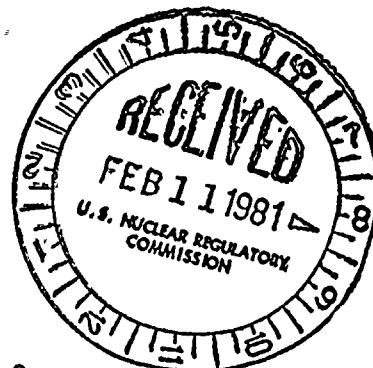


FEB 9 1981

Docket No. 50-389

Florida Power and Light Company
Dr. Robert E. Uhrig
Vice President
Advanced Systems and Technology
P. O. Box 529100
Miami, Florida 33152



Dear Dr. Uhrig:

SUBJECT: ACCEPTANCE REVIEW FOR THE ST. LUCIE, UNIT 2.

On March 24, 1980, you tendered an application for operating licenses for St. Lucie Unit 2. Your application included the General Information Section, Environmental Report - Operating License Stage (ER) and Final Safety Analysis Report (FSAR).

We have completed our review of the General Information Section, Environmental Report and the Final Safety Analysis Report of your tendered application and have concluded that they are sufficiently complete to permit us to initiate our safety review.

Accordingly, your filing of the application should include three (3) originals signed under oath or affirmation by a duly authorized officer of your organization. In addition, your filing should include fifteen (15) copies of the General Information Section, forty one (41) copies of the Environmental Report and forty (40) copies of the Final Safety Analysis Report. As required by Sections 50.30 and Section 51.21 10 CFR Part 50 and 51, respectively, you should retain an additional ten (10) copies of the General Information Section, one hundred nine (109) copies of the Environmental Report and thirty (30) copies of the Final Safety Analysis Report for direct distribution in accordance with Enclosure 1 to this letter and further instructions which might be provided later. Within 10 days after filing, you must provide an affidavit that distribution has been made in accordance with this enclosure. All subsequent amendments to the ER and FSAR will require forty-one (41) and sixty (60) copies, respectively for distribution.

Our conclusion that the ER and FSAR is sufficiently complete is based on our evaluation of all the information filed taken as a whole, with the realization that substantive deficiencies may exist that need to be corrected during the review.

On October 28, 1980, the Commission approved a "Clarification of TMI Action Plan Requirements," now contained in NUREG-0737, which superesedes previous NUERGs on this subject. The St. Lucie FSAR should be amended to satisfy the modified and added requirements contained in NUREG-0737.

APP

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Dr. Uhrig

- 2 -

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On October 9, 1980, the Commission published a notice of proposed rulemaking entitled "Plan to Require Licensees and Applicants to Document Deviations From the Standard Review Plan" 45 Federal Register 67099. As proposed, Florida Power and Light would be required to identify and justify, prior to the issuance of the St. Lucie 2 operating license, all deviations in the FSAR from all acceptance criteria contained in the forthcoming revision of the Standard Review Plan. We will keep you informed as to the status and content of these requirements.

You will be advised of key milestones of the review as soon as a schedule is developed. During the course of our preliminary review of your ER and FSAR, the enclosed "Request for Additional Information" (Enclosure 2) was generated. These sections should be completed as soon as possible for our mutual benefit during the ensuing detailed technical review period. We will prepare the schedule based on the assumption that the outstanding items in each of the incomplete sections are received within six weeks from the docketing date. If this milestone cannot be met, it may be necessary for us to revise our review schedule.

If during the course of our review, you should believe there is a need to appeal a staff position because of disagreement, this need should be brought to the staff's attention as early as possible so that the appropriate meeting can be arranged on a timely basis. A written request is not necessary and all such requests should be initiated through our licensing project manager assigned to the St. Lucie Plant Unit 2, Victor Nerses. His telephone number is (301) 492-7468. The procedure is an informal one designed to allow opportunity for applicants to discuss with management, areas of disagreement in the case review.

Sincerely,

Original signed by
Darrell G. Eisenhut

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosures:

1. Distribution List for ER and FSAR
2. Request for Additional Information

cc w/enclosures:
See next page

Dist.

Docket File

LB#1 Rdg
DEisenhut
BJYoungblood
VNerses
SHanauer
MRushbrook
RTedesco
RVollmer
RPurple
BGrimes

JSaltzman, DE
JRutberg, OELD
TMurley
DRoss
RHartfield, MPA
WPaton

bcc: TERA TIC
NRC/PDR ACRS (16)
L/PDR
NSIC

OFFICE	DL:LB#1	DL:LB#1	OELD	DL:LB#1	DL:AP	DL:DYR	DL:D&R
SURNAME	VNerses	MRushbrook	WPaton	BJYoungblood	RLTedesco	RPurple	DEisenhut
DATE	2/4/81	2/4/81	2/ /81	2/5/81	2/5/81	2/ /81	2/6/81

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Dr. Robert E. Uhrig, Vice President
Advanced Systems and Technology
Florida Power & Light Company
P. O. Box 529100
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cc: Harold F. Reis, Esq.
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1025 Connecticut Avenue, N. W.
Washington, D. C. 20036

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Mr. Martin H. Hodder
1131 N. E. 86 Street
Miami, Florida 33138

Dr. David L. Hetrick
Professor of Nuclear Engineering
The University of Arizona
Tucson, Arizona 85721

Dr. Frank F. Hooper
School of Natural Resources
University of Michigan
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Resident Inspector
St. Lucie Nuclear Power Station
c/o U. S. Nuclear Regulatory Commission
P. O. Box 400
Jensen Beach, Florida 33457

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ENCLOSURE 1
DISTRIBUTION LIST

FEDERAL, STATE AND LOCAL OFFICIALS FOR ST. LUCIE PLANT, UNIT 2
FINAL SAFETY ANALYSIS REPORT AND AMENDMENTS THERETO

<u>ADDRESS</u>	<u>STATUS</u>	<u>MATERIAL TO BE SERVED</u>
Administrator Department of Environmental Regulation Power Plant Siting Section State of Florida 2600 Blair Stone Road Tallahassee, Florida 32301	(State Official)	Application, FSAR and Amendments thereto
County Administrator St. Lucie County 2300 Virginia Avenue Room 104 Ft. Pierce, Florida 33450	(Local Official)	Application, FSAR and Amendments thereto
EIS Coordinator U. S. Environmental Protection Agency Region IV Office 345 Courtland Street, N.E. Atlanta, Georgia 30308	(EPA Regional Office)	FSAR and Amendments thereto (2 copies)
Mr. R. E. Lyon Reliability and Statistics Division EG&E Idaho P. O. Box 1625 Idaho Falls, Idaho 83401	(National Lab)	FSAR and Amendments thereto (3 copies)
Mr. Ira Charak Argonne National Laboratory Building 301 9700 South Cass Avenue Argonne, Illinois 60439	(National Lab)	FSAR and Amendments thereto

ENCLOSURE 1
DISTRIBUTION LIST

FEB 9 1981

ENVIRONMENTAL REPORT, AMENDMENTS AND SUPPLEMENTS
(Number in parens is number of copies required)

COMMERCE

Dr. Sidney Galler (6)
Deputy Assistant Secretary for
Environmental Affairs
U. S. Department of Commerce-Room 3425
14th and Constitution, N.W.
Washington, D.C. 20230

Mr. Robert Ochinerro, Director (1)
National Oceanographic Data Center
Environmental Data Service - D7 - Rm. 428
2001 Wisconsin Avenue, N.W., Page Bldg. #1
Washington, D.C. 20235

INTERIOR

Mr. Bruce Blanchard, Director (18)
Office of Environmental Projects
Review
Department of the Interior - Room 4256
18th & C Streets, N.W.
Washington, D.C. 20240

DEPT. OF HEALTH & HUMAN SERVICES

Mr. Charles Custard, Director (2)
Office of Environmental Affairs
Department of Health and Human Services
200 Independence Avenue, S.W. - Room 537F
Washington, D.C. 20201

FEDERAL ENERGY REGULATION COMMISSION

Dr. Jack M. Heinemann (1)
Department of Energy - Room 3000
825 North Capitol Street, N.E.
Washington, D.C. 20426

ARMY ENGINEERING DISTRICT (1)

U. S. Army Engineering Division,
South Atlantic
510 Title Building
30 Pryor Street, S.W.
Atlanta, Georgia 30303

DEPARTMENT OF TRANSPORTATION

Mr. Joseph Canny (1)
Office of Environmental Affairs
Department of Transportation
400 - 7th Street, S.W. - Room 9422
Washington, D.C. 20590

cc: Capt. William R. Riedel (1)
Water Resources Coordinator
W/S 73 U.S.C.G. - Room 1112
Department of Transportation
2100 Second Street, S.W.
Washington, D.C. 20590

cc: Mr. Lee Santman, Director (1)
ATTN: Joe Nalevanko
Materials Transportation Bureau
2100 Second Street, S.W.
Washington, D.C. 20590

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Mr. Robert Garvey, Executive Director (1)
Advisory Council on Historic Preservation
1522 K Street, N.W., Suite 430
Washington, D.C. 20005

HOUSING AND URBAN DEVELOPMENT DEPARTMENT

Regional Administrator (1)
ATTN: Ms. Geraldine Thompson
1371 Peachtree Street, N.E.
Atlanta, Georgia 30309

SOIL CONSERVATION SERVICE

Mr. William E. Austin (1)
Federal Building
Room 248
P. O. Box 1208
Gainesville, Florida 32602

FOREST SERVICE

Forest Service (1)
U. S. Dept. of Agriculture, Region 8
Mr. Donald Percival
2586 Seagate Drive
Box 13549
Tallahassee, Florida 32301

DOT REGIONAL OFFICE

Secretarial Representative (1)
 U. S. Department of Transportation
 Mr. Glen M. Jermstad
 Suite 515
 1720 Peachtree Road, N.W.
 Atlanta, Georgia 30309

ENVIRONMENTAL PROTECTION AGENCY

Director, Criteria and Standards Division (1)
 Office of Radiation Programs (ANR-460)
 U. S. Environmental Protection Agency
 Washington, D.C. 20460

REGIONAL OFFICE (2)

EIS Coordinator
 U. S. Environmental Protection Agency
 Region IV Office
 345 Courtland Street, N.E.
 Atlanta, Georgia 30308

STATE OFFICIAL (1)

Administrator
 Department of Environmental Regulation
 Power Plant Siting Section
 State of Florida
 2600 Blair Stone Road
 Tallahassee, Florida 32301

LOCAL OFFICIAL (1)

County Administrator
 St. Lucie County
 2300 Virginia Avenue
 Room 104
 Ft. Pierce, Florida 33450

CLEARINGHOUSESState Clearinghouse (10)

Bureau of Intergovernmental Relations
 Division of State Planning
 Department of Administration
 660 Apalachee Parkway
 Tallahassee, Florida 32304

Areawide Clearinghouse (1)

Treasure Coast Regional Planning Council
 P. O. Box 2395
 Stuart, Florida 33494

OTHERS

Librarian (1)
 Thermal Reactors Safety Group
 Brookhaven National Lab - Bldg. 130
 Upton, Long Island, New York. 11973

Mr. Thomas D. Wolsko (1)
 Energy and Environmental Systems Division
 Building 12B
 Argonne National Laboratory
 9700 South Cass Avenue
 Argonne, Illinois 60439

Ms. Liz Hannon (1)
 Atomic Industrial Forum
 1016 - 16th Street, N.W., Suite 850
 Washington, D.C. 20036

FEB 9 1981

- 1
(1.8) Table 1.8-1 should indicate the extent to which the applicant intends to comply with all applicable NRC regulatory guides and should indicate any proposed exceptions to the regulatory position.

- 2
(1.9.1) Section 1.9.1 and the remainder of the FSAR should address the requirements given in NUREG-0737, TMI-Related Requirements for New Operating Licenses.

- 3
(2.1.2.1) Section 2.1.2.1 states "FP&L controls the use of all land and water inside the site boundary (property) lines." Part of the exclusion area appears to be outside the property lines and extends into a body of water (Figure 2.1-2). Address the information requested in Section 2.1.2.1 of Regulatory Guide 1.70 Revision 3.

- 4
(2.4.6) Section 2.4.6 of the FSAR states "The areas of the U.S. that are most susceptible to tsunamis are bordered by the Pacific Ocean or Gulf of Mexico. The site is on the Atlantic Coast and therefore tsunamis are not a phenomenon that could affect the St. Lucie site." Although the Atlantic Coast may not be as susceptible to tsunamis flooding as other locations, this is not adequate justification for not evaluating maximum tsunami flooding at St. Lucie. Provide the information requested in Regulatory Guide 1.70 Revision 3, Sections 2.4.6 and 2.4.6.1 through 2.4.6.7.

- 5
(2.5.4.5) Discuss measures to monitor foundation rebound and heave as specified in Regulatory Guide 1.70 Revision 3.

- 6
(3.2.1) Per Regulatory Guide 1.70 provide a table or otherwise clearly identify all structures, systems, and components which are designed for the Operating Basis Earthquake.
- 7
(3.2.2) Per Regulatory Guide 1.70, provide a discussion of compliance with 10 CFR 50.55a.
- 8
(3.3.2.2.) Per Regulatory Guide 1.70, discuss the procedures employed for transforming the tornado-generated differential pressure into an effective reduced pressure if venting of a structure is used.
- 9
(3.4.1.1) Per Regulatory Guide 1.70 Revision 3, describe the procedures required to bring the reactor to a cold shutdown for the flood conditions identified in Section 2.4.1.4.
- 10
(3.5.1.1) Per Regulatory Guide 1.70, identify in FSAR Figure 3.5-3 the missiles to be protected against for all equipment.
- 11
(3.5.3) Per Regulatory Guide 1.70, discuss the potential for generating secondary missiles by spalling and scabbing of concrete barriers.
- 12
(3.8.5.1) Per Regulatory Guide 1.70, discuss the effect of waterproofing membranes on the capability of the foundation to transfer shears.
- 13
(3.9.4.2) Per Regulatory Guide 1.70, provide a discussion of NRC general design criteria, regulatory guides, and positions that are applied in the design, fabrication, construction, and operation of the CEDM.
- 14
(3.11.1) Per Regulatory Guide 1.70, provide in FSAR Table 3.11-1 chemical and vibration (non-seismic) definitions.

- 15 (4.3.2.4) Per Regulatory Guide 1.70, provide in your discussion of control requirements the effects of pH, permitted rod insertions at power and error allowances, and the required and expected shutdown margin as a function of time in cycle (including uncertainties in shutdown margins and experimental confirmation from operating reactors).
- 16 (4.4.4.2) Per Regulatory Guide 1.70, discuss the effect of partial or total isolation of a loop on the core hydraulics evaluation.
- 17 (4.5.2.3) Per Regulatory Guide 1.70 Revision 3, discuss conformance to the requirements of the ASME B&PV code.
- 18 (3.5.1.2) Per Regulatory Guide 1.70 Revision 3, discuss missiles due to gravitational effects. Include a list of all such missiles.
- 19 (3.9.3.1) Per Regulatory Guide 1.70 provide the following for ASME code Class 1 components, CS structures, and ASME code Class 1 component supports:
- a. A summary description of mathematical or test models used,
 - b. Methods of calculation or test, including simplifying assumptions, identification of method of system and component analysis used, and demonstration of their compatibility in the case of components and supports designed to faulted limits.
- 20 (3.6) FSAR Section 3.6 cannot be reviewed until the appendices "To be supplied in a later amendment" are supplied. Provide the appendices or supply the approximate date of the amendment to be provided.

- 21 (7.1.2) Per the requirements of Regulatory Guide 1.70 address or reference compliance with Regulatory Guides 1.47, 1.53, 1.63, 1.63, 1.68, 1.73, 1.75, 1.80, 1.89, 1.97, 1.100, 1.118 in Section 7.1.2.
- 22 (7.2.2) Per the requirements of Regulatory Guide 1.70, provide a discussion of a spurious control rod withdrawal transient in Section 7.2.2.
- 23 (7.2) The information listed as "Later" for Table 7.2-5 and Figure 7.2-7 will be required to commence the review of the applicable sections.
- 24 (7.5) Per the requirements of Regulatory Guide 1.70, provide the accuracy of all the instruments listed in Table 7.5-1.
- 25 (8.1) Per the requirements of Regulatory Guide 1.70, provide or reference compliance with Regulatory Guide 1.131 and IEEE Std. 387 in Section 8.1.
- 26 (10.1) Figures 10.1-1, 10.1-2 and 10.1-3 are not legible (the P&I drawing print reduction is too small). Provide legible figures.
- 27 (10.2.3) Provide the material chemical analysis of the turbine disk and rotor.
- 28 (10.2.3) Identify the specific fracture mechanics analytical methods used and attendant key assumptions.
- 29 (10.2.3) Give the high temperature stress-rupture material properties of the high pressure turbine rotor. Describe the method used to obtain the properties.

- 30 (10.2.3) Describe or reference the specific criteria used to insure protection against brittle failure of the low-pressure turbine disks. Include detailed information on ductile-brittle transition temperature (NDT or FATT) and minimum operating temperature.
- 31 (10.2.3) Provide the following design information for low-pressure disks and high-pressure rotors: 1) The tangential stress due to centrifugal loads, interference fit, and thermal gradients at the bore region at normal speed and design overspeed, and 2) The maximum tangential and radial stresses and their location.
- 32 (10.2.5) Describe the inservice inspection program for main steam stop and control valves and reheat stop and intercept valves as applicable.
- 33 (10.3.4) Discuss or reference provisions made to allow for inservice inspection of main steam lines.
- 34 (10.4.1.3) What conductivity limits of the cooling water are permitted and how long may the condenser operate in a degraded, contaminated condition without affecting the condensate/feedwater quality?
- 35 (10.4.7) Identify and describe all normal operating transients that could cause the water level in the steam generator to drop below the sparger or uncover the feedwater nozzles (J-tubes).
- 36 (10.4.7) Provide main feedwater piping isometric drawings (from the steam generators to the restraint on the upstream side of the isolation valve outside the containment) for both steam generators. Include pipe sectional lengths between bends and horizontal and vertical runs. Show the auxiliary feedwater inlet location.

- 37
(10.4.7) Provide a drawing of the steam generator feedwater sparger with J-tubes. Give pertinent dimensional data and show details from the sparger inlet including penetrations through the steam generator wall.
- 38
(10.4.9.2) State the maximum length of time the plant can stand without normal feedwater and the minimum auxiliary feedwater flow rate required after this time period.
- 39
(11.2.2) In Table 11.2-8 indicate the basis for RCS fraction for sample and laboratory drains.
- 40
(11.4.2) Provide P&I drawings that show system interconnections and seismic and quality group interfaces.
- 41
(13.1.2.3) Reference or describe the proposed means of assigning shift responsibilities for implementing the radiation protection program on a round-the-clock basis.
- 42
(14.2.1) The FSAR states "The startup testing program is developed using the recommendations of Regulatory Guide 1.68, Preoperational and Initial Startup Test Program for Water Cooled Power Reactors, 11/73 (RO)." Your test program should meet the requirements of Regulatory Guide 1.68, Revision 2.
- 43
(15) Chapter 15 does not contain or reference either sufficient backup information and data or justification of the accident analysis methodology for the staff to proceed with our review. This should be provided with our review. This should be provided for the following areas:

1. The five frequency groups and the acceptance guidelines assigned to these groups,
2. Event identification and combinations in conjunction with the assigned frequencies and associated conservatism,
3. The selection of the limiting event or event combinations for analysis within a group, and
4. The evaluation of parameters that may affect the performance of barriers (i.e., containment, filters etc.) that restrict or limit the transport of radioactive material to the public, and information to fully substantiate the dose analysis and conservatism so as to allow an independent analysis to be performed by the NRC staff as specified in Section 15 of Regulatory Guide 1.70 Revision 3.

44
(15)

Provide the design basis LOCA analysis as specified in Regulatory Guide 1.70, Revision 3 and Standard Review Plan 15.6.5 and associated appendices.

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Request for Additional Information
Environmental Report
ST. LUCIE PLANT, UNIT NO. 2
DOCKET NUMBER 50-389

- 240.1 Descriptions of floodplains, as required by Executive Order 11988,
(2.4) Floodplain Management, have not been provided. The definition used in
the Executive Order is:

Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum that area subject to a one percent or greater chance of flooding in any given year.

- a. Provide descriptions of the floodplains adjoining the Atlantic Ocean, the Indian River and of all other water bodies, including intermittent water courses, within or adjacent to the site. On a suitable scale map provide delineations of those areas that will be flooded during the one-percent chance flood in the absence of plant effects (i.e., pre-construction floodplain).
- b. Provide details of the methods used to determine the floodplains in response to a. above. Include your assumptions of and bases for the pertinent parameters used in the computation of the one-percent flood flow and water elevation. If studies approved by Flood Insurance Administration (FIA), Housing and Urban Development (HUD) or the Corps of Engineers are available for the site or adjoining area, the details of analyses need not be supplied. You can instead provide the reports from which you obtained the floodplain information.
- c. Identify, locate on a map, and describe all structures and topographic alterations in the floodplains.

- 240.2
(5.0)
- a. Discuss the hydrologic effects of all items identified in response to question 240.1c. Discuss the potential for altered flood flows and levels, offsite. Discuss the effects on offsite areas of debris generated from the site during flood events.

 - b. Provide the details of your analysis used in response to a. above. The level of detail is similar to that identified in item 240.1b.

1. Identify your latest scheduled commercial operating date for St. Lucie Unit 2.
2. Discuss status of your proposed sale of 55MW of St. Lucie Unit 2 and your planned firm purchase of capacity from Tampa Electric Co. in the 1985-87 timeframe. Is it a correct interpretation of Table 1.1-9 that the proposed sale has been deducted from capacity but the proposed purchase has not been added to capacity, and if so, why?
3. What reserve margin as a percentage of peak load demand does FPL view as necessary to maintain minimum reliability conditions on its system in the 1983-85 timeframe?
4. For the year 1980 show (a) breakdown of electric energy generated by FPL by fuel (i.e., gas, oil, nuclear, etc.) and (b) the average production cost (fuel and O & M) by fuel type. Identify any availability problems you anticipate may occur in the foreseeable future with respect to any of the fuels you are currently dependent on.
5. In Tables 1.1-2 and 1.1-3, identify where actual values end and projections begin. If actual energy and peak load values only go thru 1978 or 1979, provide actual values thru 1980. Also, in Table 1.1-3 indicate whether the peak load values include the interruptible loads.
6. Explain your assumption that a delay in St. Lucie 2 will precipitate a delay in the Morton coal Unit 3.
7. What percentage of St. Lucie Unit 2 is currently completed (specifically, what portion of the \$925 million estimated capital cost has been spent)?
8. Provide assumptions and trace through the calculations performed in your conclusions in section 8.1-2 that,
"The operation of St. Lucie Unit 2 will result in an annual savings of an estimated 8.5 million barrels of crude oil per year. This annual saving translates into a dollar saving of \$137 million per year (1978 delivered price)".
9. Present a production cost analysis which shows the difference in system production costs associated with the availability vs. unavailability of St. Lucie Unit 2 for the years 1983 thru 1987 (first five years of proposed operation). Perform analysis assuming electrical energy demand grows at (a) FPL's official forecasted growth rate, and (b) one-half FPL's official forecasted growth rate. Show all underlying assumptions used in the production cost analysis, and identify sources of all replacement energy.
10. Provide a compact updated table showing all environmental costs associated with operation (information should be of summary nature identifying the impact, unit of measurement, magnitude of impact, and evaluation of impact, (i.e., whether its negligible, or significant, etc.). This information is typically presented in tabular form in ER Chapter 11.