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UHRIG,R.E. Florida Power & Light Co.
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EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards status of NUREG-0737 items requiring action by 820101.

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TITLE: Response to NUREG -0737/NUREG-0660 TMI Action Plan Rgmts (OL's)

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FLORIDA POWER & LIGHT COMPANY

January 8, 1982
L-82-7

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Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Eisenhut:

Re: St. Lucie Unit 1
Docket No. 50-335
Post-TMI Requirements

This letter transmits to you the status of those NUREG-0737 items requiring action up to and including Janaury 1, 1982. We are working towards meeting all of the remainder of the requirements and will advise you should problems arise in meeting any of the long-term dates.

Very truly yours,

Jack E. Vessely for

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/PKG/ras

cc: Mr. J. P. O'Reilly, Region II
Harold F. Reis, Esquire

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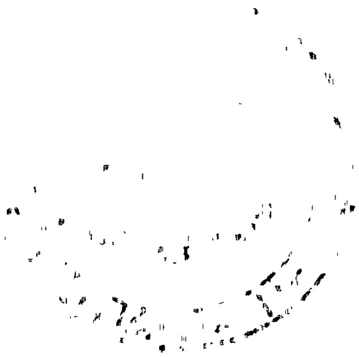

1. SHIFT MANNING (I.A.1.3)

The shift staffing portion of NUREG-0737 item I.A.1.3 has been implemented at St. Lucie Unit 1. Florida Power and Light letter L-81-495 dated November 24, 1981 provided our position concerning our capability to provide timely augmentation of the plant staff for response to radiological emergencies.

2. GUIDANCE FOR THE EVALUATION AND DEVELOPMENT OF PROCEDURES FOR TRANSIENTS AND ACCIDENTS (I.C.1)

In a letter dated June 30, 1981, Mr. K. P. Baskin, Chairman of the Combustion Engineering Owners Group transmitted the following two reports to you:

A. CEN-152, Combustion Engineering Emergency Procedure Guidelines, June 1981.

B. CEN-156, Combustion Engineering Emergency Procedure Guidelines Development, June 1981.

These reports were prepared for the C-E Owners Group as a response to NUREG-0737 Item I.C.1 and will be used in the preparation of St. Lucie Unit 1 emergency procedures. C-E is currently revising the reports in response to NRC comments. Florida Power and Light will adopt them subject to final review.

Procedure preparation is in progress but will not be implemented until the final revision of the guidelines are approved.

3. PLANT SAFETY PARAMETER DISPLAY CONSOLE (I.D.2)

The Safety Assessment System, of which the Plant Safety Parameter Display Console is a part, is expected to be operational following the first refueling outage after January 1, 1983 based on current scheduled equipment delivery dates.

4. REACTOR COOLANT SYSTEM VENTS (II.B.1)

In letter L-81-347 dated August 10, 1981 we submitted to you a design description of our Reactor Coolant System Vent System. At that time we stated that we would submit operating procedures following the NRC approval of the design. In an effort to expedite your review, it is now our intent to submit a set of operating procedures to you by February 1, 1982. This is in response to the letter from Robert A. Clark to Robert E. Uhrig dated November 30, 1981.

The system has been installed at St. Lucie 1. It is currently isolated and it will not be made operational until preoperational testing is completed and the NRC has completed their preimplementation review and approval of the design.

5. PLANT SHIELDING (II.B.2)

A. All Florida Power and Light commitments made in addressing NRC requirements concerning "plant shielding" modifications have been met except for one reach rod on a CVCS charging pump discharge valve. It is expected to be complete by January 15, 1982. The majority of the necessary procedure changes have been drafted and implemented. The remaining minor changes will be made on an expedited basis.

B. Radiation qualification of safety related equipment is being addressed through our program to address the NRC concerns expressed in I & E Bulletin 79-01B.

6. POST ACCIDENT SAMPLING CAPABILITY (II.B.3)

The Post Accident Sampling System has been installed. During preoperational testing, problems were discovered in some of the equipment and minor design changes have been initiated. It is our intent to have the system fully operational by March 31, 1982. It should be noted that

the previously required interim sampling capability is fully operational and will remain so until the final system is operational.

The letter from Robert A. Clark (NRC) to R.E. Uhrig dated December 9, 1981 concerned the status of NUREG-0737 items II.F.1.1 and II.F.1.2. The letter states that the NRC schedule for requesting technical specification changes would be determined following your receipt of OMB clearance of all NUREG-0737 items currently under review pursuant to the Paperwork Reduction Act of 1980. Our proposed technical specifications changes will be scheduled for submittal to you after we receive your request.

7. TRAINING FOR MITIGATING CORE DAMAGE (II.B.4)

The training of plant personnel for the mitigation of core damage as required by NURGE-0737 item II.B.4 has been completed except for one individual. This will be completed by January 15, 1982.

8. SAFETY/RELIEF VALVE TESTING (II.D.1)

It is Florida Power & Light Company's intent, subject to the schedular constraints of the EPRI Safety and Relief Valve Test Program, to comply with the revised implementation schedule set forth in Mr. Eisenhut's letter of September 29, 1981 (Generic Letter No. 81-36).

9. VALVE POSITION INDICATION (II.D.3)

Our vendor has successfully completed the environmental qualification tests of the equipment. The test reports will be available for inspection at the St. Lucie plant as are the test reports that are required to conform to I&E Bulletin 79-01B.

10. AUXILIARY FEEDWATER SYSTEM EVALUATION (II.E.1.1(3))

A review of our previous submittals to the staff on this subject allow us to conclude that we have met the intent of NRC requirements in this area.

11. AUXILIARY FEEDWATER SYSTEM AUTOMATIC INITIATION AND FLOW INDICATION (II.E.1.2)

In letter L-81-416 dated September 22, 1981, we informed you of our intent to install the safety grade equipment associated with the automatic initation of AFW flow during the last refueling outage. This work has been completed and St. Lucie 1 has addressed all the NUREG-0737 requirements regarding auto-initation of AFW. It remains our intent to install and test the Auxiliary Feedwater Logic Cabinet which incorporate additional AFW capabilities during the next refueling outage.

Environmental qualification of safety related equipment is being addressed through our program to address the NRC concerns expressed in I & E Bulletin 79-01B.

12. ADDITIONAL ACCIDENT-MONITORING INSTRUMENTATION (II.F.1)

All accident-monitoring instrumentation has been installed and is operational except for one of two trains of the Containment Hydrogen Monitoring System (II.F.1.6) which is undergoing preoperational testing. It is intended that this train will be operational by January 31, 1982. The redundant train is fully operational.

Conversion tables (for the effluent radiation monitor (II.F.1.1) installed to measure the noble gas activity in the main steam lines) that relate the actual instrument readings (R/hr) to curies released are currently being prepared. These tables will be completed as soon as possible but no later than January 31, 1982.

The letter from Robert A. Clark (NRC) to R.E. Uhrig dated December 9, 1981 concerned the status of NUREG-0737 items II.F.1.1 and II.F.1.2. The letter states that the NRC schedule for requesting technical specification changes would be determined following your receipt of OMB clearance of all NUREG-0737 items currently under review pursuant to the Paperwork Reduction Act of 1980. Our proposed technical specifications will be scheduled for submittal to you after we receive your request.

13. INSTRUMENTATION FOR DETECTION OF INADEQUATE CORE COOLING (II.F.2)

A. SUBCOOLING MARGIN MONITOR

The subcooling margin monitor has been upgraded per our commitments described in letter L-80-113 dated April 3, 1980 and our revised schedule contained in letter L-80-418 dated December 23, 1980.

B. INSTALLATION OF LEVEL INSTRUMENTATION

Florida Power and Light has participated over the past two years in the C-E Owners Group program for evaluation of instrumentation to detect inadequate core cooling and development of selected new instrumentation. This program is described in report CEN-185, "Documentation of Inadequate Core Cooling Instrumentation for Combustion Engineering Nuclear Steam Supply Systems," September, 1981, which was submitted by the C-E Owners Group to the NRC for review by a letter dated September 15, 1981. This program was also discussed with the NRC staff during a meeting between C-E Owners Group and NRC staff representatives on June 25, 1981. Responses to NRC staff questions on this program are contained in report CEN-181, "Generic Responses to NRC Questions on the C-E Inadequate Core Cooling Instrumentation," September, 1981, which was also submitted by the C-E Owners Group to the NRC on September 15, 1981.

A major feature of the C-E Owners Group Program has been the development and testing of the heated junction thermocouple (HJTC) system for measurement of reactor vessel water inventory. The design of the HJTC

system is described in report CEN-185. The C-E Owners Group has sponsored extensive testing of the HJTC components and system. The C-E Owners Group has co-sponsored with Combustion Engineering construction and operation of a dedicated test faclity in Windsor, CT which has been used to test a full-scale HJTC probe. Test results from this program are documented in reports CEN-185, Supplement 1, "Heated Junction Thermocouple Phase I Test Report," November, 1981, and CEN-185, Supplement 2, "Heated Junction Thermocouple Phase II Test Report," November, 1981. Both of these reports were submitted by the C-E Owners Group to the NRC for review by a letter dated November 25, 1981. Phase III (full-scale) testing is currently in progress. A similar report will be submitted following completion of this final testing phase.

The reactor vessel internals and reactor vessel head modifications necessary for installation of the instrumentation have been completed. It is our intent to have the system installed and operational following the first refueling outage after January 1, 1983 dependent upon equipment availability.

14. THERMAL MECHANICAL REPORT--EFFECT OF HIGH-PRESSURE INJECTION ON VESSEL INTEGRITY FOR SMALL-BREAK LOSS-OF-COOLANT ACCIDENT WITH NO AUXILIARY FEEDWATER (II.K.2.13)

Florida Power and Light has participated in C-E Owners Group activities which respond to the requirements of NRC Action Plan Item II.K.2.13, "Thermal Mechanical Report--Effect of High-Pressure Injection on Vessel Integrity for Small-Break Loss-of-Coolant Accident with no Auxiliary Feedwater." As a result of this effort, the C-E Owners Group submitted to the NRC staff for review report CEN-189, "Evaluation of pressurized Thermal Shock Effects due to Small Break LOCA's with Loss of Feedwater for Combustion Engineering NSSS," December, 1981, by a letter dated December 31, 1981. This report describes the analytical methods used in all analytical evaluations and reports plant-specific analysis results in separate appendices. In particular, Appendix F, "Evaluation of Pressurized Thermal Shock Effects Due to Small Break LOCA's with Loss of

Feedwater for the St. Lucie 1 Reactor Vessel", contains the results for the St. Lucie 1 vessel. Florida Power and Light hereby references report CEN-189 and Appendix F to report CEN-189 on Docket 50-335 in response to the documentation requirements of NRC Action Plan Item II.K.2.13.

NRC Action Plan Item II.K.2.13, as clarified in NUREG-0737, requires that "a detailed analysis shall be performed on the thermal-mechanical conditions in the reactor vessel during recovery from small breaks with an extended loss of all feedwater." The requirement "deals with the potential for thermal shock of reactor vessels resulting from cold safety injection flow." Report CEN-189 provides the required analysis.

The results contained in report CEN-189 and in Appendix F demonstrate that the St. Lucie 1 plant can safely withstand a small break loss of coolant accident with extended loss of feedwater for the full design life of the plant without crack initiation.

15. POTENTIAL FOR VOIDING IN THE REACTOR COOLANT SYSTEM DURING TRANSIENTS (II.K.2.17)

Florida Power and Light has participated in a C-E Owners Group program to respond to the requirements of NRC Action Plan Item II.K.2.17, "Potential for Voiding in the Reactor Coolant System During Tranients." This item is a requirement to "analyze the potential for voiding in the reactor coolant system (RCS) during anticipated transients." The C-E Owners Group program analyses have been completed. These analyses demonstrate that if voiding occurs in a Combustion Engineering RCS during anticipated transients, the NRC acceptance criteria for these transients are still met. The documentation of these analysis results is presently being prepared and is expected to be submitted by the C-E Owners Group to NRC for review no later than March 31, 1982.

Florida Power and Light believes that the analysis results from the C-E Owners Group program are applicable to the St. Lucie 1 plant. When the documentation of these results is submitted by the C-E Owners Group to NRC, we will reference these results for application to Docket 50-335.

16. SEQUENTIAL AUXILIARY FEEDWATER FLOW ANALYSES (II.K.2.19)

Florida Power and Light understands that NRC Action Plant Item II.K.2.19 is not applicable to the St. Lucie 1 plant. This understanding is based on the following statement from NUREG-0843,"St. Lucie 2 Safety Evaluation Report," October, 1981.

> "Sequential auxiliary feedwater flow analytical requirements is only of concern to once-through steam generator designs. Since C-E utilizes inverted U-tube steam generator designs, requirements set forth by Item II.K.2.19 are not applicable. As such, the licensee is not required to address the item."

Therefore, it is our position that no further effort on this item is warranted.

17. INSTALLATION AND TESTING OF AUTOMATIC POWER-OPERATED RELIEF VALVE ISOLATION SYSTEM (II.K.3.1)

In our letter of January 2, 1981 (L-81-4) we enclosed a report entitled "PORV Failure Reduction Methods - Final Report" as our response to NUREG-0737, item II.K.3.2. Based on the above study, it is Florida Power and Light's position that the installation of an automatic PORV isolation system is unnecessary and it is our intent not to install such a system at St. Lucie Unit 1.

The C-E operating plants, after approximately 29 reactor-years of operation, have experienced no PORV failures during power operation. The elimination of the turbine runback feature and the provision of a direct reliable means for indicating PORV position to the operator provided significant improvements in system reliablity. The probability of a small break LOCA due to PORV failure has been reduced by an estimated factor of about 15 to a value of about 1.8×10^{-3} per reactor-year. This probability is well within the 90% confidence range of the probabilities of 10^{-2} to 10^{-4} per reactor-year for a LOCA due to a small pipe rupture

estimated in WASH-1400. Improved operator training programs and emergency procedures, as well as the provision of emergency power to the PORVs and to their block valves, though not qualified, has reduced the small break LOCA probability even further. Although the incorporation of the feature of automatic block valve closure upon PORV failure may further increase PORV system reliability, the additional control circuitry would introduce additional complexity to the system and would itself be subject to its own failure modes. The approach being adopted by FPL is to assure that the operator is able to utilize existing in-plant instrumentation to identify a stuck-open PROV and to close the block valve.

18. AUTOMATIC TRIP OF REACTOR COOLANT PUMPS DURING LOSS-OF-COOLANT ACCIDENT (II.K.3.5)

Florida Power and Light is currently participating with the C-E Owners Group effort in evaluating LOFT test results regarding this issue. C-E has prepared the LOFT Test L3-6 Post-Test Analysis Report which was submitted to the NRC by Mr. K. P. Baskin, the C-E Owners Group Chairman, on March 31, 1981. A meeting was held on April 28, 1981 between the NRC staff and the Owners Group to discuss the L3-6 test report and the related subject of tripping reactor coolant pumps. On the subject of tripping RCPs, C-E presented a possible approach for resolving the issue which the NRC staff took under review. The Owners Group is currently waiting for the results of the NRC review. We will continue to follow the results of the Owners Group activity.

19. EFFECT OF LOSS OF AC POWER ON PUMP SEALS (II.K.3.25)

This item requires that the consequences of a loss of RCP seal cooling due to a loss of AC power (defined as a loss of offsite power) for at least 2 hours is demonstrated to be negligible. The RCP seal cooling at St. Lucie 1 is not lost during a loss of AC Power (defined as a loss of off site power). The seals continue to receive cooling water.

In addition, the effect of the loss of all AC Power (complete AC blackout defined as a loss of normal and emergency AC) on reactor coolant pump (RCP) seals was previously addressed on the St. Lucie 2 docket (50-389) in testimony presented in a letter to W. D. Paton, Esquire,(NRC) from Norman A. Coll dated June 22, 1979. The reactor coolant pump seal design and construction are identical for St. Lucie 1 and St. Lucie 2, therefore the testimony is also applicable to St. Lucie 1. The conclusion of the testimony is that the RCP seals are expected to remain functional for a period of at least 24 hours. This conclusion was confirmed during seal integrity tests performed at the pump manufacturers shop and witnessed by the NRC.

20. REVISED SMALL BREAK LOSS-OF-COOLANT ACCIDENT METHODS TO SHOW COMPLIANCE WITH 10 CFR PART 50, APPENDIX K (II.K.3.30)

Florida Power and Light has participated in a C-E Owners Group program to develop a response to the requirements of NRC Action Plan Item II.K.3.30, "Revised Small-Break Loss-of-Coolant Accident Methods to Show Compliance with 10 CFR Part 50, Appendix K." The details of this program have been discussed by representatives of the C-E Owners Group and NRC staff in meetings on January 26, 1981 and October 30, 1981. By a letter dated November 18, 1981, from the Chairman of the C-E Owners Group to Mr. D. G. Eisenhut, Director of the NRC Division of Licensing, a request was made for extension of the deadline for response to Item II.K.3.30 to March 31, 1982.

Florida Power and Light concludes that the results of the C-E Owners Group program which addresses Item II.K.3.30 are applicable to the St. Lucie plant. When the results of this program are submitted to the NRC for review, we will reference these results for application to Docket 50-335. It is expected that this submittal will be made on March 31, 1982.