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Mr. Victor Stello

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Florida Power &amp; Light Co.

Miami, Fl. 33101

Robert E. Uhrig

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PLANT NAME: ST. LUCIE UNIT # 1

jcm 08/25/77

ENCLOSURE

Consists of request to amend Facility Operating License DPR-67 concerning one-time extension for listed surveillance requirements and in Section III of the attached Safety Evaluation. Notorized 08/23/77

9p

SAFETY

FOR ACTION/INFORMATION

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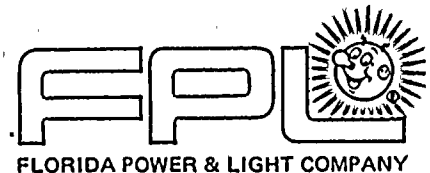
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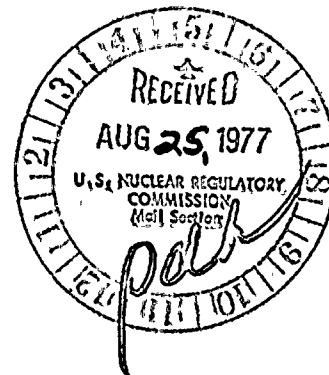
FILED

August 22, 1977  
L-77-256

Director of Nuclear Reactor Regulation  
Attention: 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 forty (40) copies of a request to amend Facility Operating License DPR-67.

On June 16, 1977 (L-77-178), Florida Power & Light Company (FPL) requested that the end of the first 18-month surveillance period for St. Lucie Unit 1 be extended to the first scheduled refueling outage. The reasons for the request were:

- 1) a reinterpretation of the starting time for the surveillance period which advanced the due dates of many 18-month surveillances by several months,
- 2) accomplishing the 18-month surveillances would require a unit outage of the same magnitude as a normal refueling outage, thus performing them at some time other than a refueling outage would seriously impact plant availability, and
- 3) the first scheduled refueling outage has been deferred until the late summer of 1978 due to a 5-month outage in 1976 for poison shim replacement.

On July 15, 1977 the NRC declined to approve the FPL request for a blanket extension of the 18-month surveillance requirements. The NRC letter did, however, give FPL the option of requesting specific one-time extensions to individual Technical Specification surveillance requirements. Any such request should include a safety evaluation and should give a basis in support of safe operation during the extended time interval.

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FPL has decided to request one-time extensions for several surveillances which are due to be conducted before the first scheduled refueling outage. The surveillances in question require a significant amount of preparation, outages of extended duration, and, in some cases, coordination with an outside vendor. In addition, they require unique plant conditions, so that, in some cases, they cannot be performed concurrently. Furthermore, we believe that sufficient bases exist to warrant such an extension for those we have selected. All other 18-month surveillances will be performed within their required surveillance intervals.

Therefore, FPL requests a one-time extension for each of the surveillance requirements listed below and in Section III of the attached Safety Evaluation. The extensions essentially provide a common date by which a scheduled and orderly outage can be undertaken without having an adverse effect on the FPL generating capacity. This is particularly critical at the present time since one of the surveillances listed below must be performed by September 7, 1977. September has historically been one of FPL's peak demand months. An outage of extended duration during this period would significantly increase the amount of fossil fuel consumed and could significantly affect system reliability.

Due to load management considerations, there is a possibility that the refueling outage for St. Lucie 1 may be advanced to late Spring or early Summer, in which case the requested extensions will be approximately 3 to 5 months shorter.

Accordingly, we request that item "N" be added to Enclosure 1 of License DPR-67 to read as follows:

- N. The end of the current surveillance period for the Surveillance Requirements listed below may be extended beyond the time limit specified by Technical Specification 4.0.2.a. In each case, the required surveillance shall be completed by the revised due date. Upon accomplishment of the surveillance, the provisions of Technical Specification 4.0.2.a shall apply.
1. Specification 4.8.2.3.2.d (battery emergency load test, and charger capacity test).  
Revised due date: Before the end of the first regularly scheduled refueling outage.
  2. Specification 4.8.1.1.3.b.1 (underground cable tests).  
Revised due date: Before the end of the first regularly scheduled refueling outage.



3. Specification 4.7.10.1.3 (snubber functional tests).  
Revised due date: Before the end of the first  
regularly scheduled refueling outage.
4. Specification 4.4.5 (steam generator tube in-  
service inspection).  
Revised due date: Before the end of the first  
regularly scheduled refueling outage.
5. Specification 4.3.1.1.3 (reactor trip system  
response time).  
Revised due date: Before the end of the first  
regularly scheduled refueling outage.
6. Specifications 4.1.2.2.c.2  
4.3.2.1.3 (actuation and cabinet  
response times)  
4.5.1.d.2  
4.5.2.e.2  
4.5.2.e.3  
4.6.2.1.b.2  
4.6.2.1.b.3  
4.6.3.1.2.a  
4.6.6.1.d.3  
4.6.6.1.d.5  
4.7.3.1.b.2  
4.7.4.1.b.2  
4.7.7.1.e.2  
4.7.8.1.d.3  
4.8.1.1.2.c.2  
4.8.1.1.2.c.3  
4.8.1.1.2.c.4  
4.8.1.1.2.c.5  
4.8.1.1.2.c.6  
4.8.1.1.2.d

(These tests are part of the Integrated Safe-  
guards Test.)

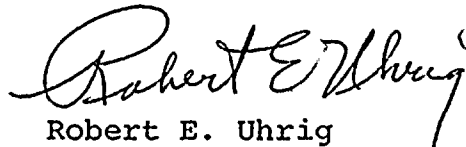
Revised due date: December 31, 1977



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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 written safety evaluation is attached.

Very truly yours,



Robert E. Uhrig  
Vice President

REU/MAS:ltm  
Attachment

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



SAFETY EVALUATION

Re: St. Lucie Unit 1  
Docket No. 50-335  
18-Month Surveillances

I. Introduction

This evaluation supports the proposed extension of five surveillance requirements until the first regularly scheduled refueling outage, and of several surveillance requirements comprising the Integrated Safeguards Test until December 31, 1977.

II. Evaluation

1. Specification: 4.8.2.3.2.d

Subject: Battery emergency load test, and charger capacity test:

Current due date: November 12, 1977

Revised due date: Before the end of the first regularly scheduled refueling outage.

Justification: A battery load profile test conducted on December 23, 1975 affected a more stringent load than that required by Specification 4.8.2.3.2.d. Prior to that, a charger capacity test had been conducted on December 20, 1975. Both of these "5-year" tests were completed satisfactorily. We have reviewed all surveillances (daily, weekly, monthly, and quarterly) conducted since then and have found no indication of a change in battery condition. Having completed the "5-year" tests in 1975 and having had no adverse operating history to date, we conclude that deferring the subject surveillances for approximately 4 to 9 months until the first regularly scheduled refueling outage will have no safety consequences.



2. Specification: 4.8.1.1.3.b.1

Subject: Underground cable tests.

Current due date: January 1, 1978.

Revised due date: Before the end of the first regularly scheduled refueling outage.

Justification: Surveillance of the spare underground cables per Specification 4.8.1.1.3.b.2 was conducted satisfactorily on April 4, 1977. We have had no adverse operating experience to date with any of the underground cables. Since the subject surveillance requires an extended outage, it is normally conducted during a refueling outage. Because of the satisfactory test of the spare cables and the satisfactory operating experience we have had with all underground cables, we conclude that deferring the subject surveillance for approximately 2 to 7 months until the first regularly scheduled refueling outage will have no safety consequences.

3. Specification: 4.7.10.1.3

Subject: Snubber functional tests.

Current due date: March 6, 1978.

Revised due date: Before the end of the first regularly scheduled refueling outage.

Justification: The ethylene propylene seal material used in the hydraulic snubbers installed at St. Lucie Unit 1 have been shown to be compatible with the hydraulic fluid. All hydraulic snubbers were shop tested before installation. The initial inspection conducted after receipt of the Operating License in 1976 showed no signs of degradation. Thus, our operating experience has been satisfactory, and we presently have no reason for believing that it would not continue to be satisfactory beyond March 6, 1978:

Hydraulic snubbers inside containment are not installed in the areas where they would receive the severest duty. For example mechanical snubbers are used in the hottest local areas of containment, such as the pressurizer cubicle. The hydraulic snubbers experience the less severe "containment ambient" environment.

In addition, the unit was shutdown for fuel reconstitution with coolant temperature below 200°F for approximately 5 months during 1976. While in the cold shutdown condition, there is no heat or radiation exposure of the hydraulic snubber seals or fluid. This is additional justification for the relatively short extension of the snubber functional tests until the first regularly scheduled refueling outage.

At this time, we estimate that the extension will be from approximately 1 to 5 months depending on the final refueling schedule.

4. Specification: 4.4.5  
Subject: Steam generator tube inspection.  
Current due date: April 22, 1978.  
Revised due date: Before the end of the first regularly scheduled refueling outage.  
Justification: Phosphate treatment has never been a part of secondary water chemistry at St. Lucie Unit 1. Because of this, St. Lucie steam generator tubes are not as susceptible to thinning. Also, the unit is operated within strict water chemistry limits, thereby minimizing the intrusion of contaminants. The use of all volatile treatment (AVT) instead of phosphate treatment, and the strict control of secondary water chemistry should combine to preclude corrosive degradation of steam generator tubes.

In 1975, radial deformation (denting) of steam generator tubes occurred at several PWR's following conversion of secondary coolant chemistry from phosphate treatment to AVT. Denting has been attributed to corrosion of the tube support plates at the tube/tube support plate intersection. Volumetric expansion of the corrosion product (magnetite) exerts sufficient force to dent the tube. The formation of magnetite is generally understood to be temperature dependent; magnetite will not form below about 350 F.



In addition to strict chemistry control, the unit was shutdown for fuel reconstitution with coolant temperature below 200°F for approximately 5 months during 1976. While in the cold shutdown condition, there is no  $\Delta T$  across the steam generator tubes; there is no stress on the tubes and the coolant temperature is well below the threshold temperature for magnetite formation. This in itself is reasonable justification for a 5 month extension of the steam generator tube inspection requirements.

Because St. Lucie Unit 1 has never used phosphate chemistry, and because C-E plants have not experienced significant denting during their first years of operation, there is no compelling reason that would prohibit operation beyond April 22, 1978. The relatively short extension of approximately 4 months to the first refueling outage would not be precluded by concern for tube denting.

Finally, there is a possibility that the refueling outage will begin before April 22, 1978, in which case we will commence the steam generator inspections on schedule and will not need an extension.

5. Specification: 4.3.1.1.3

Subject: Reactor Protection System sensor (RTD) response time.

Current due date: January 15, 1978.

Revised due date: Before the end of the first regularly scheduled refueling outage.

Justification: Specification 4.3.1.1.3 requires demonstration of reactor trip system response times at least once per 18 months. Technical Specification Table 3.3-2 lists the required response times. Several of the times include the response time of resistance temperature detectors (RTD's). Since the response time of an RTD is generally on the order of several seconds, it appears that a note should be added to Table 3.3-2 indicating that the given response times do not include the RTD response, and indicating separately what the RTD response should be.

In addition to strict chemistry control, the unit was shutdown for fuel reconstitution with coolant temperature below 200°F for approximately 5 months during 1976. While in the cold shutdown condition, there is no  $\Delta T$  across the steam generator tubes; there is no stress on the tubes and the coolant temperature is well below the threshold temperature for magnetite formation. This in itself is reasonable justification for a 5 month extension of the steam generator tube inspection requirements.

Because St. Lucie Unit 1 has never used phosphate chemistry, and because C-E plants have not experienced significant denting during their first years of operation, there is no compelling reason that would prohibit operation beyond April 22, 1978. The relatively short extension of approximately 4 months to the first refueling outage would not be precluded by concern for tube denting.

Finally, there is a possibility that the refueling outage will begin before April 22, 1978, in which case we will commence the steam generator inspections on schedule and will not need an extension.

5. Specification: 4.3.1.1.3

Subject: Reactor Protection System sensor (RTD) response time.

Current due date: January 15, 1978.

Revised due date: Before the end of the first regularly scheduled refueling outage.

Justification: Specification 4.3.1.1.3 requires demonstration of reactor trip system response times at least once per 18 months. Technical Specification Table 3.3-2 lists the required response times. Several of the times include the response time of resistance temperature detectors (RTD's). Since the response time of an RTD is generally on the order of several seconds, it appears that a note should be added to Table 3.3-2 indicating that the given response times do not include the RTD response, and indicating separately what the RTD response should be.

We are working to find a method of demonstrating RTD response time, but since this will require a lengthy outage and coordination with an outside test laboratory, we do not expect to have the results until the refueling outage. In the meantime, all other instrument calibrations and response time testing associated with Specification 4.3.1.1.3 will be conducted on schedule. Since the RTD's do not provide reactor trip directly and since Specification 4.3.1.1.3 will be satisfied except for RTD response time testing, we conclude that deferring the subject surveillance approximately 2 to 7 months until the first regularly scheduled refueling outage will have no safety consequences.

6. Specifications: 4.1.2.2.c.2  
4.3.2.1.3 (actuation and cabinet response times)  
4.5.1.d.2  
4.5.2.e.2  
4.5.2.e.3  
4.6.2.1.b.2  
4.6.2.1.b.3  
4.6.3.1.2.a  
4.6.6.1.d.3  
4.6.6.1.d.5  
4.7.3.1.b.2  
4.7.4.1.b.2  
4.7.7.1.e.2  
4.7.8.1.d.3  
4.8.1.1.2.c.2  
4.8.1.1.2.c.3  
4.8.1.1.2.c.4  
4.8.1.1.2.c.5  
4.8.1.1.2.c.6  
4.8.1.1.2.d

Subject: These tests are part of the Integrated Safeguards Test.

Current due date: September 7, 1977.

Revised due date: December 31, 1977.

Justification: The majority of these items are of the following nature:

- a) Start the component (pump, fan, diesel, etc.) on appropriate Safeguards Signal (SIAS, CSAS, etc.) and verify operability.



- b) Cycle the valves or dampers on appropriate Safeguards Signal and verify operability.

Routine tests on these components are conducted on a monthly basis to verify operability. In addition, the Engineered Safety Features Actuation Systems (instrument loop calibration) have had or will have all eighteen-month surveillances completed by the presently required date. The remaining testing is essentially design verification (proof testing), e.g., verifying that the wiring from the ESFAS cabinets (whose operability has been verified) to the components start circuitry (whose operability has been verified) was installed properly. It is our opinion that the approximately four-month extension will have no safety consequences.

The remainder of the items involve the Diesel Generators (D/G). The basis for postponing the D/G tests are as stated above with the following addition:

In May of 1977, the St. Lucie site experienced a loss of off-site power. During this event, proper bus stripping was observed, and the D/G sets automatically started and were loaded to near capacity for a reasonable period of time (20 - 30 minutes). Since no safeguards signals were present, full capability of picking up emergency loads was not verified; however, the D/G sets did perform properly. In addition, the original loading test results (conducted in October, 1975) demonstrated that the D/G sets would have to degrade significantly to approach the performance limits set by Safety Guide 9.

Although it was not documented to the extent required for a surveillance test, we feel the event above and the regular monthly testing justify postponing these D/G tests approximately four months.

### III. Conclusions


Based on the considerations discussed above, (1) the proposed amendment 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     )  
                              )  
COUNTY OF DADE     )     ss.

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

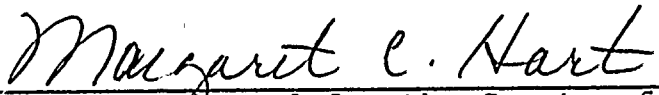
That he is a Vice President of Florida Power & Light Company,  
the Licensee herein;

That he has executed the foregoing document; that the state-  
ments 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

23 day of August, 1977

  
NOTARY PUBLIC, ~~On~~ and for the County of Dade,  
State of Florida

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NOTARY PUBLIC STATE OF FLORIDA AT LARGE  
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