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CONFORMANCE TO NRR GENERIC LETTER 82-16 ST. LUCIE PLANT UNIT NOS 1 AND 2

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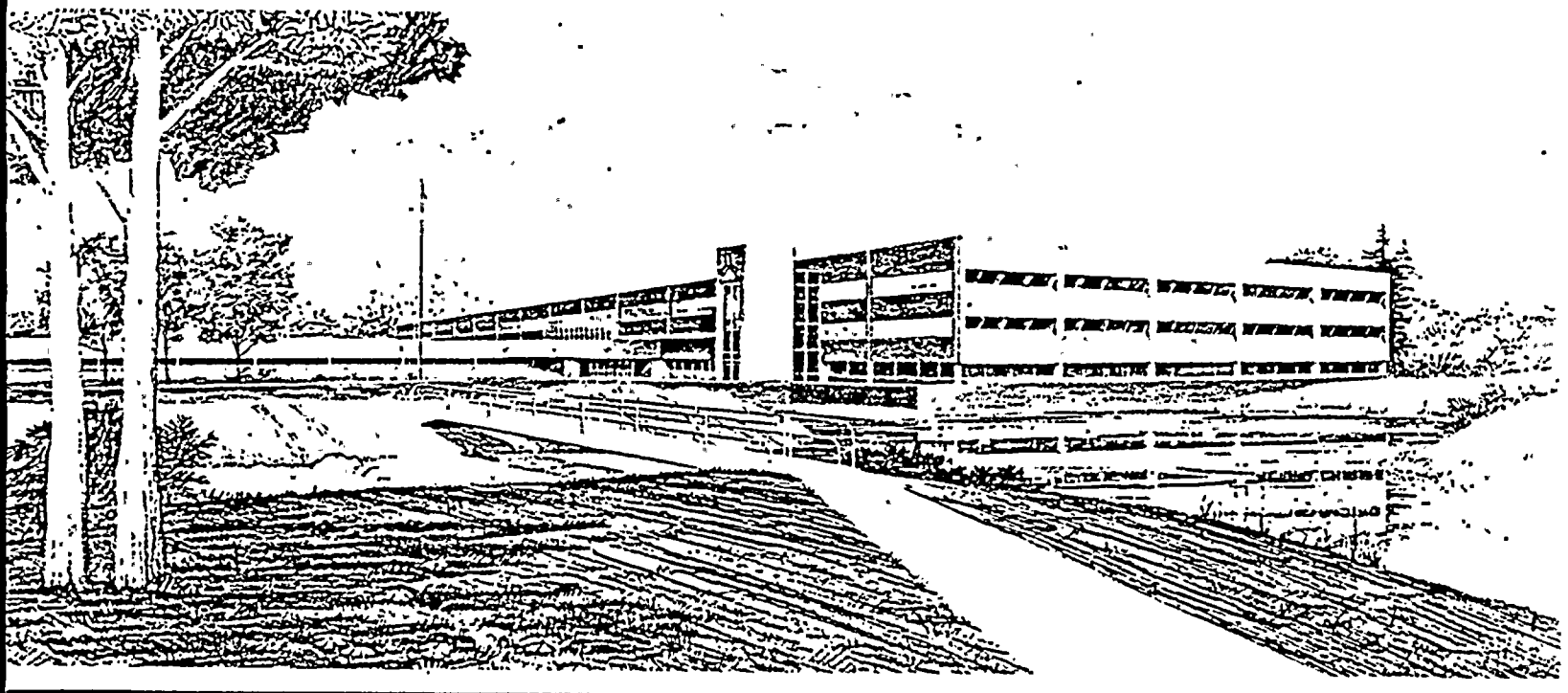

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ABSTRACT

This EG&G Idaho, Inc., report evaluates the submittal provided by Florida Power and Light Company (FPL) for St. Lucie Plant Unit Nos. 1 and 2. The submittal is in response to Generic Letter No. 82-16, "NUREG-0737 Technical Specifications (TS)". Applicable sections of the plants' TS are evaluated to determine compliance to the guidelines established in the generic letter.

FOREWORD

This report is supplied as part of the "Technical Assistance for Operating Reactors Licensing Actions" being conducted for the U.S. Nuclear Regulatory Commission Region II by EG&G Idaho, Inc., NRC Licensing Support Section.

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Docket Nos. 50-335 and 50-389
TAC Nos. 49760 and R2X162

CONTENTS

CONFORMANCE TO NRR GENERIC LETTER 82-16
ST. LUCIE PLANT UNIT NOS 1 AND 2

1. INTRODUCTION

On September 20, 1982, Generic Letter 82-16[1] was issued by D. G. Eisenhut, Director of Licensing, Office of Nuclear Reactor Regulation (NRR), to all pressurized power reactor licensees. This letter identified a number of items required by NUREG-0737[2] to be implemented in the licensee's Technical Specifications (TS) by December 31, 1981. Each licensee was requested to review their facility's TS, to address areas of compliance, and to identify deviations or absence of a specification for the items identified in the generic letter within 90 days of receipt of the letter.

The Florida Power and Light Company (FPL), the licensee for St. Lucie Plant Unit Nos. 1 and 2, provided a response to the generic letter on December 22, 1982,[3] for St. Lucie Plant Unit No. 1. The NUREG-0737 items for St. Lucie Plant Unit No. 2 were covered in Amendment 5[4] to the Final Safety Analysis Report (FSAR) for St. Lucie Plant Unit No. 2.

This interim report provides an evaluation of the licensee's TS and Nuclear Regulatory Commission (NRC) correspondence with the licensee pertaining to those items identified in the generic letter.

2. REVIEW REQUIREMENTS

The review consists of evaluating the licensee's response, currently approved TS, and other NRR approvals against the criteria set forth in Generic Letter 82-16. The NUREG-0737 items and the criteria established are as follows:

2.1 STA Training (I.A.1.1.3)

The licensee is to address within their TS that a shift technical advisor (STA) to the shift supervisor is provided. In addition, the qualifications, training, and on-duty requirements for the STA should be stated.

2.2 Shift Manning-Overtime Limits (I.A.1.3.1)

The licensee is to provide changes to their TS providing overtime administrative procedure and staffing requirements. The following guidelines were established for the licensee by the NRC.

"a. An individual should not be permitted to work more than 16 hours straight (excluding shift turnover time).

b. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any seven day period (all excluding shift turnover time).

c. A break of at least eight hours should be allowed between work periods (including shift turnover time).

d. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Recognizing that very unusual circumstances may arise requiring deviation from the above guidelines, such deviation shall be authorized by the plant manager or his deputy, or higher levels of management. The paramount consideration in such authorization shall be that significant reductions in the effectiveness of operating personnel would be highly unlikely.

In addition, procedures are encouraged that would allow licensed operators at the controls to be periodically relieved and assigned to other duties away from the control board during their tour of duty."[5]

2.3 Short Term Auxiliary Feedwater System (AFWS) Evaluation (II.E.1.1)

The objective of this item is to improve the reliability and performance of the auxiliary feedwater (AFW) system. TS depend on the results of the licensee's evaluation and the staff review, and are being developed separately for each plant. The limiting conditions of operation (LCO's) and surveillance requirements for the AFW system should be similar to other safety-related systems.[1]

2.4 Safety Grade AFW Initiation and Flow Indication (II.E.1.2)

The AFW system automatic initiation system was to have been control grade by June 1, 1980, and safety grade by July 1, 1981; the AFW system flow indication was to have been control grade by January 1, 1980, and safety grade by July 1, 1981.[1]

2.5 Dedicated Hydrogen Penetrations (II.E.4.1)

Plants that use external recombiners or purge systems for post-accident combustible gas control of the containment atmosphere should provide containment penetrations dedicated to that service. In satisfying this item, some plants may have to add some additional piping and valves. If so, these valves should be subjected to the requirements of Appendix J of 10CFR 50, and the TS should be modified accordingly.[1]

2.6 Containment Pressure Setpoint (II.E.4.2.5)

The containment pressure setpoint that initiates containment isolation must be reduced to the minimum compatible with normal operating conditions. Most plants provided justification for not changing their setpoint and the NRC has approved their justification by separate correspondence. The remaining plants must submit a change to the TS with

the lower containment pressure setpoint and provide justification if this setpoint is more than 1 psi above maximum expected containment pressure during normal operation.[1]

2.7 Containment Purge Valves (II.E.4.2.6)

Model TS were sent separately to each plant as part of the overall containment purge review. These TS include the requirement that the containment purge valves be locked closed except for safety related activities, verified closed at least every 31 days, and be subjected to leakage rate limits.[1]

2.8 Radiation Signal on Purge Valves (II.E.4.2.7)

The containment purge valves must close promptly to reduce the amount of radiation released outside containment following a release of radioactive materials to containment. TS should include the requirement that at least one radiation monitor that automatically closes the purge valves upon sensing high radiation in the containment atmosphere be operable at all times except cold shutdowns and refueling outages. If not operable, either the plant should begin proceeding to cold shutdown within 24 hours or the purge valves should be closed within 24 hours. Model TS were provided in Standard Technical Specifications format for those plants that are using safety-grade components to satisfy the requirement.[1]

2.9 Upgrade Babcock and Wilcox (B&W) AFWS (II.K.2.8)

Additional long-term AFWS modifications were to be performed in conjuction with Generic Letter 82-16 Items 3 and 4 (Items 2.3 and 2.4 above). The TS implemented for Items 3 and 4 will also address the upgrade of the B&W AFWS; therefore no separate TS would be required for this item for the B&W Plants.

2.10 B&W Safety-Grade Anticipatory Reactor Trip (II.K.2.10)

Safety-grade turbine trip equipment initiating a reactor trip was to be implemented by the B&W designed plants as part of the TMI lessons learned. The licensee is to implement in the TS the trip setpoint, number of channels, trip conditions, minimal channels required for operation, applicable operating modes, actions to be taken, surveillance required and any other requirements for safety-grade equipment.

2.11 B&W Thermal-Mechanical Report (II.K.2.13)

Licensees of B&W operating reactors were required to submit, by January 1, 1981, an analysis of the thermal-mechanical conditions in the reactor vessel during recovery from small breaks with an extended loss of all feedwater. TS, if required, will be determined following NRC staff review.[1]

2.12 Reporting Safety and Relief Valve Failures and Challenges (II.K.3.3)

NUREG-0660 stated that safety and relief valve failures be reported promptly and challenges be reported annually. The sections of the TS that discuss reporting requirements should be accordingly changed. The NRC has noted that an acceptable alternative would be to report challenges monthly.[1]

2.13 Anticipatory Trip on Turbine Trip (II.K.3.12)

Licensees with Westinghouse-designed operating plants have confirmed that their plants have an anticipatory reactor trip upon turbine trip. Many of these plants already have this trip in the TS. For those that do not, the anticipatory trip should be added to the TS.[1]

For the St. Lucie Plant Unit 1 and 2, the above Items 2.9, 2.10, and 2.11 are not being evaluated. Being a Combustion Engineering design,

Items 2.9 and 2.10 are not applicable for St. Lucie Plant Unit 1 and 2. For Item 2.11, FPL's Thermal-Mechanical Report is being handled as an active Three Mile Island (TMI) action item under TAC number 46905 for St. Lucie Plant Unit 1.

3. EVALUATION

The evaluations of Generic Letter 82-16 Items are as follows:

3.1 STA Training (I.A.1.1.3)

The licensee has stated in his response for St. Lucie Unit 1 that this item was addressed by TS Amendment No. 37. In Table 6.2-1 of both St. Lucie Plant Unit 1 and 2 TS,[6,7] the STA is designated as being required in the minimal shift crew composition for operational modes 1, 2, 3, or 4. Section 6.3.1 specifies "the Shift Technical Advisor who shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and in the response and analysis of the plant for transients and accidents."[6] The retraining and replacement training program for the facility staff is stated in Section 6.4.1 of the TS. The exact training program for the STA is not in the TS. In Amendment 5[4] to the St. Lucie Plant Unit 2 FSAR Appendix 1.9A, the NUREG-0737 items are addressed. The licensee states that Chapter 13 of the FSAR has been revised to address the requirement of NUREG-0737 Item I.A.1.1. Subsection 13.1.2.2 specifies the responsibility, authority, phase out plans, and reporting relationships; subsection 13.1.3.1 and 13.2.1.1.2 specify the training requirements.

In a letter[8] from the NRC to the licensee, dated January 26, 1982, the NRC stated that Item I.A.1.1.3 of NUREG-0737 is resolved.

Until further guidance is issued by the Commission, no further licensing action is required for this item.

3.2 Shift Manning--Overtime Limits (I.A.1.3.1)

The licensee has stated in his response for St. Lucie Plant Unit 1 that the overtime limitations are adequately enforced by administrative procedures and that no amendment to the TS is necessary at this time. This

policy was accepted by the NRC in the letter from R. A. Clark to R. E. Uhrig, dated February 4, 1982.[9] The TS for St. Lucie Unit 1 do not contain any shift manning overtime limitation requirements.

Section 6.2.2 of the St. Lucie Unit 2 TS contains the overtime limits as specified in Generic Letter 82-12 and is therefore in complete compliance with NUREG-0737 Item I.A.1.3.1.

On June 30, 1983, a notegram from D. C. Fischer, Lead Project Manager for the main topic I.A.1.3[10] was sent to the operating reactor project manager for St. Lucie Plant Unit 1 requesting that the TAC number be closed out for Item I.A.1.3.1 on St. Lucie Plant Unit 1. No further licensing action is required for this item.

3.3 Short Term Auxiliary Feedwater System (AFWS) Evaluation (II.E.1.1)

The licensee has stated in his response that the existing St. Lucie Plant Unit 1 AFWS TS limiting conditions of operation and surveillance requirements are similar to that of other safety related systems. Section 3.7.1.2 and 4.7.1.2 of the St. Lucie Plant Units 1 and 2 TS provide the condition for operation and the surveillance requirements.

In enclosure 2 of the FPL letter[11] to the NRC, dated January 2, 1981, the licensee addresses NUREG-0737 Item II.E.1.1 for St. Lucie Plant Unit 1. The enclosure is a report which provides the description of AFWS modifications to be implemented by January 1, 1982 and the safety evaluation of the system.

Amendment 5 to the St. Lucie Plant Unit 2 FSAR Appendix 1.9A addresses NUREG-0737 Item II.E.1.1. A reliability analysis was performed to determine dominant failure modes and assess AFWS reliability levels. The results of the reliability evaluation are provided in Appendix 10.4.9B of the FSAR. A safety review was also provided using the guidance in Standard Review Plan 10.4.9. The results are provided in Appendix 10.4.9.A of the FSAR.

Review of the TS for St. Lucie Plant Units 1 and 2 indicated that the limiting conditions of operation and surveillance requirements are similar to those other safety-related systems identified in the TS. No further licensing action is required for this item.

3.4 Safety Grade AFW Initiation and Flow Indication (II.E.1.2)

The licensee has stated in his response for St. Lucie Plant Unit 1 that TS Amendment No. 37, which was approved by the NRC January 19, 1981, contains all the information pertaining to the safety grade AFW System initiation and flow indication.

In enclosure 2 of the FPL letter to the NRC, dated January 2, 1981, the licensee addresses NUREG-0737 Item II.E.1.2 for St. Lucie Plant Unit 1. This item is covered for St. Lucie Plant Unit 2 in Amendment 5 to the FSAR in Appendix 1.9A. Review of the TS for St. Lucie Plant Units 1 and 2 indicates that the AFW initiation and flow indication are safety grade. No further licensing action is required for this item.

3.5 Dedicated Hydrogen Penetrations (II.E.4.1)

The licensee has stated in his response for St. Lucie Plant Unit 1 that their hydrogen recombiners are internal but that a hydrogen purge system was installed and the St. Lucie Plant Unit 1 TS subjects the hydrogen purge valves to the criteria specified in Appendix J of 10CFR 50.

In Amendment 5 to St. Lucie Plant Unit 2 FSAR, the licensee has stated that redundant internal hydrogen recombiners are provided. Therefore, NUREG-0737 Item I.E.4.1 is not applicable to St. Lucie Plant Unit 2. A discussion of the internal hydrogen recombiners is provided in Subsection 6.2.5 of the FSAR.

Review of the St. Lucie Plant Unit 1 TS indicates that the valves are subject to the requirements of Appendix J of 10CFR 50 and since St. Lucie Plant Unit 2 utilizes internal hydrogen recombiners and apparently has not

added additional piping and valves, it is concluded that the NUREG-0737 item requirements are met. No further licensing action is required for this item.

3.6 Containment Pressure Setpoint (II.E.4.2.5)

The licensee has stated in his response for St. Lucie Plant Unit 1 that analysis was provided to the NRC justifying the present setpoint for containment pressure. The NRC accepted the present setpoint in the letter R. A. Clark to R. E. Uhrig, dated January 20, 1982.[12]

Review of Table 2.2-1 of the TS for St. Lucie Plant Unit 2 indicates the setpoint limits are in accordance to the recommended guidelines of Generic Letter 82-16. No further licensing action is required for this item.

3.7 Containment Purge Valve (II.E.4.2.6)

The licensee has stated in his response for St. Lucie Plant Unit 1 that a response was provided to the NRC in FPL letter L-82-317, dated July 30, 1982. However, it is not indicated that an NRC acceptance was given. Review of the TS for St. Lucie Plant Unit 1 indicates that compliance to Generic Letter 82-16 has not been met.. The St. Lucie Plant Unit 2 TS Section 3/4.6 provides the information on the containment purge valve limiting condition for operation, surveillance requirements, and the testing to be performed on the valves. The TS Section 3.6.1.7 specifies that the purge valves be sealed closed and verified at least once per 31 days except for safety related activities. The TS leak testing is type C which is performed with gas at intervals no greater than 24 months.

St. Lucie Plant Unit 2 TS meets the recommended guidance of Generic Letter 82-16. No further licensing action is needed for Unit 2.

3.8 Radiation Signal on Purge Valves (II.E.4.2.7)

The licensee has stated in his response for St. Lucie Plant Unit 1 that the existing TS requires that within 24 hours, the plant begins proceeding to cold shutdown should all containment radiation monitors fail. Also the containment isolation is initiated by high radiation (and other signals) closing the purge valves.

Review of the TS for St. Lucie Plant Units 1 and 2 indicate that the requirements of NUREG-0737 Item II.E.4.2.7 have been met. No further licensing action is required for this item.

3.9 Upgrade Babcock and Wilcox (B&W) AFWS (II.K.2.8)

St. Lucie Plant Units 1 and 2 are a Combustion Engineering design and, therefore, the requirements of this item are not applicable. No licensing action is required.

3.10 B&W Safety-Grade Anticipatory Reactor Trip (II.K.2.10)

St. Lucie Plant Units 1 and 2 are a Combustion Engineering design and, therefore, the requirements of this item are not applicable. The anticipatory trip is evaluated under NUREG-0737 Item II.K.3.3 for the Westinghouse design. No licensing action is required.

3.11 B&W Thermal-Mechanical Report (II.K.2.13)

St. Lucie Plant Units 1 and 2 are a Combustion Engineering design and, therefore, the requirements of this item are not applicable. It has been noted that there is an active TMI action item Thermal-Mechanical Report for St. Lucie Plant Unit 1 under TAC Number 46905. No licensing action is required by Generic Letter 82-16 for this item.

3.12 Reporting Safety and Relief Valve Failures and Challenges (II.K.3.3)

The licensee has stated in his response for St. Lucie Plant Unit 1 that a commitment to report safety and relief valve challenges on an annual basis was given in their letter L-80-184, dated July 13, 1980. The licensee also committed to make both TS compatible to the requirements of Generic Letter 82-16 following finalization of the St. Lucie Plant Unit 2 TS.

Review of the St. Lucie Plant Unit 1 TS indicates that Section 6.9.1.6 has not been amended yet to include the reporting on a monthly basis for all challenges to the valves. St. Lucie Plant Unit 2 TS Section 6.9.1.6 is in compliance with the requirements of Generic Letter 82-16. No further licensing action is required for St. Lucie Plant Unit 2.

3.13 Anticipatory Trip on Turbine Trip (II.K.3.12)

The licensee has stated in his response for St. Lucie Plant Unit 1 that although not a Westinghouse design, the TS adequately cover the anticipatory trip on turbine trip.

Review of the TS Tables 2.2-1, 3.3-1 and 3.3-2 indicate that the requirements set forth in Generic Letter 82-16 have been met. No further licensing action is required.

4. CONCLUSIONS

Based on our review, we find the licensee conforms to those issues addressed in Generic Letter 82-16 on TS, except for those identified as follows:

1. Section 3.1 STA Training--Until further guidance is provided by the Commission, no further licensing action can be taken to determine whether the exact training program for the STA is required to be in the TS.

2. Section 3.2 Shift Manning-Overtime Limits--St. Lucie Plant Unit 1 TS do not contain shift-manning overtime limits, however, FPL's overtime limits policy was accepted by the NRC.

3. Section 3.7 Containment Purge Valve--St. Lucie Plant Unit 1 TS do not comply with the requirements of Generic Letter 82-16.

4. Section 3.11 Thermal-Mechanical Report--The Thermal-Mechanical Report for St. Lucie Plant Unit No. 1 is being handled as an active TMI action item under TAC number 46905. There is no identified TMI action item for the St. Lucie Plant Unit No. 2 Thermal-Mechanical Report. Generic Letter 82-16 does not require any licensing action for this item.

5. Section 3.12 Reporting Safety and Relief Valve Failures and Challenges--The present St. Lucie Plant Unit 1 TS do not comply with the requirements of Generic Letter 82-16. However, FPL is presently updating the St. Lucie Unit 1 TS to conform with the St. Lucie Unit 2 TS. When this is completed and approved by the NRC, the St. Lucie Unit 1 TS should be in compliance with the requirements of Generic Letter 82-16.

5. REFERENCES

1. D. G. Eisenhut, NRC letter to All Pressurized Power Reactor Licensees, "NUREG-0737 Technical Specifications (Generic Letter 82-16)," September 20, 1982.

2. NUREG-0737, Clarification of TMI Action Plan Requirements, published by the Division of Licensing, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, November 1980.

3. R. E. Uhrig, Florida Power and Light letter to D. G. Eisenhut; Office of Nuclear Reactor Regulation, "St. Lucie Unit 1, Docket No. 50-335, NUREG-0737 Technical Specifications," December 22, 1982.

4. R. E. Uhrig, Florida Power and Light Company letter to D. G. Eisenhut; Office of Nuclear Reactor Regulation, "St. Lucie Unit 2, Docket No. 50-389 Amendment 5 to the Final Safety Analysis Report," L-81-351, August 12, 1981.

5. D. G. Eisenhut, NRC letter to All Licensees of Operating Plants, Applicants for an Operating License, and Holders of Construction Permits, "Nuclear Power Plant Staff Working Hours (Generic Letter No. 82-12)," June 15, 1982.

6. St. Lucie Plant Unit 1 Technical Specifications, Appendix A to License No. DPR-67, March 1, 1976, Amendment No. 58.

7. Technical Specifications, St. Lucie Plant Unit 2, Docket No. 50-389, Appendix A to License No. NPF-16, April 1983.

8. R. A. Clark, NRC letter to R. E. Uhrig, Florida Power and Light Company, "NUREG-0737 Item I.A.1.1 Shift Technical Advisor (STA)," January 26, 1982.

9. R. A. Clark, NRC letter to R. E. Uhrig, Florida Power and Light Company, "TMI Action Plant Items I.A.1.3, I.C.5, and I.C.6 as Described in NUREG-0737," February 4, 1982.

10. D. C. Fischer, Lead Project Manager for I.A.1.3, notegram to all operating reactor project managers, "TAC Closeout" June 30, 1983.

11. R. E. Uhrig, Flordia Power and Light Company letter to D. G. Eisenhut; Office of Nuclear Reactor Regulation, "St. Lucie Unit 1, Docket No. 50-335. Post TMI Requirements." L-81-4, January 2, 1981.

12. R. A. Clark, NRC letter to R. E. Uhrig, Florida Power and Light Company, "NUREG-0737 Item II.E.4.2(5) for St. Lucie Unit 1," January 20, 1982.

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16. ABSTRACT (200 words or less)

This EG&G Idaho, Inc., report evaluates whether the designated Operating Reactor Plant has conformed to the requirements of the NRR Generic Letter No. 82-16, "NUREG-0737 Technical Specifications."

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