVENT

On February 28, 2008 during a Short Notice Outage, the Unit 3 containment was purged. The purge was terminated February 29, 2008 at 03:52. On March 1, 2008, a local leak rate test (LLRT) was performed around 00:00 on Penetration [PEN] 35 (POV-3-2600 and POV-3-2601). The containment [EIIS: NH] purge supply valve POV-3-2600 [EIIS: V] and the penetration failed the test with a leakage of about 45,000 standard cubic centimeters per minute (sccm). The acceptance criteria was less than or equal to 16,500 sccm. The valve POV-3-2600 failed its LLRT because the valve disc was not fully closed. A successful LLRT was performed within 24 hours of discovery on 3/1/08 at about 14:10 hours.

Unit 3 was in a Short Notice Outage (SNO) in mode 3 at the time of discovery. The LLRT was not due; however, it was performed as an augmented surveillance because of the valve history and the need to perform a purge during the SNO. The condition is presumed to have existed while purging was in progress during Mode 3. The penetration is considered to have been inoperable from 2/28/08 at 00:25 hours when the penetration was opened in Mode 3, until the successful LLRT on 3/1/08 at 14:10 hours. Assuming this, the penetration and valve were inoperable for about 61 hours, exceeding the allowed 24 hour outage time of Technical Specification 3.6.1.7.b. This condition is reportable in accordance with 10CFR50.73(a)(2)(i)(B).

CAUSE OF THE EVENT AND CORRECTIVE ACTIONS

Subsequent investigation determined corrosion in the actuator bearing surfaces may have created friction that prevented the actuator from delivering the seating torque needed to provide an adequate seal. Condition Report 2008-7337 was initiated to evaluate the event and identify corrective actions.

Immediate corrective actions included cycling POV-3-2600, performing a "snoop" check on the POV-3-2600 purge supply isolation valve disc/seat and stem/packing as well as placing administrative controls on fuses [FU] for POV-3-2600 and POV-3-2601 with instructions not to operate until Mode 5. Following the immediate actions, the penetration retested satisfactorily. Snooping for indications of areas of leakage (which would act as a seat lubricant), additional pressurization of the penetration (up to approximately 60 psig), and waiting time most likely allowed the actuator spring force to position the disc a small amount further into the seat, resulting in an acceptable leakage of about 8,500 sccm.

The failure of POV-3-2600 was most likely due to inadequate preventive maintenance. Corrective actions include diagnostic testing to confirm the suspected cause and identify any other potential contributing causes, inspection of valve internals, and additional Work Order instructions to periodically grease the actuator.

ANALYSIS OF EVENT

The containment purge supply isolation valves are Safety Related, Quality Group B valves. Their safety related functions include preventing the unrestricted release of radioactivity from the containment to the outside environment following a LOCA. This is a function common to all containment penetrations. They also isolate the containment following a LOCA to maintain sufficient backpressure such that emergency core cooling systems will function properly. The failure of the POV-3-2600 purge supply outer isolation valve to fully close during the LLRT for Penetration 35 on 3/1/2008 is considered a Maintenance Rule functional failure of the valve because it could not perform its required isolation function from the time the penetration was opened for containment purging. However,

previous LLRT results of Penetration 35 last performed on 10/5/07 showed the penetration was operable prior to containment purge. The probability of an event resulting in core damage and a release of radioactivity to the containment building is low during the period of time that the valve and penetration were assumed inoperable (about 61 hours) with the reactor in Mode 3. There was no impact on the health and safety of the public due to the event.

ADDITIONAL INFORMATION AND PREVIOUS EVENTS

There were no previous failures of POV-3-2600. A review of industry operating experience for the past five years did not reveal similar events due to the same failure mechanism. There was however, a previous failure of Turkey Point Unit 4 POV-4-2602 to close during an LLRT (documented in Licensee Event Report 2006-001-00 submitted January 29, 2007). The failure of containment purge exhaust valve POV-4-2602 to close was also attributed to increased friction in the actuator due to corrosion. The Preventive Maintenance (PM) process for all of the purge valves was evaluated and determined to be ineffective. One of the corrective actions implemented new lubrication PMs. The effectiveness of the new PMs is still being evaluated under the monitoring program. No corrective actions, including the lubrication PMs had been performed on POV-3-2600. All eight (8) containment purge valves were placed into (a)(1) of the maintenance rule for continued monitoring of the PM program. Once the monitoring proves that the PM program is effective, the valves will be returned to (a)(2) status. Because the corrective actions from CR 2006-34852 have not yet been implemented for POV-3-2600, the condition is not considered a repeat condition from a Maintenance Rule perspective.

EIIS Codes are shown in the format [EIIS SYSTEM:IEEE system identifier, component function identifier, second component function identifier (if appropriate)].

MANUFACTURER DATA

The valves are made by Henry Pratt, model R1A5. The actuators are model T420-SR3-S made by Bettis. The identical valves and actuators are used in the other 48" purge supply valves (both units 3 and 4).