

## ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9404190005      DOC. DATE: 94/04/11      NOTARIZED: NO      DOCKET #  
 FACIL: 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C      05000251  
 AUTH. NAME      AUTHOR AFFILIATION  
 MOWREY, C.L.      Florida Power & Light Co.  
 PLUNKETT, T.F.      Florida Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 94-003-00: on 940318, ARPI indicated greater than twelve steps deviation from its associated group counter. Cause was rod position indication varies w/temperature. Corrective action: ARPIS were adjusted. W/940411 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

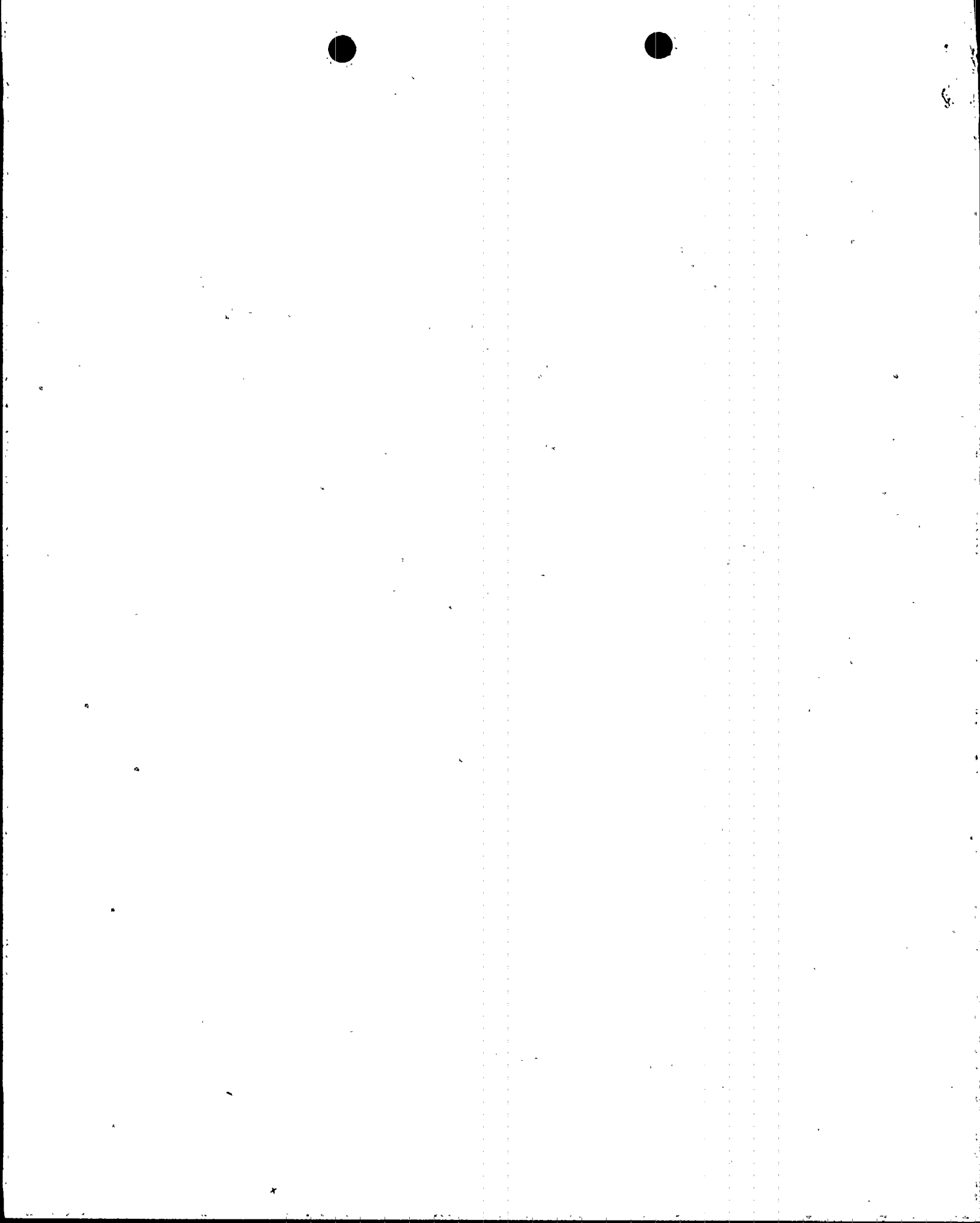
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INTERNAL:	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	NRR/DE/EELB	1 1
	NRR/DE/EMEB	1 1	NRR/DORS/OEAB	1 1
	NRR/DRCH/HHFB	1 1	NRR/DRCH/HICB	1 1
	NRR/DRCH/HOLB	1 1	NRR/DRIL/RPEB	1 1
	NRR/DRSS/PRPB	2 2	NRR/DSSA/SPLB	1 1
	NRR/DSSA/SRXB	1 1	REG FILE 02	1 1
	RES/DSIR/EIB	1 1	RGN2 FILE 01	1 1
EXTERNAL:	EG&G BRYCE, J.H	2 2	L ST LOBBY WARD	1 1
	NRC PDR	1 1	NSIC MURPHY, G.A.	1 1
	NSIC POORE, W.	1 1	NUDOCS FULL TXT	1 1

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FPL

APR 11 1994

L-94-075  
10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Unit 4  
Docket No. 50-251  
Reportable Event: 94-003-00  
Four Analog Rod Position Indicators Greater Than Twelve  
Steps From Group Step Counter; Technical Specification  
3.0.3 Entry

The attached Licensee Event Report 251/94-003-00 is being  
provided in accordance with 10 CFR 50.73. (a) (2) (i) (B).

If there are any questions, please contact us.

Very truly yours,

T. F. Plunkett  
Vice President  
Turkey Point Plant

TFP/CLM/cm

enclosure

copies:

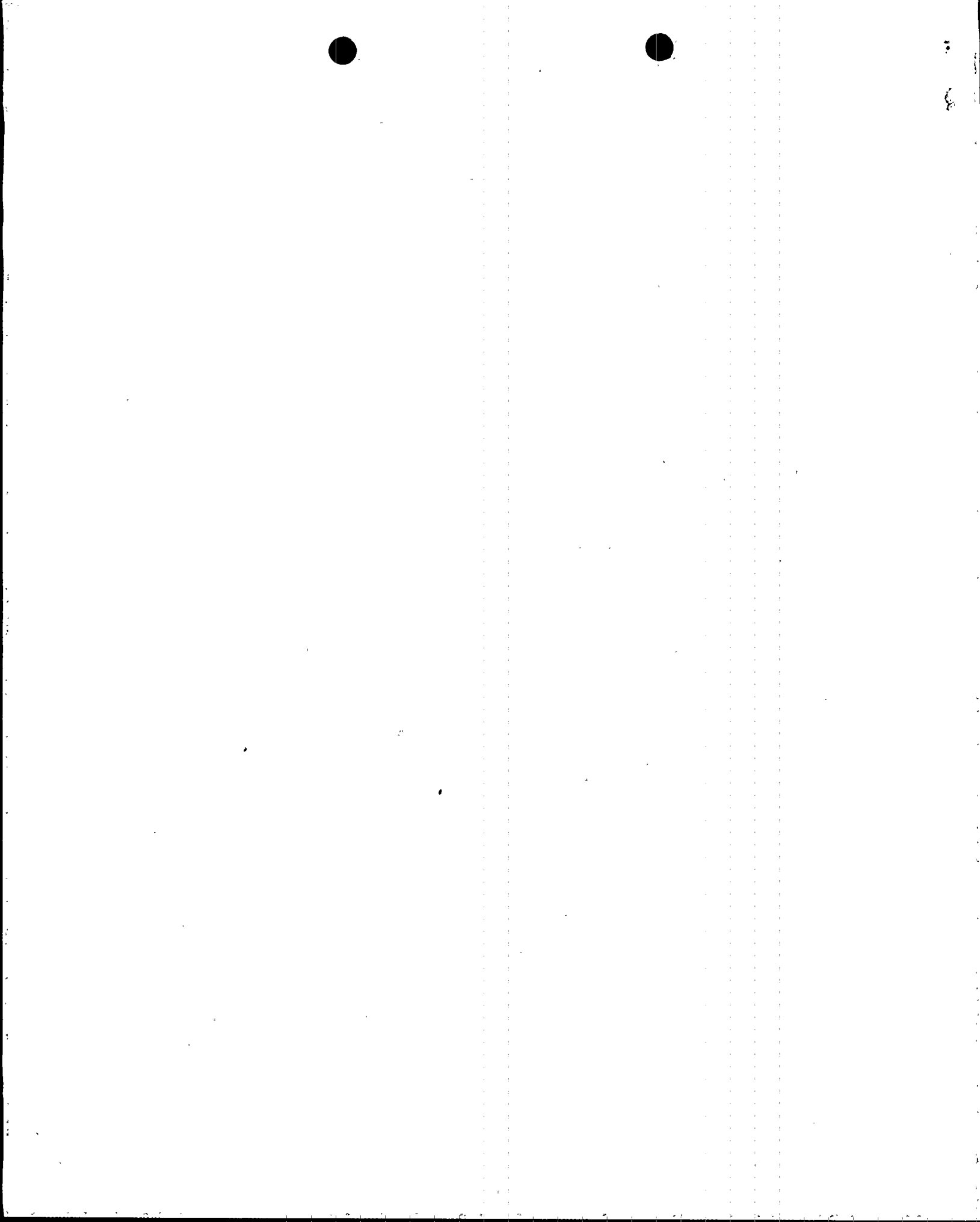
S. D. Ebnetter, Regional Administrator, Region II, USNRC  
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point

180070

9404190005 940411  
PDR ADDCK 05000251  
S PDR

an FPL Group company

JE22'



# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

TURKEY POINT UNIT 4

DOCKET NUMBER (2)

05000251

PAGE (3)

1 OF 3

TITLE (4)

FOUR ANALOG ROD POSITION INDICATORS GREATER THAN TWELVE STEPS DEVIATION FROM GROUP STEP COUNTERS; ENTRY INTO TECHNICAL SPECIFICATION 3.0.3

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)

03

18

94

94

003

00

04

XX

94

OPERATING MODE (9)

1

POWER LEVEL (10)

88%

10 CFR 50.73(a)(2)(i)(B)

LICENSEE CONTACT FOR THIS LER (12)

C. L. Mowrey, Licensing OEF Engineer/Analyst

TELEPHONE NUMBER

305-246-6204

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 ☐

YES ☐

EXPECTED  
SUBMISSION  
DATE (15)

MONTH

DAY

YEAR

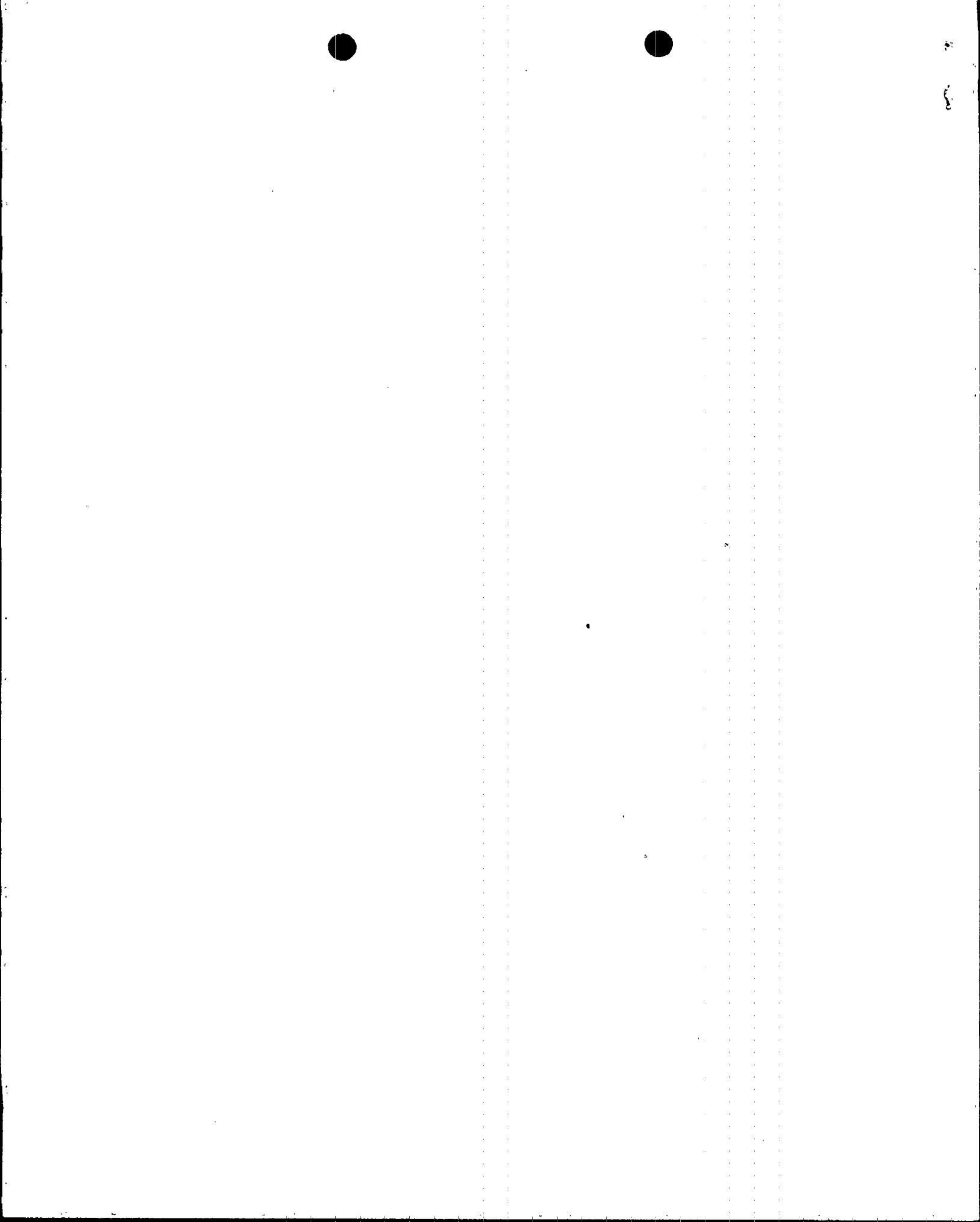
(if yes, complete EXPECTED SUBMISSION DATE)

ABSTRACT (16)

On March 18, 1994, with Unit 4 at about 88% rated power, Analog Rod Position Indication (ARPI) for first one rod, then three more rods, all in Bank D, indicated more than twelve steps deviation from their associated group step counters. Incore flux maps verified that all Bank D rods were at 190 steps. ARPIs were adjusted to read 190 steps. The rod position indication varies with temperature, 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. Since there is no Technical Specification action statement for more than one inoperable ARPI in a bank, Unit 4 entered Technical Specification 3.0.3.

A task team investigating an earlier similar event (LER 251-92-001), confirmed the cause, and identified and corrected several contributing conditions. The team was not able to arrive at a cost-effective modification to completely eliminate the problem, but investigation for other contributing conditions continues.

The ARPIs for the four rods were adjusted to read 190 steps, and Technical Specification 3.0.3 was exited.



# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	94-003-00	02 OF 03

## I. DESCRIPTION OF THE EVENT

On March 18, 1994, Turkey Point Unit 4 was raising power toward 100%, following a maintenance outage. At about 1505, with power at approximately 88% and Bank D group step counters indicating 190 steps, Analog Rod Position Indication (ARPI) [EIIS:IU] for Rod D-8 indicated greater than twelve steps deviation from its associated group step counter. Technical Specification 3.1.3.1 Action Statement was entered, requiring verification of the rod location by flux map. Reactor Engineering was notified and at about 1600 completed flux maps which verified that all Bank D rods were at 190 steps. Maintenance personnel were called to adjust ARPI for Rod D-8 to read 190 steps.

Before the adjustment was made, at about 1615, ARPIS for rods M-8, H-4, and H-12, all in Bank D, also drifted to greater than twelve steps deviation from their associated group step counters (still at 190 steps). Because all Bank D rods had just been verified to be at 190 steps, ARPIS for all four rods were declared inoperable. Since there is no Technical Specification action statement for more than one inoperable ARPI in a bank, Unit 4 entered Technical Specification 3.0.3. By 1625, all four ARPIS had been adjusted to 190 steps, and Unit 4 exited Technical Specification 3.0.3. The NRCOC was notified at 1700.

## II. CAUSE OF THE EVENT

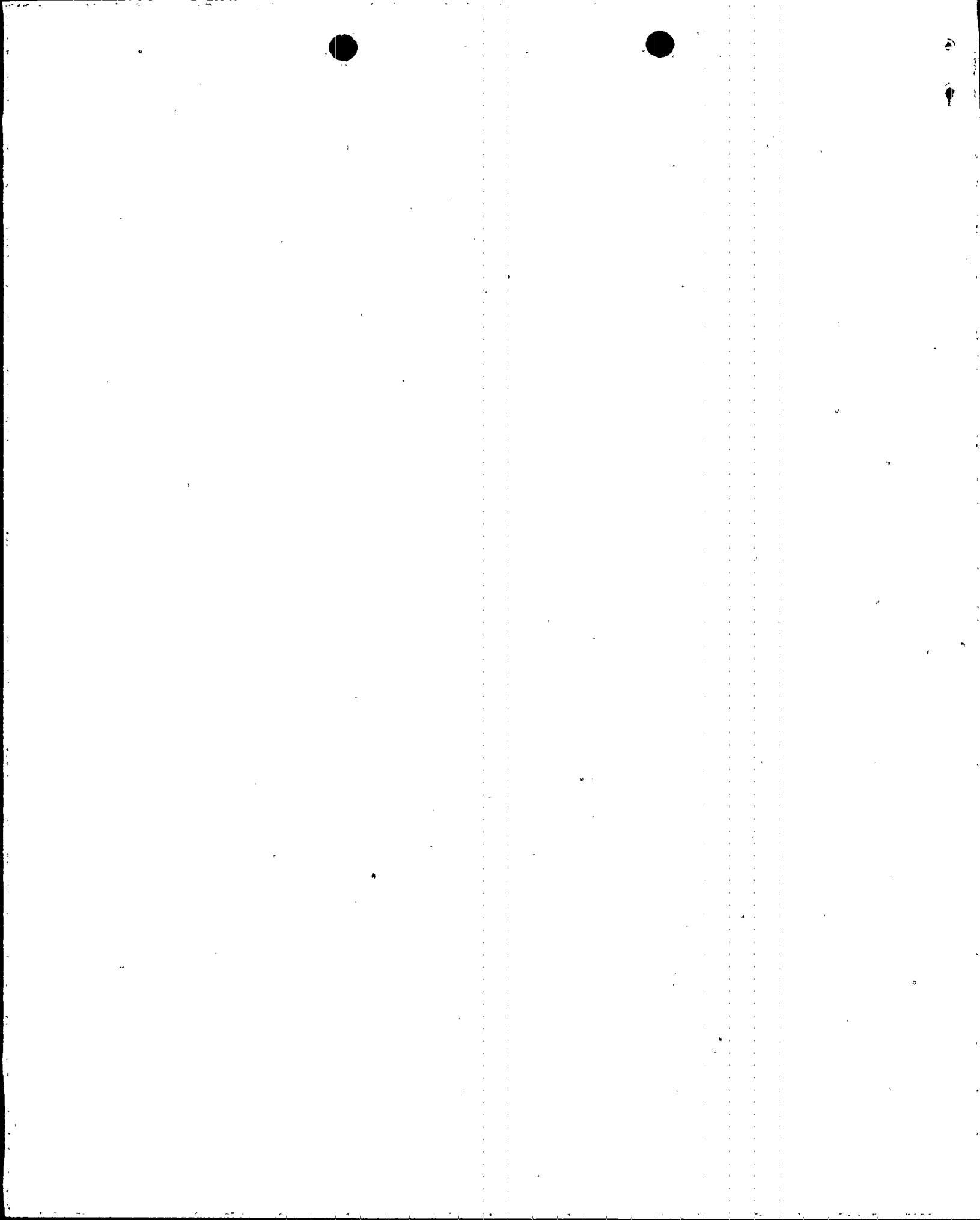
The root cause of this event is that rod position indication varies with temperature. This temperature variation was first observed at Turkey Point in 1972. Westinghouse stated that temperature variations in indications are inherent to the design of the system. A special test was conducted at Turkey 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 3.1.3.2.

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, the investigations continue at Turkey Point and at another facility with the same design. 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.

## 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. 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.





LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	94-003-00	03 OF 03

IV. CORRECTIVE ACTIONS

1. Incore Flux maps were performed and determined the rods to be aligned properly.
2. In accordance with procedures 4-PMI-028.3 and MI-028.30, the ARPIS were adjusted to indicate properly.

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 February, 1992, and was reported in LER 251-92-001.

