

# CATEGORY 1

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ACCESSION NBR: 9603250315      DOC. DATE: 96/03/18      NOTARIZED: NO      DOCKET #  
 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C      05000250  
 AUTH. NAME      AUTHOR AFFILIATION  
 KNORR, J.E.      Florida Power & Light Co.  
 HOVEY, R.J.      Florida Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 96-003-00: on 960222, two ARPI inoperable. Caused by variation with temperature. C/A: incore flux maps performed & ARPIS adjusted. W/960318 ltr.

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L-96-57  
10 CFR §50.73

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
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Gentlemen:

Re: Turkey Point Unit 3  
Docket No. 50-250  
Reportable Event: 96-003-00  
Two Analog Rod Position Indicators Inoperable; Entry into  
Technical Specification 3.0.3

The attached Licensee Event Report, 250/96-003-00, is being  
provided inaccordance with 10 CFR 50.73(a)92) (i) (B).

If there are any questions, please contact us.

Very truly yours,

Robert J. Hovey  
Vice President  
Turkey Point Plant

JEK

attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II,  
USNRC  
Thomas P. Johnson, Senior Resident Inspector, USNRC,  
Turkey Point Plant

9603250315 960318  
PDR ADOCK 05000250  
S PDR

250073

# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>TURKEY POINT UNIT 3</b>										DOCKET NUMBER (2) <b>05000250</b>		PAGE (3) <b>1</b> OF <b>3</b>	
TITLE (4) <b>TWO ANALOG ROD POSITION INDICATORS INOPERABLE; ENTRY INTO TECHNICAL SPECIFICATION 3.0.3</b>													
EVENT DATE (5)			LER NUMBER (6)			RPT DATE (7)			OTHER FACILITIES INV. (8)				
MON	DAY	YR	YR	SEQ #	R#	MON	DAY	YR	FACILITY NAMES			DOCKET # (S)	
02	22	96	96	003	0. 00	03	18	96					
OPERATING MODE (9)		1		<b>10 CFR 50.73(a)(2)(I)(B)</b>									
POWER LEVEL (10)		100%											
LICENSEE CONTACT FOR THIS LER (12)													
J. E. Knorr, Regulation/Compliance Specialist										TELEPHONE NUMBER <b>305-246-6757</b>			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER			NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER			NPRDS?
B	IU	ZI	W120			NO							
SUPPLEMENTAL REPORT EXPECTED (14) NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>								EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
(if yes, complete EXPECTED SUBMISSION DATE)													
<p>ABSTRACT (16)</p> <p>After a power increase from 70% power on February 21, 1996, with Unit 3 at about 100% rated power, Analog Rod Position Indication (ARPI) for three control rods, all in Bank D, indicated more than twelve steps deviation from their associated group Demand Position Indication (DPI). On February 22, 1996, incore flux maps verified that all Bank D rods were at 197 steps. ARPIS were adjusted to read 197 steps. The analog rod position indication varies with temperature (i. e. after a power level change), and the phenomenon has been known since 1972. The vendor has stated that the variation is inherent to the design of the system, and Technical Specifications allow a one-hour soak time after rod motion, during which most of the apparent misalignments correct themselves. During performance of incore flux mapping, two of the three rods were determined to have inoperable ARPIS at the same time. Since there is no Technical Specification action statement for more than one inoperable ARPI in a bank, Unit 3 entered Technical Specification 3.0.3.</p> <p>In order to reduce the probability of entry into Technical Specification 3.0.3 due to this phenomenon, Florida Power &amp; Light (FPL) has submitted a proposed license amendment to revise the allowed misalignment from <math>\pm 12</math> steps to <math>\pm 18</math> steps between ARPI and DPI at less than 90% power.</p> <p>After adjustment of the ARPIS to match the DPI and flux map, Technical Specification 3.0.3 was exited.</p>													

# **LICENSEE EVENT REPORT (LER) TEXT CONTINUATION**

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 3	05000250	96-003-00	02 OF 03

## **I. DESCRIPTION OF THE EVENT**

At 1410, on February 21, 1996, Turkey Point Unit 3 began a power increase from 70%. At about 2352, with the unit operating at 100% rated thermal power, and with Bank D group step counters indicating 197 steps, Analog Rod Position Indication (ARPI) [EIIS:IU] for Rod Control Cluster Assemblies (rods) D-8, M-8, and H-4 indicated greater than twelve steps deviation from their associated group step counter. Technical Specification 3.1.3.1 Action Statement b. was entered due to the three misaligned rods. At about 0225 on February 22, 1996, incore flux mapping verified that Rod D-8 was at 197 steps therefore proving that rod D-8 was aligned properly and its associated ARPI was inoperable. Technical Specification 3.1.3.2 was subsequently entered due to ARPI inoperability. Maintenance personnel were called to adjust ARPI for Rod D-8 to read 197 steps and Technical Specification 3.1.3.2 was exited.

At 0305, ARPIS for rods M-8 and H-4, both in Bank D, were verified to be at 197 steps through incore flux mapping, therefore declaring ARPIS for both rods inoperable. Since there is no Technical Specification action statement for more than one inoperable ARPI in a bank, Unit 3 entered Technical Specification 3.0.3. Maintenance personnel then adjusted both ARPIS to 197 steps, and Unit 3 exited Technical Specification 3.0.3.

## **II. CAUSE OF THE EVENT**

The root cause of this event is analog rod position indication variation with temperature, most often after a recent power level change. This temperature variation was first observed at Turkey Point in 1972. Westinghouse stated that temperature variations in indications are inherent to the design of the system. A special test was conducted at Turkey Point in 1975 to investigate this phenomenon, but the results were inconclusive. Generally the temperature dependent variation is corrected within the one hour thermal soak time allowed by Technical Specification 3.1.3.1.

A Turkey Point task team investigated a similar event, reported in LER 251-92-001, and verified that the temperature variation is indeed inherent to the design of the system. While no cost-effective modification has been identified to completely eliminate the problem, two contributing factors identified by the task team (contaminated connectors, and coil polarity) have been corrected. Additionally, procedures have been developed to aid in diagnosing and correcting ARPI troubles.

Another similar event was reported in LER 251-94-003, with a similar conclusion as stated above. As a result of these continuing problems, on July 25, 1995, FPL submitted a proposed license amendment requesting that the allowed misalignment be increased from  $\pm 12$  steps to  $\pm 18$  steps between ARPI and the associated group step counters at or below 90% rated thermal power. This revision will allow greater flexibility in operating requirements for further occurrences of this phenomenon.

## **III. ANALYSIS OF THE EVENT**

The operability of the ARPIS is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits. The requirements of Technical Specification 3.1.3.2 are intended to ensure that the potential effects of rod misalignment are bounded by the accident analyses.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 3	05000250	96-003-00	03 of 03

Incore flux maps determined that all rods were aligned properly, and the ARPIS were adjusted to indicate the correct rod positions. Since all rods were physically aligned at all times, the health and safety of the public were not affected.

## IV. CORRECTIVE ACTIONS

1. Incore Flux maps were performed and determined the rods to be aligned properly.
2. In accordance with procedures 3-PMI-028.3 and MI-028.30, the ARPIS were adjusted to indicate properly.
3. On July 25, 1995, FPL submitted a proposed license amendment to increase the allowed misalignment from  $\pm 12$  steps to  $\pm 18$  steps between ARPI and the associated group step counters at or below 90% rated thermal power.

## V. ADDITIONAL INFORMATION

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

A similar event occurred in March, 1994, and was reported in LER 251-94-003.