CATEGORY 1

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FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
AUTH.NAME AUTHOR AFFILIATION
SHUKLA,G.S. Florida Power & Light Co.
HOVEY,R.J. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-007-00:on 981020,containment purge supply,valve opened wider than TS limit.Caused by improper setting of mechanical stops.Incorporated improved standard method of measuring angular valve position into SP.With 981118 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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L-98-282
10 CFR 50.73

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

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 1998-007-00
Date of Event: October 20, 1998
Containment Purge Supply Valve Opened Wider Than Technical Specifications Limit.

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

GSS

Attachment

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

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

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APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

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FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
TURKEY POINT UNIT 3	05000250	1 OF 5

TITLE (4)
Containment Purge Supply Valve opened wider than the Technical Specifications Limit

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	20	1998	1998	- 007 -	00	11	18	1998	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	5
POWER LEVEL (10)	00

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
GIRIJA S. SHUKLA - LICENSING ENGINEER	305-246-6047

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

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

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

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

During the Unit 3 Cycle 17 refueling outage, while performing a surveillance per Technical Specification (TS) 4.6.1.7.3, the mechanical stops for the Containment Purge Supply Isolation Valve, POV-3-2601, were found to be set to allow a valve opening of 38 degrees which is wider than 33 degrees allowed by TS 3.6.1.7.b. This valve is presumed to have had the same opening of 38 degrees when it was opened, prior to shutdown for the refueling outage, for more than 55 hours for containment purge before reaching COLD SHUTDOWN conditions. Therefore, the valve did not comply with the requirements of TS.

The cause of this event was improper setting of the mechanical stops, which was discovered when a new and improved measuring technique was used for the first time to measure the angular position of valve POV-3-2601.

Corrective actions include incorporating an improved standard method of measuring angular valve position in the existing surveillance procedures, providing margin between the TS limit and the procedural limit by establishing the nominal set value for the mechanical stops sufficiently below the present 33 degrees setting, and adjusting purge valves to the new open stop setpoint.

I. DESCRIPTION OF THE EVENT

On October 20, 1998, at 1000 EDT, during Florida Power and Light's Turkey Point Nuclear Plant Unit 3 Cycle 17 refueling outage, while performing a surveillance per Technical Specification (TS) 4.6.1.7.3, the mechanical stops for the Containment Purge Supply Isolation Valve POV-3-2601 [VA:isv] were found to be set to allow a valve opening of 38 degrees which is wider than 33 degrees allowed by TS 3.6.1.7.b. This valve is presumed to have had the same opening of 38 degrees when it was opened prior to shutdown for the refueling outage for more than 55 hours between September 19, 1998, and September 21, 1998 for containment purge before reaching COLD SHUTDOWN conditions. Therefore, the valve did not comply with the requirements of TS 3.6.4.d. This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).

During the performance of the surveillance procedure 3-PMI-051.7, "Containment Ventilation Isolation Valve Position Indication Channel Calibration," the open limit mechanical stops for the Containment Purge Supply Isolation Valve POV-3-2601 were found to be out of specification. The valve POV-3-2601 stroked open to 38 degrees while the specified acceptance criteria is less than or equal to 33 degrees. Following this discovery, the travel limits for the opening of the valve were reset to within the 33 degrees acceptance criteria of the surveillance procedure.

Valve POV-3-2601 is the inside containment 48 inch containment purge supply isolation valve for the containment purge system. The Containment Purge System is designed to purge the containment atmosphere for unlimited access during shutdown periods. The Containment Purge System is independent of the Auxiliary Building Ventilation System [VF] and includes provisions for handling both supply and exhaust air. The containment purge supply and exhaust butterfly valves, both inside and outside the containment, are normally closed during power operation. When the plant is in a state other than cold shutdown or refueling, the purge supply valves are limited to opening angles of 33 degrees. The open limit mechanical stop settings are verified by surveillance at each refueling outage.

The Limiting Condition for Operation (LCO) contained in TS 3.6.1.7.b, applicable in Modes 1, 2, 3, and 4, states that "the purge supply and exhaust isolation valves shall not be opened wider than 33 or 30 degrees, respectively (90 degrees is fully open)." However, between September 19, 1998, and September 21, 1998, the Unit 3 containment purge system was operated for 55.25 hours in Modes 1 through 4 for containment purge before and at the beginning the Unit 3 Cycle 17 refueling outage. During that time the valve POV-3-2601 is presumed to have been open to the as-found position of 38 degrees. Since it was opened wider than allowed by technical specifications, the valve POV-3-2601 is considered to have been inoperable.

Technical Specification 3.6.4 "Containment Isolation Valves" applies to inoperable containment isolation valves. The specification applicable in Modes 1 through 4, states that "Each containment isolation valve shall be OPERABLE with isolation times less than or equal to required isolation times."

The action statement requires, "With one or more isolation valves inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either: a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

Unit 3 containment purge was in operation in Modes 1 through 4 for 55.25 hours. This value represents the total time containment purge was in operation during the Technical Specification applicable operating Modes 1 through 4. Based on initial opening of the purge valve in Mode 1 and entering Mode 5 over 55 hours later, the requirements of the action statement stated in TS 3.6.4 were not met for an inoperable containment isolation valve POV-4-2603. Therefore, this condition is reportable pursuant to 10 CFR 50.73.

II. CAUSE OF THE EVENT

The cause of this event was improper setting of the mechanical stops which was discovered when a new and improved measuring technique was used for the first time to measure the angular position of the valve POV-3-2601.

The measurement was previously performed per the old technique with a small protractor and template. The limiting angular position of 33 degrees was transferred from the template to the actuator limit switch plate, which introduced some potential inaccuracy. Furthermore, inaccuracy and readability error may have been incurred due to the relatively small angle to be measured and the small switch plate (approximately 4 inches). The new and improved measuring method used recently in performing the surveillance during the Unit 3 Cycle 17 refueling outage employed a fabricated protractor template designed specifically to fit the limit switch plate. This method is considered to be a substantial improvement in accuracy and readability, and contributed to the discovery of higher than the as-left measurement of the angular position of the valve POV-3-2601.

III. SAFETY CONSEQUENCES OF THE EVENT

There were no adverse safety consequences as a result of this event. The safety considerations associated with past operation with the valve stop mispositioned are: (a) dynamic torque applied to the valve while closing during a Design Basis Accident (DBA), and (b) stroke time (closed) with respect to containment isolation. As discussed below, the valve stop mispositioning had no adverse impact on safety.

(a) Dynamic Torque

With respect to the 48-inch valve POV-3-2601, the as-found valve position was 38 degrees open, which exceeds the Technical Specification requirement of limiting the open position to a maximum of 33 degrees (0° position is fully closed, 90° position is fully open). The purpose of this limit is to ensure that the valve can achieve and maintain a closed position within 5 seconds

upon receiving a containment isolation signal. This function must be satisfied without exceeding the actuator's rated breakaway torque as the valve is forced closed by postulated DBA containment pressure.

The 48-inch purge valve actuator is rated as having 87,000 in-lbs. running (dynamic), and 125,000 in-lbs. breakaway (static) torque. The dynamic torque results from the high velocity steam/air mixture exiting containment via valve POV-3-2601 and tends to close the valve. For the disc starting at 35 degrees open, the dynamic torque was calculated to be 51,642 in-lbs. by the vendor. Utilizing existing vendor analyses for torque determination, the calculated maximum torque for the valve disc starting at 38 degrees open would be 62,000 in-lbs. This torque value is less than the valve actuator's running (dynamic) torque of 87,000 in-lbs., and the breakaway (static) torque of 125,000 in-lbs. The resulting torque applied to the actuator starting with the valve open 38 degrees is well within the actuator rating, and therefore, is acceptable.

(b) Stroke Time

The time required for the valve to stroke closed is an additional operating parameter/performance requirement for POV-3-2601 that must be considered. Technical Specification 3/4.6.4 states that "Each containment isolation valve shall be operable with isolation times less than or equal to required isolation times".

The required stroke time (closed) is less than or equal to 5 seconds (closed). Based on historical data, the Inservice Test (IST) maximum allowable stroke (closure) time is 2.00 seconds. Valve POV-3-2601 was stroke tested with an acceptable result (0.90 seconds to stroke closed) from the 38 degree open position. This stroke time is consistent with historical IST trending data. Therefore, the minimal effect of increased travel on stroke time is considered acceptable and does not create an operational concern.

Conclusion

Based on the above evaluation, the Containment Purge supply valve POV-3-2601 would satisfy the 5 second closure time requirement based on an as-found 38 degrees valve stop position. In addition, the actuator would remain functional as the resulting dynamic torque on the actuator would not exceed the manufacturer's design ratings. Hence, it is concluded that the capability to perform post-accident isolation is not compromised, and valve POV-3-2601 is capable of sustaining the expected LOCA dynamic torque loads without damage and performing its intended function under design conditions from an initial disc open angle of 38 degrees or less. Therefore, valve POV-3-2601 is considered to have remained functional with the open stop position set at 38 degrees.

IV. CORRECTIVE ACTIONS

1) An improved standard method of measuring angular valve position will be incorporated in the existing surveillance procedures.

2) A margin will be provided between the TS limit and the procedural limit. Procedural valve position limits will be revised to include the margin. The open stop setpoint will be modified to reflect the revised procedural valve position limits. A nominal set value will be established for the mechanical stops below the present 33 degrees setting. This will provide reasonable tolerance in performing the measurement and setting of the angular open position of the valve.

3) All containment purge valves will be adjusted to the new open stop setpoint during the next Unit 3 and Unit 4 refueling outages.

V. ADDITIONAL INFORMATION

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

SIMILAR EVENTS

There have been no previous events at Turkey Point Nuclear Units 3 & 4, related to non-compliance of Technical Specifications ACTION statement for inoperable containment purge supply and exhaust isolation valves due to their opening wider than the TS limits.

MANUFACTURING DATA

None