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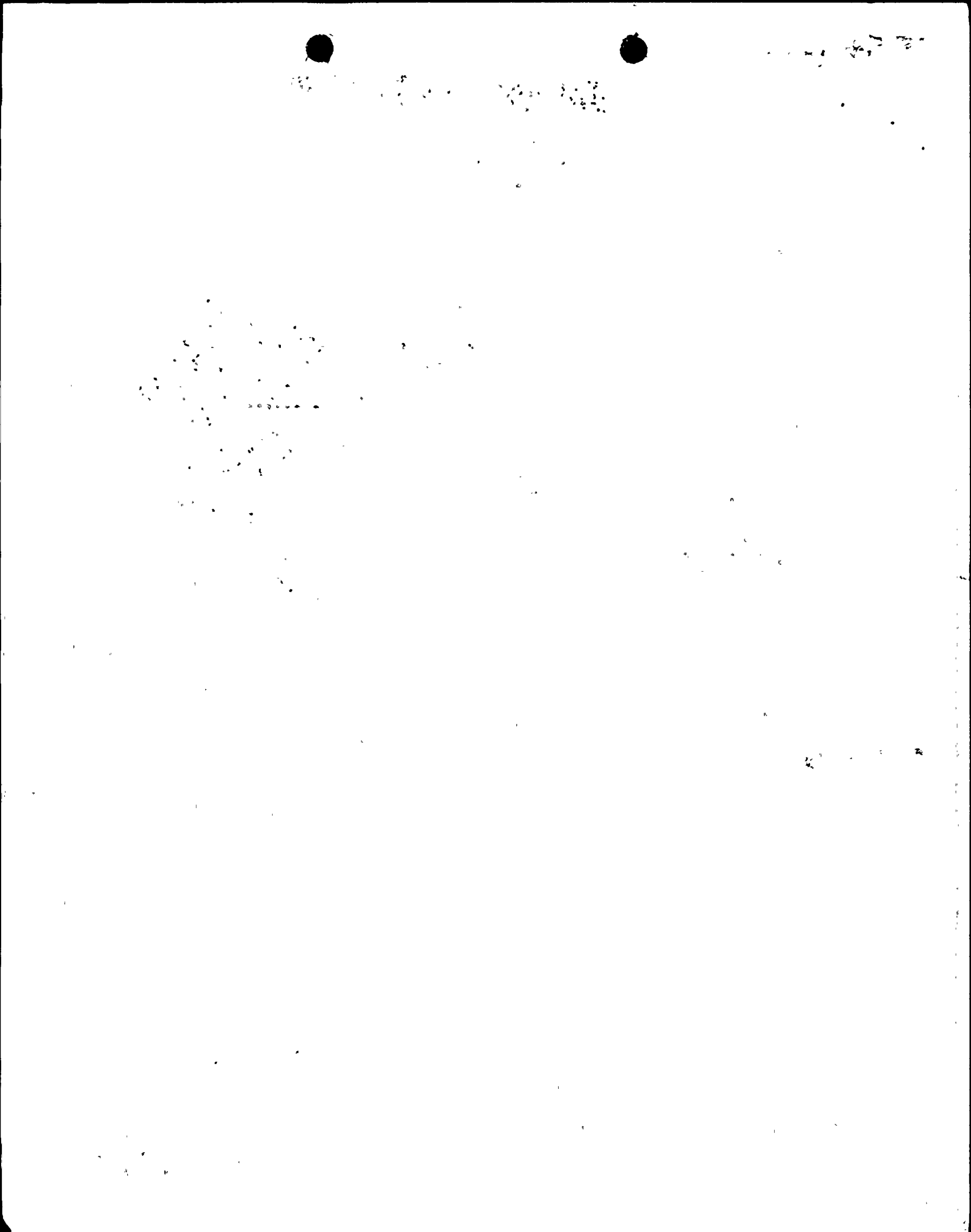
NRC FORM 195 (2-78)		U.S. NUCLEAR REGULATORY COMMISSION		DOCKET NUMBER 50-335
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DESCRIPTION	ENCLOSURE
	License NO. DPR-67 Appl for Amend: tech specs proposed change concerning repositioning CEA's about three inches different from their present position to minimize potential guide tube wear at a single location..... notorized 1/4/78.....
(2-P)	(3-P)+(4-P)
PLANT NAME: St. Lucie Unit No. 1 •RJL 1/6/78	40 ENCL

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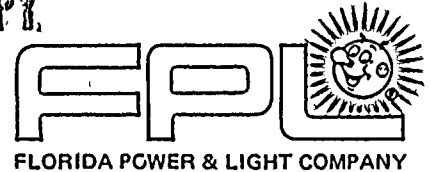
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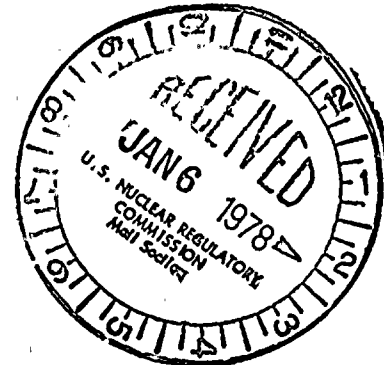


January 4, 1978
L-78-7

Director of Nuclear Reactor Regulation
ATTN: Mr. Victor Stello, Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Stello:

Re: St. Lucie Unit 1
Docket No. 50-335
Proposed Amendment to
Facility Operating License DPR-67



In accordance with 10 CFR 50.30, Florida Power & Light Company submits herewith three (3) signed originals and forth (40) copies of a request to amend Appendix A of Facility Operating License DPR-67. As described in our letter L-77-392 of December 27, 1977, Combustion Engineering (C-E) has recommended repositioning CEA's about three inches different from their present position to minimize potential guide tube wear at a single location. In order to support a regulating rod withdrawal position less than that presently required by Technical Specification 3.1.3.6, a Technical Specification amendment is necessary.

The proposed amendment is described below and shown on the accompanying Technical Specification pages bearing the date of this letter in the lower right hand corner.

Pages 3/4 1-23, 3/4 1-27, and 3/4 1-28

Specifications 3.1.3.2 (Part Length CEA Insertion Limits), 3.1.3.5 (Shutdown CEA Insertion Limit), and 3.1.3.6 (Regulating CEA Insertion Limits) are revised to allow the "fully withdrawn" CEA position to be anywhere within the range from the fully withdrawn mechanical limit to 3 inches less than their present withdrawal position. This will allow the long term "fully withdrawn" position of the end of the CEA to be varied over a small range thus minimizing guide tube wear at a single location.

To avoid affecting our compliance with other Specifications that refer to the fully withdrawn CEA position, we interpret the proposed amendment to mean that "fully withdrawn" will be at or above the new long term CEA position.

780060168

Mr. Victor Stello, Director
Division of Operating Reactors
Page Two

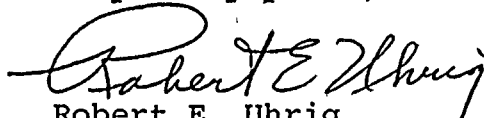
In addition, the Action statements of certain Specifications require immediate verification of full withdrawal, as indicated by the "Full Out" limit (Upper Electrical Limit light). However, when operating with CEA's repositioned, we will not have the UEL light. Should we be required to have the light to satisfy these Specifications, it will take a finite length of time to withdraw CEA's to the "Full Out" limit. It is our interpretation that immediate action to withdraw CEA's to the "Full Out" limit will meet the intent of the Action statements and will constitute compliance with the applicable Specifications. The CEA's will be in the "Full Out" position only until the problem leading to their withdrawal is resolved (within the time constraints of the Action statement).

In the interim, we have implemented weekly cycling of shutdown and regulating CEA's as required by your staff during a telephone conversation on December 23, 1977. Upon NRC approval and FPL implementation of the proposed amendment, weekly cycling will be discontinued.

In order to reposition part length CEA's, it will be necessary to energize their drive mechanisms. However, since Technical Specification 4.1.3.2.b implicitly requires that electric power be disconnected from the part length CEA drive mechanisms, we request temporary suspension of this surveillance requirement to support repositioning part length CEA's. The suspension need be effective only during brief periods of part length CEA movement since electric power can be disconnected again after repositioning. Without suspension of Technical Specification 4.1.3.2.b, we would have to wait until the next shutdown to reposition part length rods.

The proposed amendment has been reviewed by the St. Lucie Facility Review Group and the Florida Power & Light Company Nuclear Review Board. They have concluded that it does not involve an unreviewed safety question. A safety evaluation is attached. Additional information is contained in the CEA GUIDE TUBE WEAR REPORT forwarded by Combustion Engineering, Inc. to your office on December 23, 1977.

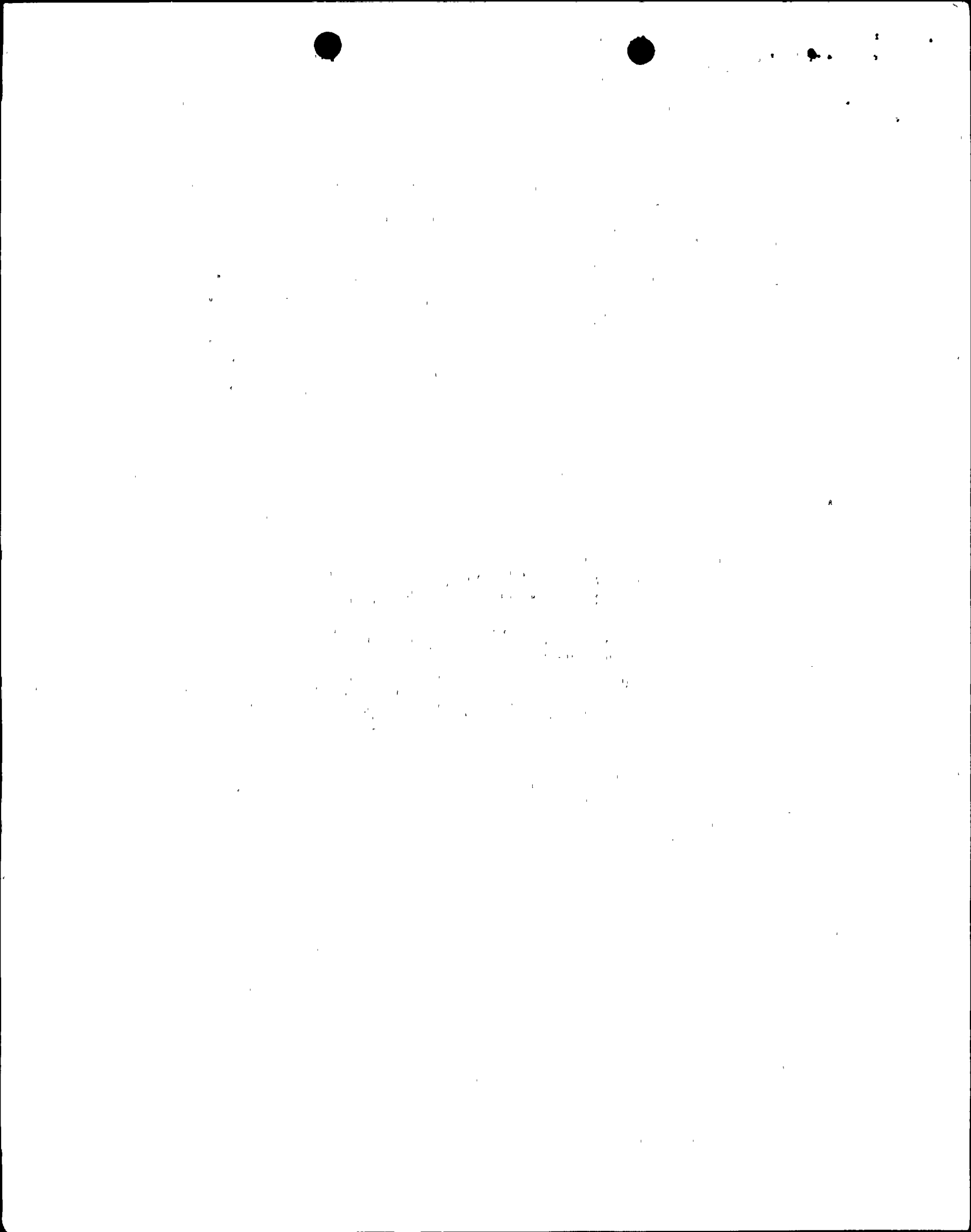
Very truly yours,


Robert E. Uhrig
Vice President

REU/MAS/sl

Attachment

cc: Mr. James P. O'Reilly, Region II
Robert Lowenstein, Esquire
Edward Reeves



REACTIVITY CONTROL SYSTEMS

PART LENGTH CEA INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.2 All part length CEAs shall be withdrawn to at least 129.0 inches.

APPLICABILITY: MODES 1* and 2*.

ACTION:

With a maximum of one PLCEA withdrawn to less than 129.0 inches, either:

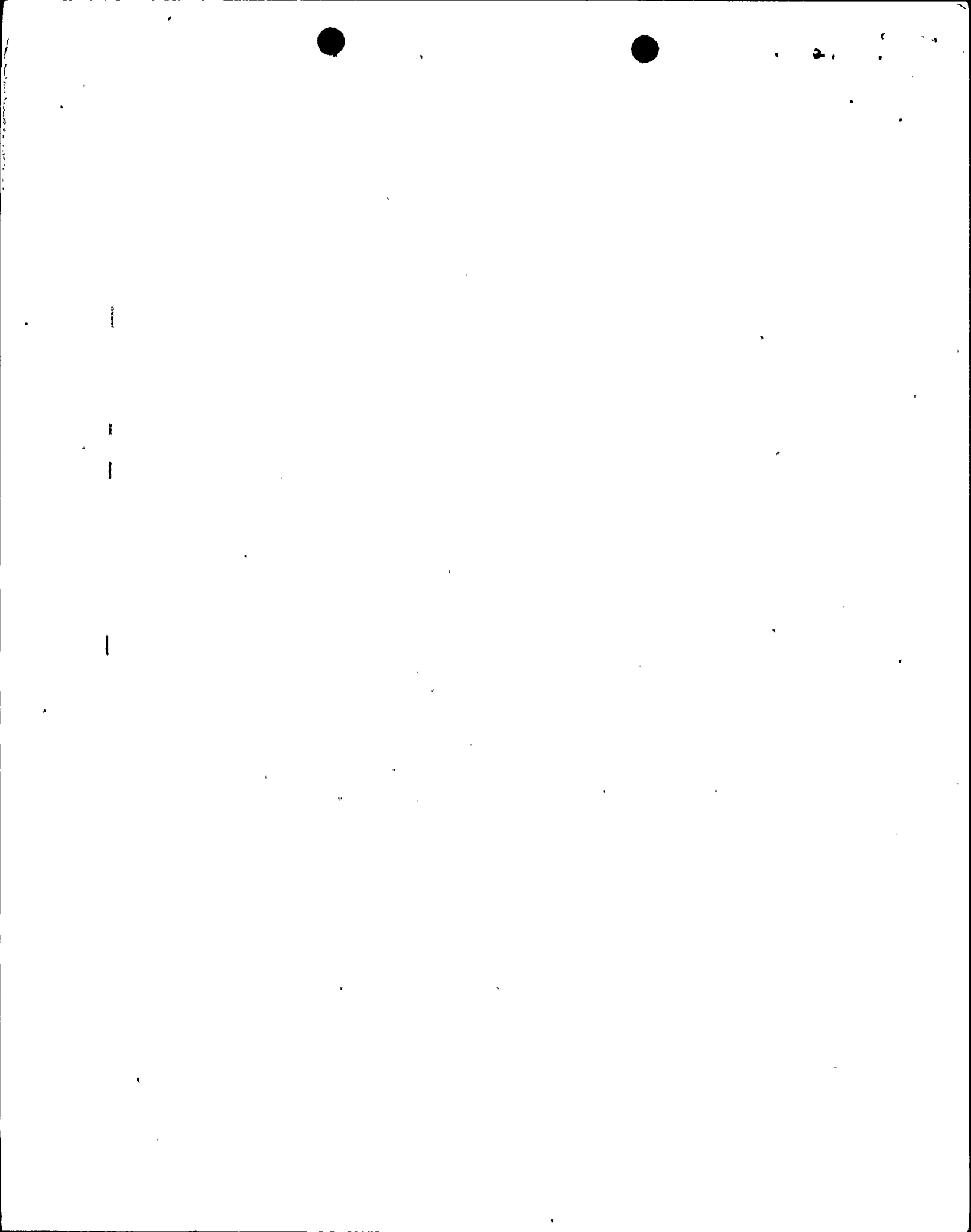
- a. Withdraw the PLCEA to at least 129.0 inches within one hour, or
- b. Be in HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.2 Each part length CEA shall be determined withdrawn to at least 129.0 inches by:

- a. Verifying the positions of the PLCEAs prior to increasing THERMAL POWER above 5% of RATED THERMAL POWER, and
- b. Verifying, at least once per 31 days, that electric power has been disconnected from its drive mechanism by physical removal of a breaker from the circuit.

* See Special Test Exception 3.10.2.



REACTIVITY CONTROL SYSTEMS

SHUTDOWN CEA INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown CEAs shall be withdrawn to at least 129.0inches.

APPLICABILITY: MODES 1 and 2*#.

ACTION:

With a maximum of one shutdown CEA withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, to less than 129.0inches, within one hour either:

- a. Withdraw the CEA to at least 129.0inches, or
- b. Declare the CEA inoperable and apply Specification 3.1.3.1.

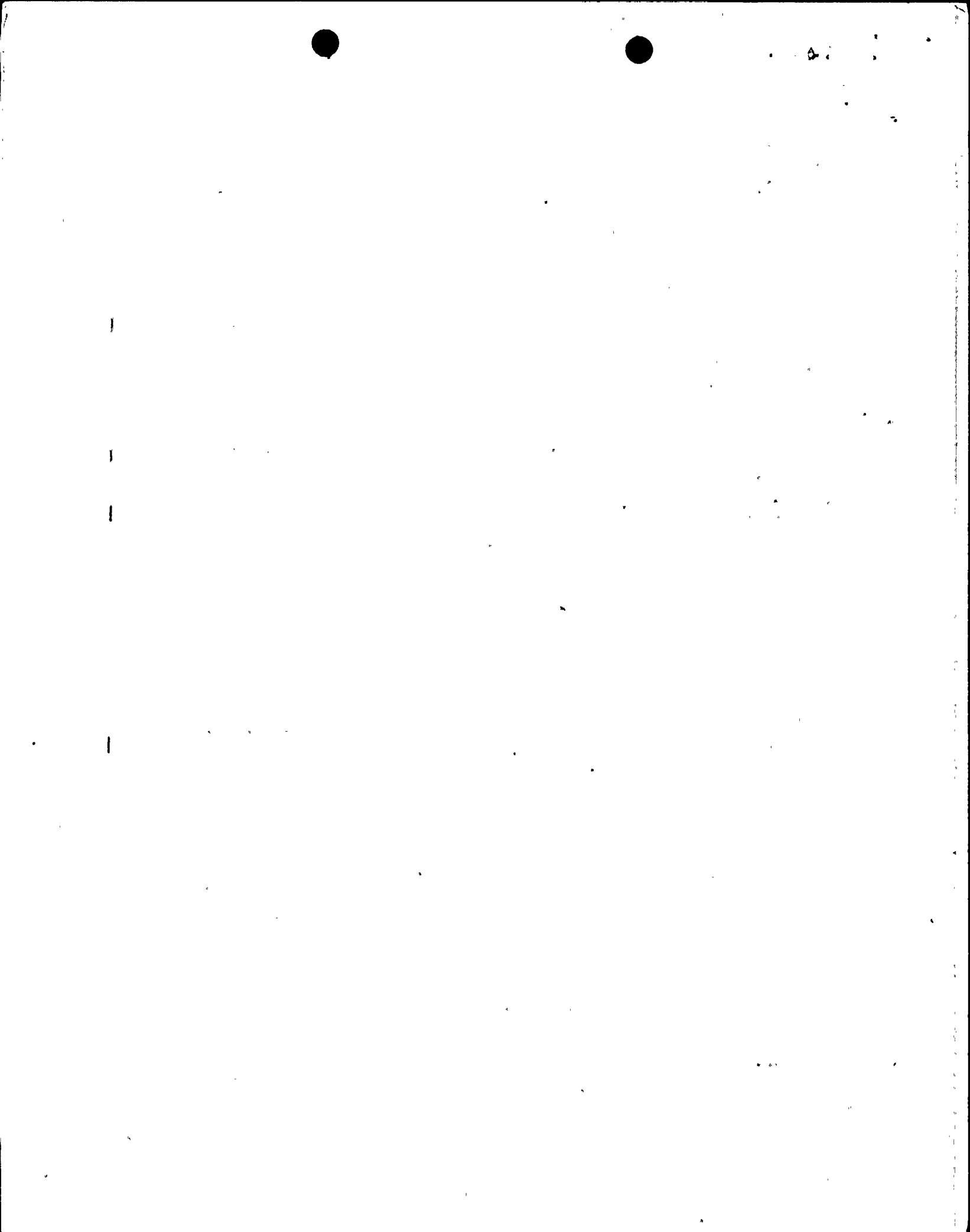
SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown CEA shall be determined to be withdrawn to at least 129.0inches:

- a. Within 15 minutes prior to withdrawal of any CEAs in regulating groups during an approach to reactor criticality, and
- b. At least once per 12 hours thereafter.

* See Special Test Exception 3.10.2.

With $K_{eff} \geq 1.0$.



REACTIVITY CONTROL SYSTEMS

REGULATING CEA INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.6 The regulating CEA groups shall be limited to the withdrawal sequence and to the insertion limits shown on Figure 3.1-2. Regulating CEA's are considered to be fully withdrawn in accordance with Figure 3.1-2 when withdrawn to at least 129.0 inches; with CEA insertion between the Long Term Steady State Insertion Limits and the Power Dependent Insertion Limits restricted to:

- a. \leq 4 hours per 24 hour interval,
- b. \leq 5 Effective Full Power Days per 30 Effective Full Power Day interval, and
- c. \leq 14 Effective Full Power Days per calendar year.

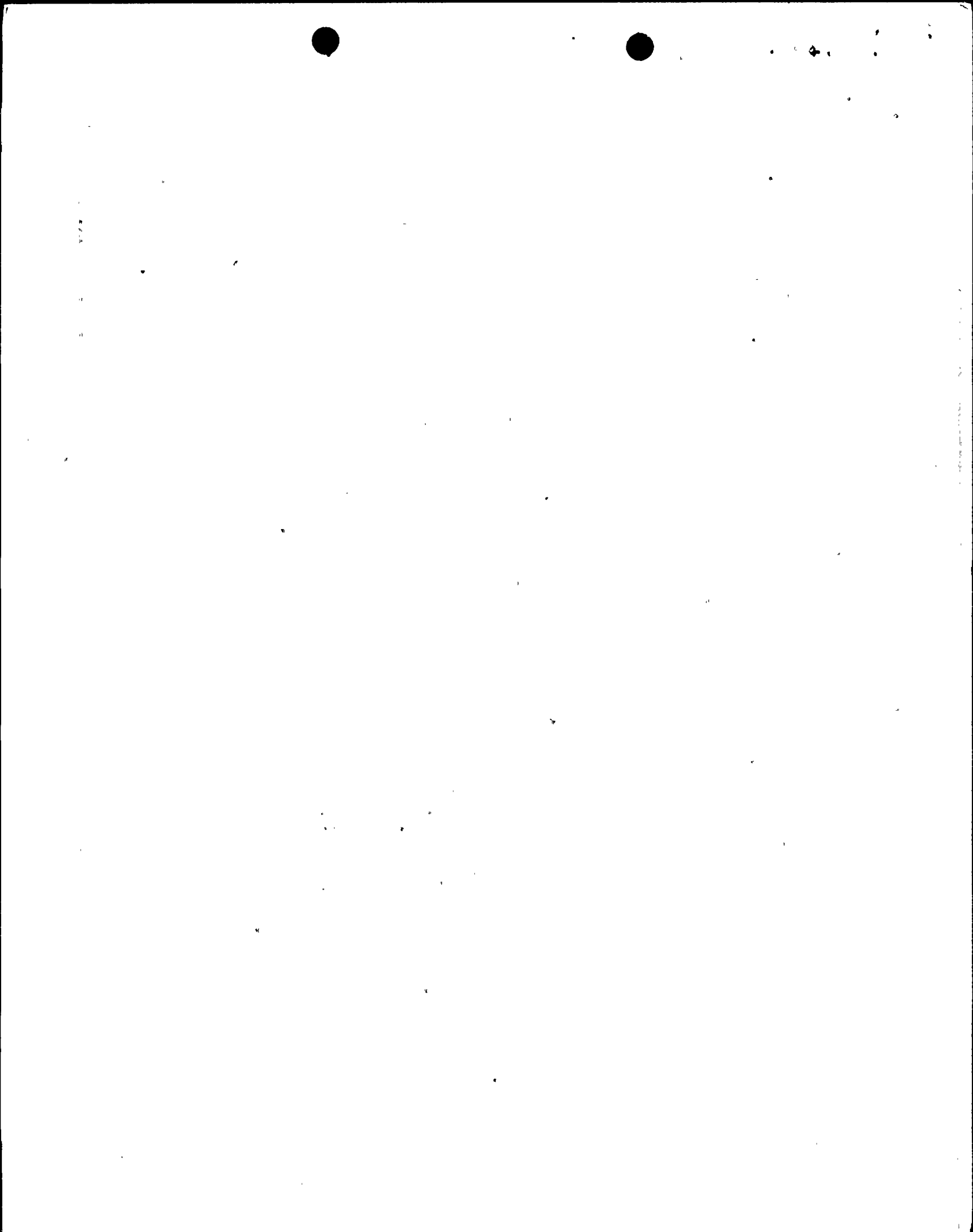
APPLICABILITY: MODES 1* and 2*#.

ACTION:

- a. With the regulating CEA groups inserted beyond the Power Dependent Insertion Limits, except for surveillance testing pursuant to Specification 4.1.3.1.2, within two hours either:
 1. Restore the regulating CEA groups to within the limits, or
 2. Reduce THERMAL POWER to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the CEA group position using the above figure.
- b. With the regulating CEA groups inserted between the Long Term Steady State Insertion Limits and the Power Dependent Insertion Limits for intervals $>$ 4 hours per 24 hour interval, except during operation pursuant to the provisions of ACTION items c. and d. of Specification 3.1.3.1, operation may proceed provided either:
 1. The Short Term Steady State Insertion Limits of Figure 3.1-2 are not exceeded, or
 2. Any subsequent increase in THERMAL POWER is restricted to \leq 5% of RATED THERMAL POWER per hour.

* See Special Test Exceptions 3.10.2 and 3.10.5.

With $K_{eff} \geq 1.0$.



ATTACHMENT

St. Lucie Unit 1
Docket No. 50-335
CEA Position

I. Introduction

An analysis has been made of the effects produced by withdrawing all CEA's to a position other than that considered to be fully withdrawn. Specifically the analysis evaluated the effect of lowering the "fully withdrawn" CEA position by three inches. Calculations were performed for a typical C-E reactor where the position of the CEA groups, which are normally fully withdrawn during full power operation, was systematically lowered three inches.

II. Shutdown Margin

The fully withdrawn position for the shutdown and regulating CEA groups is assumed to be at the top of the fuel when scram reactivity calculations are performed. The specification of a lower position will diminish the available scram reactivity worth to a degree determined by the specified position. The reactivity worth of the CEA groups near the top of the active fuel is low. Therefore, a significant reduction in the available scram worth is not expected. Calculations show that an insertion of all CEA's of three inches has a reactivity worth of about $0.035\% \Delta\rho$. This is well within the $0.3\% \Delta\rho$ normally allowed for CEA bite as defined in safety analysis reports. Reduction of shutdown margin due to the lowering of all CEA's three inches is acceptable because adequate excess margins are available. Shutdown margins consistent with the safety analysis are, therefore, assured.

III. Power Distributions

The effect on power distributions of lowering the CEA's three inches has also been examined by calculation. Small insertion of the CEA's (with the resulting small reactivity worth) cause very minor changes in the 3-D power distribution below the CEA's. Insertion of the CEA's of up to three inches causes a barely detectable change in the axial peaking factor. A change of approximately 0.5% was calculated for the nominal full power shape. This increased peak is well within the bounds of the power distributions used in the Reactor Protective System setpoints as described in, "C-E Local Power Density and DNB LSSS and LCO

Setpoint Methodology for Analog Protection System, " CENPD-199-P. It is therefore concluded that repositioning the CEA's three inches is acceptable.

IV. Implementation

To allow the increased operational flexibility previously defined, a minor modification to the Control Element Drive System (CEDS) will be implemented. Technical Specification Limiting Conditions for Operation define administrative controls on the insertion and withdrawal sequences for the control rods. To assist the operator in implementing these administrative controls, the CEDS and Metrascope contain an automatic inhibit function to limit certain rod motion sequences not permitted by technical specifications. A CEDS internal wire change is required to permit temporary bypass of the automatic inhibit functions which:

- a. Inhibits the Regulating Groups from being withdrawn in the group modes of control when the Shutdown CEAs are not at their fully withdrawn position.
- b. Inhibits the Shutdown Groups from being inserted in the Manual Group mode of control when the Regulating CEAs are not at their fully inserted position.

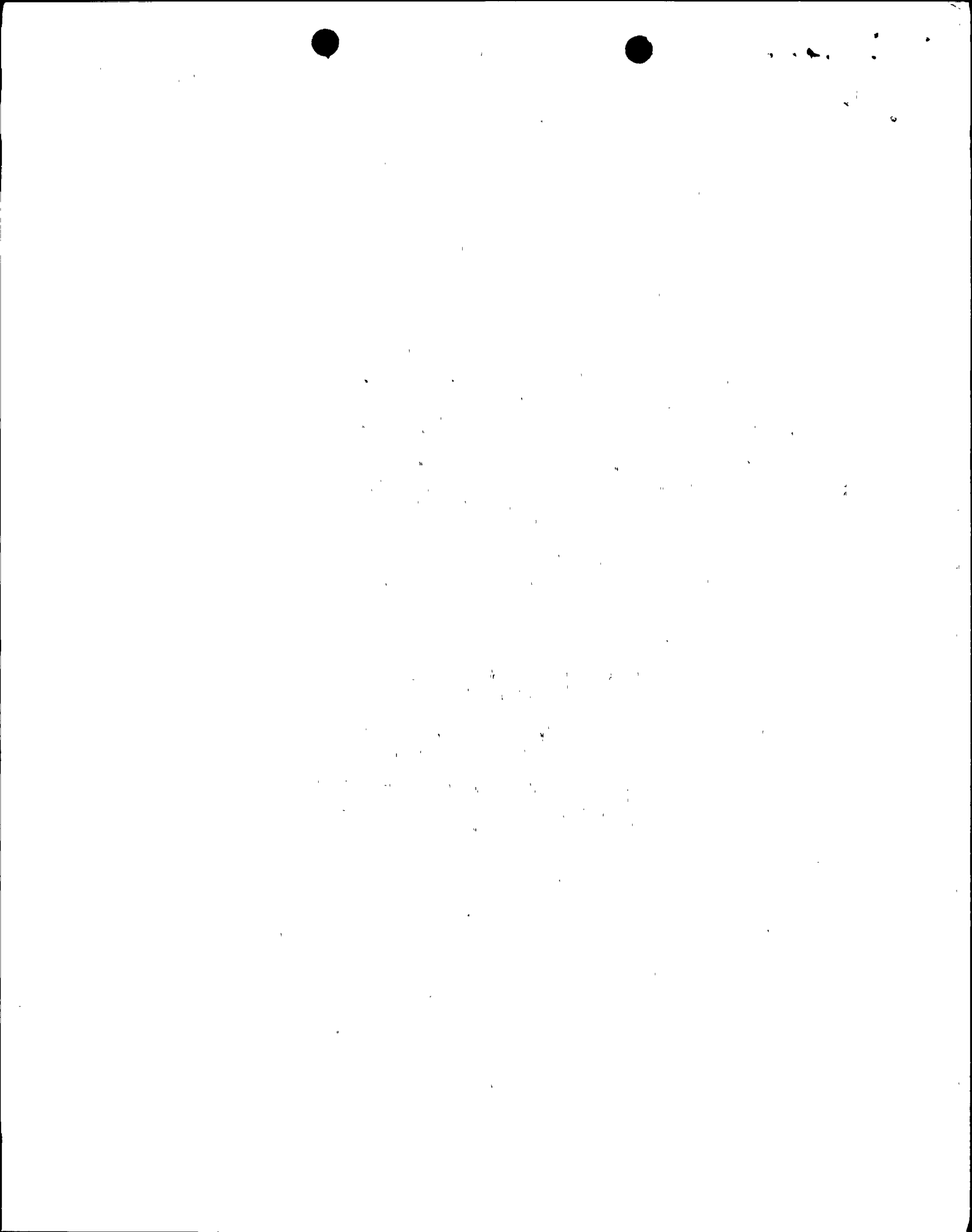
Separate independent inhibit logic is contained in the Metrascope rod block circuit to perform the above functions at selectable insertion limits. These Metrascope insertion limits will be selected to allow proposed CEA insertions while assuring that all automatic inhibit functions previously provided are maintained.

The Metrascope rod block functions for:

- a. Power Dependent Insertion Limits (PDIL)
- b. Single rod deviation, and
- c. Out-of-sequence insertion and withdrawal

are unaffected.

Implementation of these modifications is proceeding under the provisions of 10 CFR 50.59. Discussions with the vendor have indicated their belief that these modifications do not constitute an unreviewed safety question and will not affect any conclusions of the safety analyses.



V. Conclusions

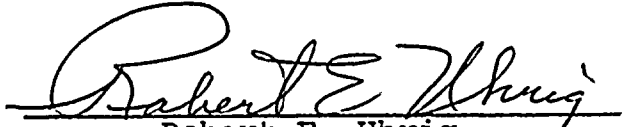
Based on the considerations described above, (1) the proposed change does not increase the probability or consequences of accidents or malfunctions of equipment important to safety and does not reduce the margin of safety as defined in the basis for any technical specification, therefore, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

Robert E. Uhrig, being first duly sworn, deposes and says:

That he is a Vice President of Florida Power & Light Company, the Licensee herein;

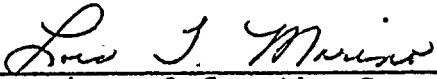
That he has executed the foregoing document; that the statements made in this said document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.



Robert E. Uhrig

Subscribed and sworn to before me this

4th day of January, 1978



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

My commission expires: _____
NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXPIRES JANUARY 24, 1981
BONDED TO THE STATE OF FLORIDA



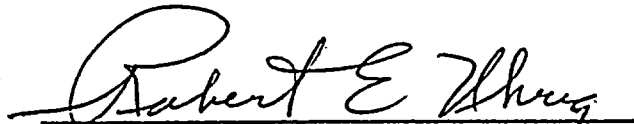


STATE OF FLORIDA)
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COUNTY OF DADE)

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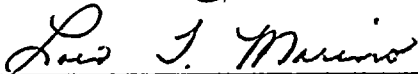
That he has executed the foregoing document; that the statements made in this said document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.



Robert E. Uhrig

Subscribed and sworn to before me this

4th day of January, 1978



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

My commission expires: NOTARY PUBLIC STATE OF FLORIDA at LARGE
MY COMMISSION EXPIRES AUGUST 24, 1981
BONDED THRU MAYNARD BONDING AGENCY



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