

CATEGORY 1

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SUBJECT: Forwards response to NRC Bulletin 96-001, "Control Rod
Insertion Problems."

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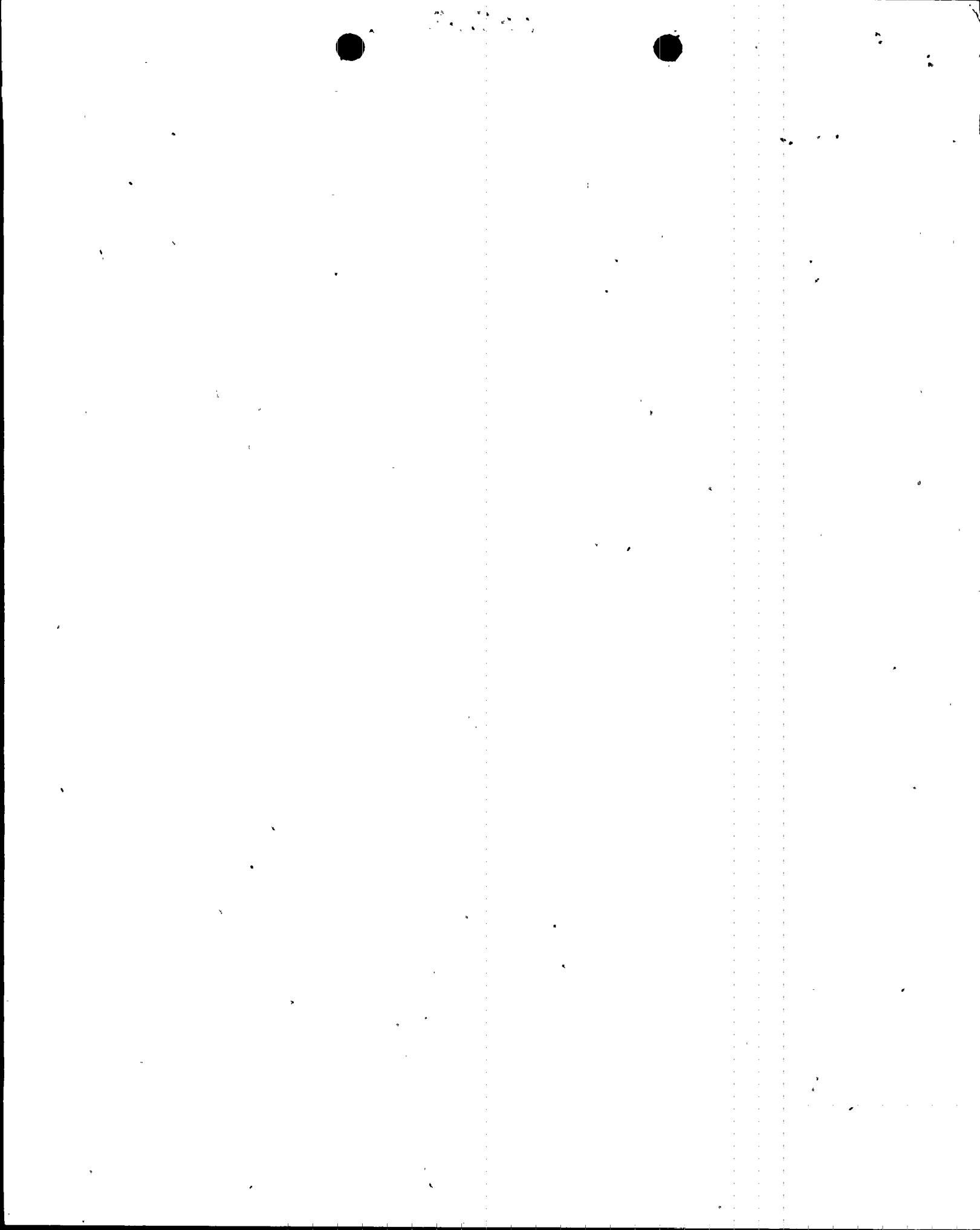
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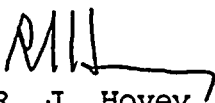
Gentlemen:

Re: Turkey Point Unit 4
Docket No. 50-251
NRC Bulletin 96-01
CONTROL ROD INSERTION PROBLEMS

NRC Bulletin 96-01, "CONTROL ROD INSERTION PROBLEMS", issued March 8, 1996, requested licensees take specific actions and provide information to the NRC. In accordance with the bulletin, Florida Power and Light Company provides the attached response relative to the Turkey Point Plant Unit 4 Cycle 16 Refueling Outage.

Should there be any questions, please contact us.

Very truly yours,


R. J. Hovey
Vice President
Turkey Point Plant

JAH

Attachment

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

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STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

R. J. Hovey being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

MIL
R. J. Hovey

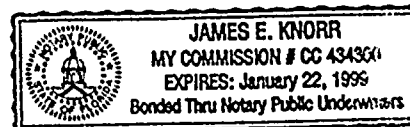
Subscribed and sworn to before me this

1st day of May, 1996.

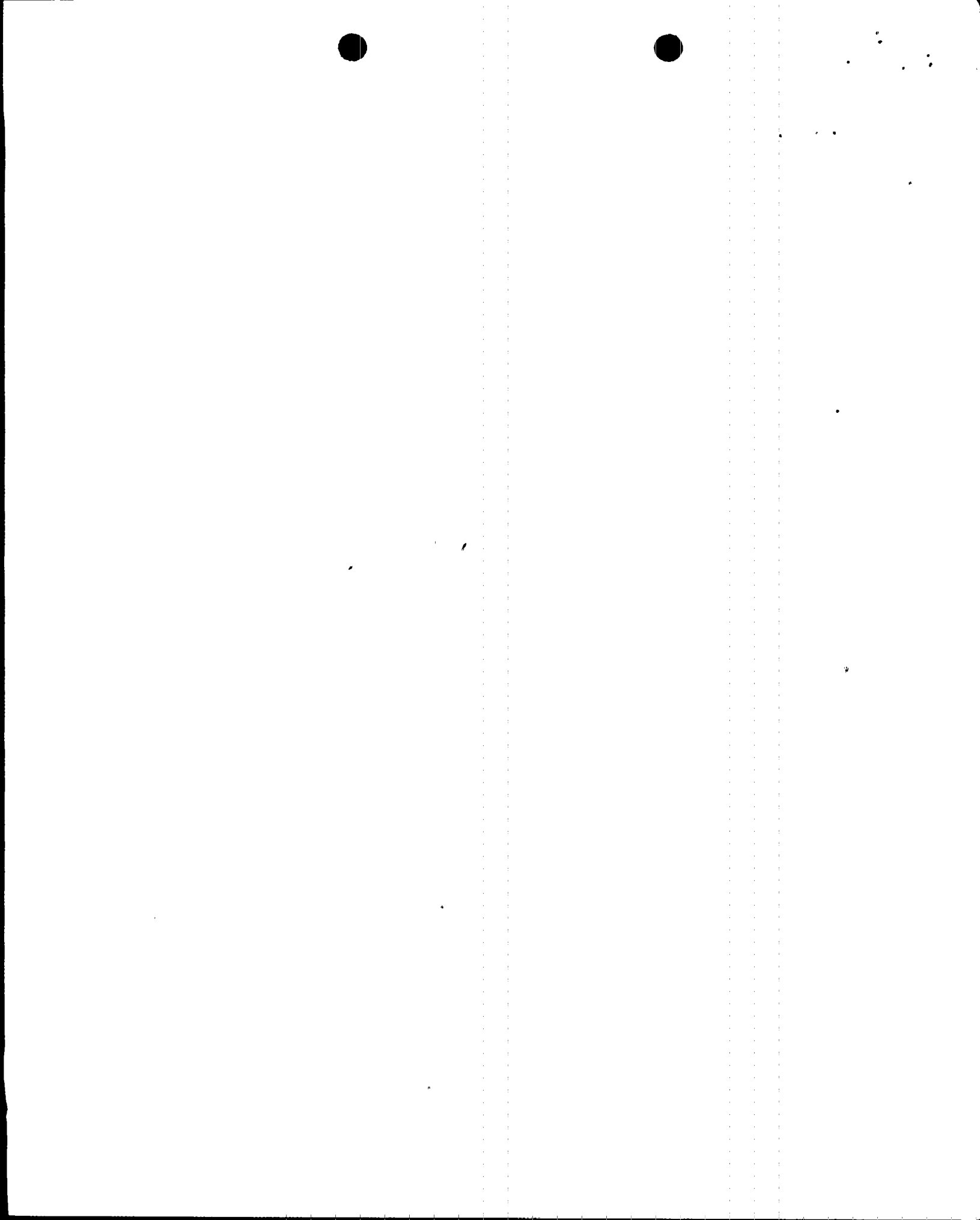
James E. Knorr
James E. Knorr
Name of Notary Public (Type or Print)

NOTARY PUBLIC, in and for the County of
Dade, State of Florida

My Commission expires 1-22-99
Commission No. CC 434300



R. J. Hovey is personally known to me.



BACKGROUND

On March 8, 1996, the NRC issued Bulletin 96-01, CONTROL ROD INSERTION PROBLEMS. This bulletin was intended to alert licensees to problems encountered at South Texas and Wolf Creek during which control rods failed to completely insert upon a scram signal. In addition, the bulletin requires licensees to assess the operability of control rods, particularly in high burnup assemblies.

The bulletin requested licensees to perform four actions to ensure that the required shutdown margin is maintained during a reactor trip. Action (3) of Bulletin 96-01 requested licensees to measure and evaluate at each outage of sufficient duration during calendar year 1996 (end of cycle, maintenance, etc.), the control rod drop times and rod recoil data for all control rods. If appropriate plant conditions exist where the vessel head is removed, measure and evaluate drag forces for all rodged fuel assemblies. The bulletin also states that:

- a. Rods failing to meet the rod drop time in Technical Specifications shall be deemed inoperable.
- b. Rods failing to bottom or exhibiting high drag forces shall require prompt corrective action in accordance with Appendix B to Part 50 of Title 10 of the Code of the Federal Regulations (10 CFR Part 50).

The bulletin requires that within 30 days after completing Requested Action (3) for each outage, a report that summarizes the data and that documents the results obtained be submitted to the NRC. In response to this commitment, the enclosed information is provided.

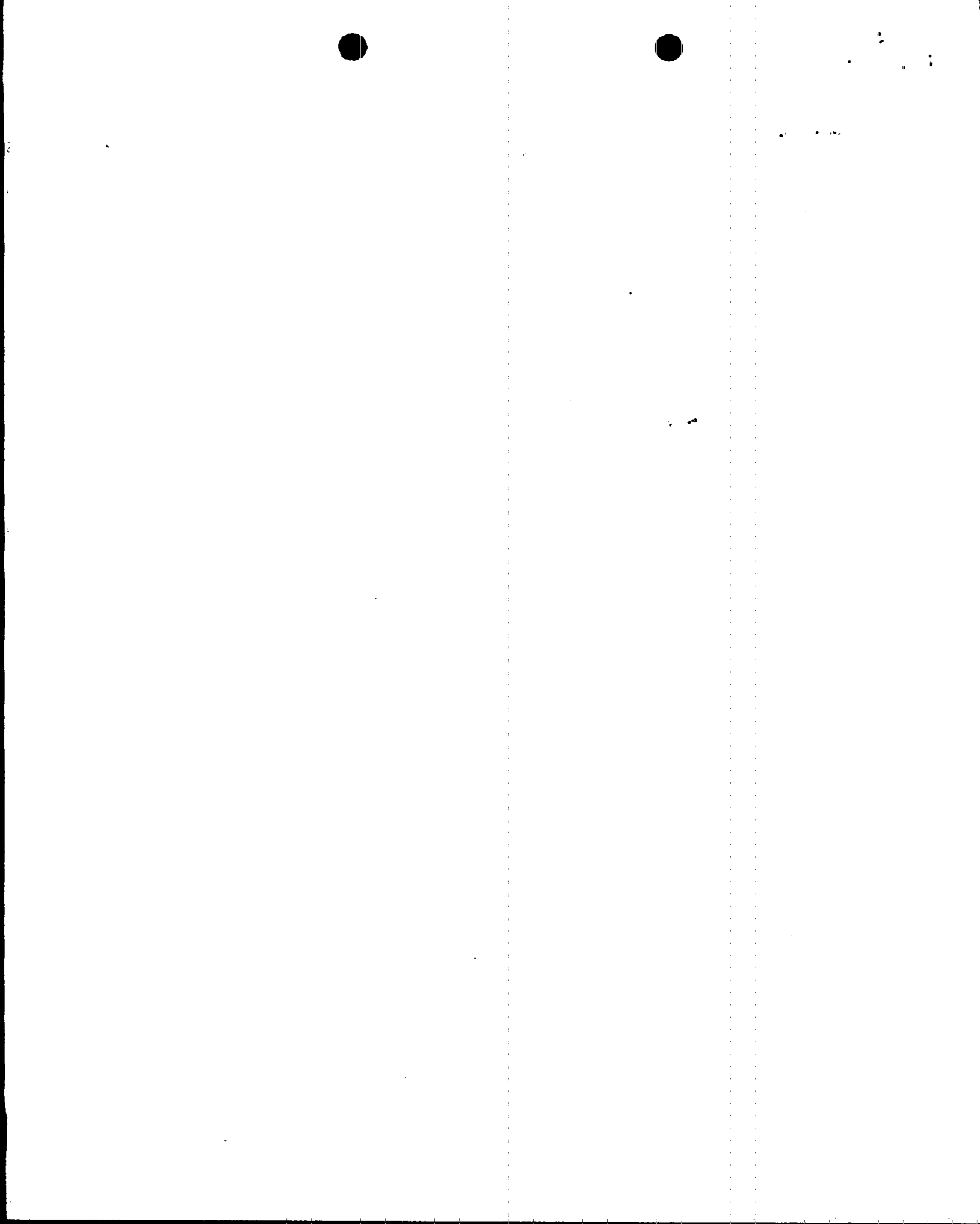
This report will highlight the following evolutions:

- o Unit 4 End-of-Cycle (EOC) -15 Manual Reactor Trip,
- o Unit 4 EOC-15 Rod Control Cluster Assembly (RCCA) Drag Test, and
- o Unit 4 Beginning-of-Cycle (BOC) -16 Hot Rod Drop Tests.

Each evolution will be discussed in a separate section.

UNIT 4 END-OF-CYCLE 15 MANUAL REACTOR TRIP

On March 4, 1996, Turkey Point Unit 4 commenced a refueling outage. Prior to the issuance of NRC Bulletin 96-01, an EOC-15 manual reactor trip was performed in accordance with Westinghouse Owners Group recommendations to assist in the root cause investigation. This trip was performed during the unit down-power prior to entering the Cycle 16 refueling outage. At the time the control rods were manually tripped, reactor power was at approximately 2%, control bank D rods were at 74 steps and control bank C rods were at 202 steps withdrawn. All Rod Bottom Lights energized, confirming that all RCCAs had reached the 20 step withdrawn position. All RPI's indicated 0 steps. Table 1 summarizes the core configuration and burnup history for the EOC-15 Manual Reactor Trip Test.



UNIT 4 END-OF-CYCLE 15 RCCA DRAG TEST

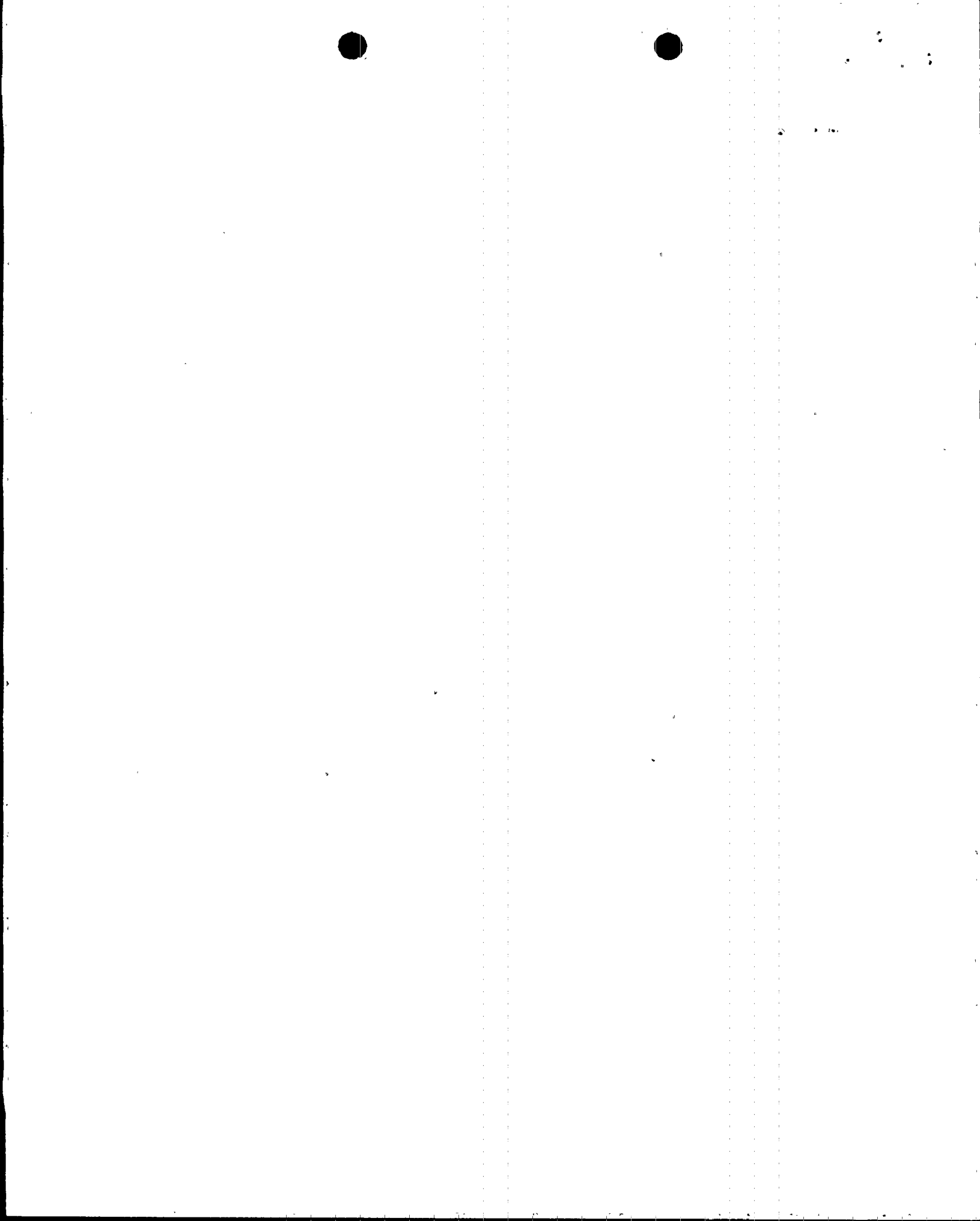
During the Unit 4 Cycle 15 refueling outage, FPL performed an RCCA Drag Test using the Control Rod Drive Mechanism (CRDM) latch and unlatch tool inside containment. Operating procedure OP-16900.1, Uncoupling Full Length Control Rods, was revised to include procedural steps to raise the combined weight (RCCA, drive shaft and latching tool) approximately 10 feet and monitor the load indicator to confirm there were no abrupt changes in the indicated weight. FPL drag tested all 45 RCCAs in Turkey Point Unit 4. Table 1 of this attachment provides the EOC burnups which range from 26,000 - 50,800 MWD/MTU. FPL Letter L-96-082, the initial response to NRCB 96-01, also transmitted the End-of-Cycle burnups for the 45 fuel assemblies tested during the RCCA Drag Test.

The methods of the test were independently verified by Westinghouse (nuclear fuel supplier) and verified to be consistent with similar methods used to collect data at Wolf Creek.

A summary of the testing results are as follows:

- o The data showed that all fuel assemblies met the dashpot criteria as specified in Westinghouse's Inspection Specification.
- o There were a total of nine fuel assemblies that did not meet the criteria specified in Westinghouse's Inspection Specification for the upper guide thimbles. Of these nine assemblies, only five fuel assemblies clearly exceeded the 40 pound guideline, while the remaining four assemblies were classified as "marginal". Both FPL and Westinghouse confirmed the fact that in the "marginal" range, it is difficult to classify fuel assemblies in this range of drag because of the accuracy of the traces and measurement technique. Westinghouse indicated that 15x15 fuel assemblies normally indicate a higher drag than 17x17 fuel assemblies. The type of "marginal" drag load measured has been experienced at other 15x15 plants with no insertion anomalies observed.
- o The five fuel assemblies that exceeded the upper guide thimble inspection criteria were discharged at the End-of-Cycle 15. All of the RCCAs in these fuel assemblies fully inserted following the EOC-15 manual reactor trip. Based upon Westinghouse's review of the RCCA Drag Test data, Westinghouse concluded that the behavior of the assemblies at Turkey Point is not similar to that of the anomalous assemblies at Wolf Creek. Therefore, all the RCCAs continue to be operable and no corrective action is required.
- o The test data does not clearly indicate an increase in drag force with burnup.

Based on the test results, both Westinghouse and FPL concluded that there is no concern for RCCA insertion anomalies at Turkey Point.



UNIT 4 BEGINNING-OF-CYCLE 16 HOT ROD DROP TESTS

The bulletin requests that licensees measure and evaluate the control rod drop times and recoil data for all control rods, at each outage of sufficient duration during calendar year 1996. For Turkey Point, the Unit 4 Cycle 16 refueling outage represents the only scheduled refueling outage for 1996. On April 4 and 5, 1996, FPL performed Hot Rod Drop Tests. The results of the Rod Drop Tests are provided in the attached Figure 1 for Turkey Point Unit 4 Cycle 16. Turkey Point Units 3 and 4 Technical Specification 3.1.3.4 requires that the individual full-length (shutdown and control) rod drop time from the fully withdrawn position shall be less than or equal to 2.4 seconds from beginning of decay of stationary gripper coil voltage to dashpot entry. All RCCAs met the Technical Specification requirements.

In addition to the rod drop times, FPL reviewed the rod recoil data for all control rods. Of the 45 RCCAs tested, 43 RCCAs indicated some rod recoil. RCCA R59 located in core location M-6 and RCCA R77 located in core location N-9 did not indicate rod recoil, however these RCCA's did insert within the Technical Specification rod drop time limit.

FPL also reviewed the rod recoil data from the Unit 4 BOC-15 Hot Rod Drop Test and confirmed that all but one RCCA indicated rod recoil. RCCA R77 located in core location M-6 did not indicate rod recoil, however this RCCA did not experience any problems during the operating cycles or during either the Cycle 15 or Cycle 16 Hot Rod Drop Tests.

SUMMARY

Based on the above information, Turkey Point has not observed any indication of a control rod insertion problem related to the anomalies observed at either Wolf Creek or South Texas.

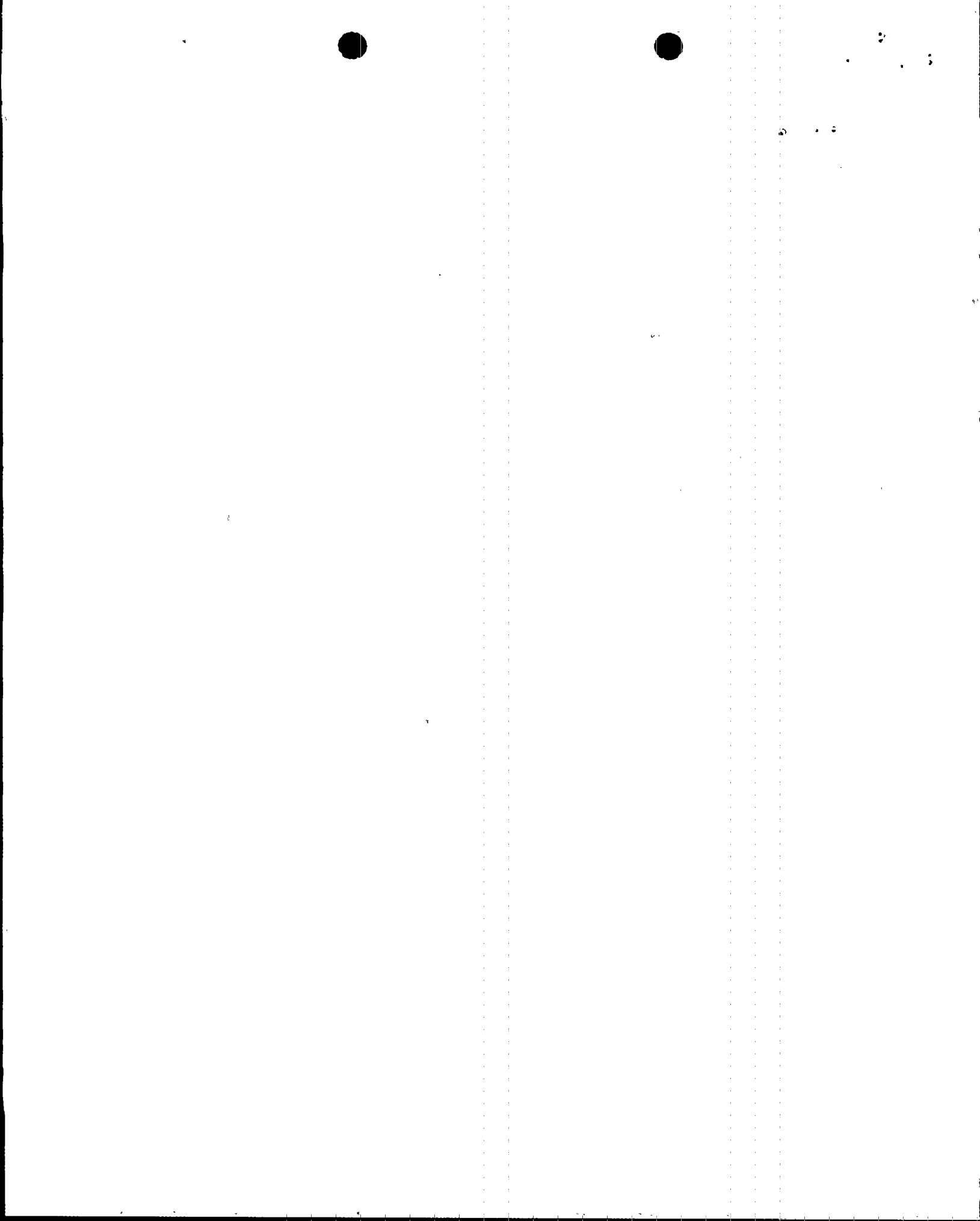


TABLE 1
Turkey Point Unit 4 Cycle 15

Core Location	Rod Bank	Type of Fuel	Current Burnup (as of 3/10/96) (MWD/MTU)	Approximate EOC Burnup (MWD/MTU)	Burnup at Trip Test (3/4/96) (MWD/MTU)	Observations
E-05	SBB	OFA/DRFA	In Refueling	43,800	43,800	Full Insertion
L-05	SBB	OFA/DRFA	In Refueling	43,800	43,800	Full Insertion
L-11	SBB	OFA/DRFA	In Refueling	43,800	43,800	Full Insertion
E-11	SBB	OFA/DRFA	In Refueling	43,800	43,800	Full Insertion
F-08	SBB	OFA/DRFA	In Refueling	34,300	34,300	Full Insertion
H-06	SBB	OFA/DRFA	In Refueling	34,300	34,300	Full Insertion
K-08	SBB	OFA/DRFA	In Refueling	34,300	34,300	Full Insertion
H-10	SBB	OFA/DRFA	In Refueling	34,300	34,300	Full Insertion
C-07	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
G-03	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
J-03	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
N-07	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
N-09	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
J-13	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
G-13	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
C-09	SBA	OFA/DRFA	In Refueling	31,600	31,600	Full Insertion
E-07	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
G-05	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
J-05	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
L-07	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
L-09	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
J-11	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
G-11	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
E-09	CBA	OFA/DRFA	In Refueling	42,000	42,000	Full Insertion
B-06	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
F-02	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
K-02	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
P-06	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
P-10	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
K-14	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
F-14	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
B-10	CBB	OFA/DRFA	In Refueling	26,000	26,000	Full Insertion
D-06	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
F-04	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
K-04	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
M-06	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
M-10	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
K-12	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
F-12	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
D-10	CBC	OFA/DRFA	In Refueling	47,900	47,900	Full Insertion
D-08	CBD	OFA/DRFA	In Refueling	34,000	34,000	Full Insertion
H-04	CBD	OFA/DRFA	In Refueling	34,000	34,000	Full Insertion
M-08	CBD	OFA/DRFA	In Refueling	34,000	34,000	Full Insertion
H-12	CBD	OFA/DRFA	In Refueling	34,000	34,000	Full Insertion
H-08	CBD	OFA	In Refueling	50,800	50,800	Full Insertion

