Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

May 23, 2002

L-2002-089
10 CFR 50.90

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Proposed License Amendments
Technical Specification Improvements Associated with
Handling of Recently Irradiated Fuel Assemblies

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) requests to amend Facility Operating Licenses DPR-67 and NPF-16 for St. Lucie Units 1 and 2. The proposed amendments revise Unit 1 and Unit 2 Technical Specifications (TS) to incorporate line item improvements associated with the handling of recently irradiated fuel assemblies in accordance with Revision 2 of NUREG-1432, Standard Technical Specifications Combustion Engineering Plants (STS) and a portion of Nuclear Energy Institute (NEI) TS Task Force (TSTF) change traveler TSTF-51, Revision 2. The proposed changes modify Unit 1 and Unit 2 TS Sections 3.9.4 and 3.9.9, Unit1 TS Section 3.9.12, and Unit 2 TS Sections 3.6.6.1.

TSTF-51, incorporated into Revision 2 of the STS, removed the TS applicability regarding operability of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) when handling fuel assemblies that have decayed a sufficient period of time such that dose consequences for the postulated fuel handling accident (FHA) remain well below the limits given in 10 CFR 100 and within the limits given in the NRC Standard Review Plan (SRP) when these systems are not available. The design bases FHA analyses for St. Lucie Units 1 and 2 are based on a fission product inventory that has decayed 72 hours. Further, the FHA analyses do not credit the subject systems and rely on decay of the fission product inventory to ensure that the dose consequences remain below the SRP limits. Therefore, the TSs that pertain to these systems during fuel handling can be revised to limit their applicability to recently irradiated fuel assemblies. Recently irradiated fuel will be defined in the TS Bases as fuel that has occupied part of a critical reactor core within the previous 72 hours. Partial implementation of STS criteria was applied to containment penetration specifications during refueling by Unit 1 and Unit 2 License Amendments 172 and 120, respectively. The proposed license amendments would incorporate the remaining applicable line item improvements and provide consistency between the two St. Lucie units.

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Attachment 1 is a description of the proposed changes and the supporting Safety Analysis. Attachment 2 is the Determination of No Significant Hazards and Environmental Considerations. Attachments 3 and 4 are marked up copies of the proposed TS changes. Attachments 5 and 6 are information copies of the proposed changes to the TS Bases. Attachments 7 and 8 are copies of the retyped TS pages.

The St. Lucie Facility Review Group and the Florida Power & Light Company Nuclear Review Board have reviewed the proposed amendments.

In accordance with 10 CFR 50.91 (b)(1), a copy of the proposed amendments is being forwarded to the State Designee for the State of Florida.

Approval of these proposed license amendments is requested by September 6, 2002 to support the fall 2002 Unit 1 refueling outage (SL1-18). Please issue the amendments to be effective on the date of issuance and to be implemented within 60 days of receipt by FPL. Please contact George Madden at 772-467-7155 if there are any questions about this submittal.

Very truly yours,

Donald E. Jernigan
Vice President
St. Lucie Plant

DEJ/GRM

Attachments

cc: Mr. William A. Passetti, Florida Department of Health

STATE OF FLORIDA)
) ss.
COUNTY OF ~~ST. LUCIE~~ MIAMI-DADE)

Donald E. Jernigan being first duly sworn, deposes and says:

That he is Vice President, St. Lucie Plant, for the Nuclear Division of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this 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.

Donald E. Jernigan

STATE OF FLORIDA
COUNTY OF ~~ST LUCIE~~ MIAMI-DADE

Sworn to and subscribed before me

this 23RD day of May, 2002
by Donald E. Jernigan, who is personally known to me.

Olga Hanek
Name of Notary Public - State of Florida

OLGA HANEK
MY COMMISSION # CC 926970
EXPIRES: June 18, 2004
Bonded Thru Notary Public Underwriters

(Print, type or stamp Commissioned Name of Notary Public)

ATTACHMENT 1

SAFETY ANALYSIS

Introduction

Florida Power and Light Company (FPL) proposes to revise the St. Lucie Units 1 and 2 Technical Specifications (TS) to incorporate line item improvements associated with the handling of recently irradiated fuel assemblies in accordance with Revision 2 of NUREG-1432, Standard Technical Specifications Combustion Engineering Plants (STS) and TSTF-51. The STS remove the TS applicability regarding operability of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) when handling fuel assemblies that have decayed a sufficient period of time such that dose consequences for the postulated fuel handling accident (FHA) remain below the limits of the Standard Review Plan (SRP) when these systems are not available. The design bases FHA analyses for St. Lucie Units 1 and 2 are based on a fission product inventory that has decayed 72 hours. Further, the FHA analyses do not credit the subject systems and rely on decay of the fission product inventory to ensure that the dose consequences remain below the SRP limits. Therefore, the TSs that pertain to these systems during fuel handling can be revised to limit their applicability to recently irradiated fuel assemblies. Recently irradiated fuel will be defined in the TS Bases as fuel that has occupied part of a critical reactor core within the previous 72 hours. Partial implementation of STS criteria was applied to containment penetration specifications during refueling by Unit 1 and Unit 2 License Amendments 172 and 120, respectively. The proposed license amendments would incorporate the remaining applicable line item improvements and provide consistency between the two St. Lucie units.

Background

TSTF-51 Revision 2 was incorporated into Revision 2 of NUREG-1432. TSTF-51 removes the TS applicability regarding operability of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) when handling fuel that has decayed a sufficient period of time such that dose consequences for the postulated FHA remain below the limits of the SRP when these systems are not available. The design basis FHA analyses for St. Lucie Units 1 and 2 are based on a fission product inventory that has decayed 72 hours giving no credit for the subject systems. Therefore, the TSs that pertain to these systems can be revised to limit their applicability to recently irradiated fuel assemblies, where recently irradiated fuel will be defined in the TS bases as fuel that has occupied part of a critical reactor core within the previous 72 hours.

The analyses of the dose consequences for the FHA for St. Lucie Units 1 and 2 were performed based on the methodology outlined in Regulatory Guide (RG) 1.25 (Reference 6). The FHA analyses assume that the entire fission gas inventory in the fuel rod gap for all the fuel rods in the highest power fuel assembly is released over a two-hour period.

There is no credit taken for containment or the fuel handling building isolation or filtering systems. Therefore, the consequences of these analyses bound the FHAs in the fuel handling building and in the reactor containment building. In these FHA analyses, the minimum water level above the fuel is 23 feet, supporting a conservative assumption of an overall decontamination factor of 100 for the iodine isotopes released from the damaged fuel assembly. Also, the FHA analyses assume that the containment does not preclude or mitigate the dispersion of the activity release from the damaged fuel assembly.

The methodology used in calculating the control room doses is derived from an expression provided in *Nuclear Power Plant Control Room Ventilating System Design for Meeting General Design Criteria (GDC) 19*, 13th AEC Air Cleaning Conference, CONF740-807, Vol. 1, which determines the radiological doses based on an activity balance within the control room. The design basis Westinghouse FHA analyses, Determination of Fuel Handling Accident Radiological Releases in Support of St. Lucie TSs 3.9.4 (references 14 and 15) were submitted to the NRC in support of License Amendments 172 and 120 by FPL letters L-2000-222 dated October 30, 2000 and L-2001-083 dated June 22, 2001 for Unit 1 and Unit 2, respectively.

The results of the Unit 1 analysis are as follows:

- Control Room Dose
  8.48 rem – thyroid and 0.013 rem – whole body
- Limiting Exclusion Area Boundary Dose (EAB)
  59.1 rem – thyroid and 0.68 rem – whole body
- Low Population Zone Dose (LPZ)
  27.9 rem – thyroid and 0.319 rem – whole body

The results of the Unit 2 analysis are as follows:

- Control Room Dose
  9.39 rem – thyroid and 0.02 rem – whole body
- Limiting Exclusion Area Boundary Dose
  61.6 rem – thyroid and 0.75 rem – whole body
- Low Population Zone Dose
  26.7 rem – thyroid and 0.33 rem – whole body

These values remain well within the criteria specified in NUREG-0800, Standard Review Plan, Section 15.7.4, Radiological Consequences of Fuel Handling Accidents.

The NRC acceptance criteria for control room habitability as provided in Section 6.4 in NUREG-0800 is 30 rem for inhalation thyroid dose and 5 rem for the whole body gamma dose. The calculated control room doses indicate that these dose acceptance criteria are met with significant margins.

Description of the Proposed Change

FPL proposes to change the following TSs in support of the proposed amendments. Revised text is in ***Bold Italics.***

1. Unit 1 TS 3/4.9.4, Refueling Operations, Containment Penetrations:

LIMITING CONDITION FOR OPERATION:
3.9.4 The containment penetrations shall be in the following status:

b. A minimum of one door in each airlock is closed, ~~***or, both doors of the containment personnel airlock may be open if:***~~
~~***1. at least one personnel airlock door is capable of being closed,***~~
~~***2. the plant is in MODE 6 with at least 23 feet of water above the fuel in the reactor core, and***~~
~~***3.a designated individual is available outside the personnel airlock to close the door.***~~

Add new note to replace deleted text:

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel within the containment.

ACTION:
With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel in the containment.

SURVEILLANCE REQUIREMENTS:
4.9.4 Each of the above required containment penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel in the containment by:

2. Unit 1 TS 3/4.9.9, Refueling Operations, Containment Isolation System:

APPLICABILITY: ~~***During CORE ALTERATIONS***~~
During movement of ***recently*** irradiated fuel assemblies within containment

SURVEILLANCE REQUIREMENTS:

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during ~~***CORE ALTERATIONS***~~ ***movement of recently irradiated fuel assemblies*** by verifying that containment isolation occurs on manual initiation and on a high radiation signal from two of the containment radiation monitoring instrumentation channels.

3. Unit 1 TS 3.9.12, Refueling Operations, Fuel Pool Ventilation System - Fuel Storage:

APPLICABILITY: Whenever ***recently*** irradiated fuel is in the spent fuel pool.

ACTION:

a. With no fuel pool ventilation system OPERABLE, suspend all operations involving movement of ***recently irradiated*** fuel within the spent fuel pool or crane operation with loads over the ***recently irradiated*** spent fuel ~~***pool***~~ until at least one fuel pool ventilation system is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS:

Minor editorial changes to combine hyphenated words "maintenance" and "ventilation."

4. Unit 2 TS 3.6.6.1, Containment Systems, Secondary Containment, Shield Building Ventilation System (SBVS)

APPLICABILITY: At all times in MODES 1, 2, 3, and 4.
In addition, during movement of ***recently*** irradiated fuel assemblies or during crane operations with loads over ***recently*** irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6.

ACTION:

c. (1) With one SBVS inoperable in any MODE, restore the inoperable system to OPERABLE status within 7 days; otherwise, suspend movement of ***recently*** irradiated fuel assemblies within the Spent Fuel Storage Pool and crane

operations with loads over ***recently*** irradiated fuel in the Spent Fuel Storage Pool.

(2) With both SBVS inoperable in any MODE, immediately suspend movement of ***recently*** irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over ***recently*** irradiated fuel in the Spent Fuel Storage Pool.

5. Unit 2 TS 3/4.9.4, Refueling Operations, Containment Building Penetrations

LIMITING CONDITION FOR OPERATION:

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts, ~~***or the equipment door may be open if:***~~

~~***1. It is capable of being closed with four bolts within 30 minutes,***~~

~~***2. The plant is in MODE 6 with at least 23 feet of water above the reactor pressure vessel flange, and***~~

~~***3. A designated crew is available at the equipment door to close the door.***~~

b. A minimum of one door in each airlock is closed~~***, or both doors of each containment airlock may be open if:***~~

~~***1. At least one door of each airlock is capable of being closed,***~~

~~***2. The plant is in MODE 6 with at least 23 feet of water above the reactor pressure vessel flange, and***~~

~~***3. A designated individual is available outside each open airlock to close the door.***~~

Add new note to replace deleted text:

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS:

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel in the containment building by:

Editorial change to move the text from page 3/4 9-4a to the bottom of Page 3/4 9-4.

6. Unit 2 TS 3/4.9.9, Refueling Operations, Containment Isolation System

APPLICABILITY: During ~~***CORE ALTERATIONS or***~~ movement of ***recently*** irradiated fuel within containment.

SURVEILLANCE REQUIREMENTS:

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during ~~***CORE ALTERATIONS***~~ ***movement of recently irradiated fuel*** by verifying that containment isolation occurs on manual initiation and on a high radiation test signal from each of the containment radiation monitoring instrumentation channels.

Justification

The proposed TS changes to the applicability, actions, and surveillance requirements of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) are based on the FHA analyses that demonstrate that sufficient radioactive decay has occurred after 72 hours such that the resulting dose consequences are within SRP limits. The systems that have been included in the proposed change will have administrative controls in place to assure that the systems are available and can be promptly returned to operation to further reduce dose consequences. These administrative controls will include a single normal or contingency method to promptly close the primary or secondary containment penetrations. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated FHA such that it can be treated and monitored.

Evaluation

Containment Integrity

TS 3.6.1.1, Containment Integrity, requires that containment integrity be maintained while in MODES 1 through 4. During MODES 1 through 4, the reactor coolant system contains

significant energy that provides the motive force for the expulsion of radionuclides subsequent to a design basis accident (DBA). The relaxation described in this evaluation is being sought for MODE 6 where the effect of a FHA inside containment is the event of concern and is bounded by the DBA.

Containment Closure

TS 3.9.4, Containment Penetrations, requires that a minimum of one door on each containment airlock, the equipment door, as well as other containment penetrations (except as permitted under administrative controls), be closed during core alterations or movement of irradiated fuel within the containment. This requirement is more conservative than the assumptions used in the St. Lucie Unit 1 and Unit 2 FHA analyses that assumed in the event of a FHA in containment, all of the iodine and noble gases that become airborne within the containment, escape within a two-hour period and reach the site boundary and low population zone with no credit taken for the containment building barrier. The FHA analyses also assume a minimum post-reactor shutdown decay time of 72 hours prior to fuel movement to ensure that the dose consequences are within SRP limits. The proposed changes eliminate the applicability of this TS for core alterations or when irradiated fuel that has decayed a minimum of 72 hours is being moved. Since the only accident postulated to occur during core alterations that results in significant radioactive release is the FHA, removing the requirement for applicability during core alterations is justified. The FHA analyses demonstrate that sufficient decay has occurred such that the primary path for mitigating the dose consequences of the FHA no longer includes the functions of the active containment systems. Instead, water level and decay time are the primary success paths for mitigating the dose consequences of the FHA. Nevertheless, containment closure capability will have administrative controls in place to assure that a single normal or contingency method to promptly close the primary or secondary containment penetrations will be available. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated FHA such that it can be treated and monitored.

Containment Isolation System

TS 3.9.9, Containment Isolation System, requires that the system be operable during core alterations or the movement of irradiated fuel. The proposed changes eliminate the applicability of this TS for core alterations or when irradiated fuel that has decayed a minimum of 72 hours is being moved. Since the only accident postulated to occur during core alterations that results in significant radioactive release in the FHA, removing the requirement for applicability during core alterations is justified. As discussed above, isolation of the containment is not assumed in the FHA analyses. Instead, water level and decay time are the primary success paths for mitigating the dose consequences of the FHA. However, the FHA assumes that the control room ventilation system is operable and that outside air intake will be isolated in 30 minutes and switches to a filtered recirculation

mode. This can be accomplished either by automatic or manual initiation of the containment isolation system (CIS) or by manual isolation of the control room outside air intakes. Operator action within 30 minutes of notification of a FHA is reasonable since direct communication between the control room and refueling personnel is required during core alterations by TS 3.9.5.

Fuel Pool Ventilation System (Unit 1) and Shield Building Ventilation System (Unit 2)

TS 3.9.12, Fuel Pool Ventilation System, for Unit 1 and TS 3.6.6.1, Shield Building Ventilation System, for Unit 2, require that the systems be operable when irradiated fuel is located within the fuel pool. The proposed changes eliminate the applicability of this TS when irradiated fuel that has decayed a minimum of 72 hours is being moved or for crane operations with loads over such irradiated and decayed fuel. The FHA analyses were performed assuming no credit for fuel pool ventilation nor shield building ventilation filtering systems. Nevertheless, these systems will have administrative controls in place to assure that the systems can be returned to operation by a single normal or contingency method. These methods need not completely block the penetrations or be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated FHA such that it can be treated and monitored.

Applicable Regulatory Requirements/Criteria

NUREG-0800, Standard Review Plan, Section 15.7.4, Radiological Consequences of Fuel Handling Accidents, describes the acceptance criteria for this event as, "the calculated doses at the exclusion boundary are well within the exposure guidelines of 10 CFR Part 100...*well within* shall mean 25% or less of 10 CFR Part 100, i.e., 75 Rem to the thyroid and 6 Rem for the whole-body doses." Neither the original nor the revised design basis FHA analyses take credit for the containment building barriers. The results of the calculations performed show that the offsite dose consequences of a fuel assembly dropped inside containment are well within the 10 CFR Part 100 limits

Regulatory Guide 1.25 is the NRC guidance that describes a method acceptable to the NRC staff for licensee evaluation of the potential radiological consequences of a FHA. The parameters of concern and the acceptance criteria applied are based on the requirements of 10 CFR 100 with respect to the calculated radiological consequences of a FHA and GDC 61 with respect to appropriate containment, confinement, and filtering systems.

NUREG/CR-5009, Assessment of the Use of Extended Burnup Fuel in Light Water Power Reactors, relates to the expected release fraction for the radioactive iodine. According to this report, the calculated release fraction for extended burnup fuel may be up to 20% higher than that assumed in Regulatory Guide 1.25 for iodine-131. See NUREG/CR-3011 and RG 1.109 (references 8 and 13) for related guidelines.

The methodology, assumptions, and results of the revised FHA with the proposed TS changes demonstrate compliance with the applicable regulatory requirements, criteria, and guidance.

10 CFR Part 50, Appendix A, General Design Criteria (GDC)

GDC 16, Containment Design, requires that reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as the postulated accident conditions require.

GDC 19, Control Room, requires that a control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

GDC 54, Piping Systems Penetrating Containment, requires that piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits.

GDC 56, Primary Containment Isolation, describes the isolation provisions that must be provided for lines that connect directly to the containment atmosphere and which penetrate primary reactor containment unless it can be demonstrated that the isolation provisions for a specific class of lines are acceptable on some other defined basis.

GDC 61, Fuel Storage and Handling and Radioactivity Control, requires that the fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions.

The assumptions and results of the FHA analyses, coupled with the proposed TS changes comply with the above GDCs.

Conclusions

Based on review of the licensing bases documentation and the results of the St. Lucie Unit 1 and Unit 2 FHA analyses, it is concluded that the proposed license amendments are acceptable and that code requirements are maintained.

References

1. St. Lucie Unit 1, Updated Final Safety Analysis Report, Amendment 18.

2. St. Lucie Unit 2, Updated Final Safety Analysis Report, Amendment 13.

3. St. Lucie Unit 1, Technical Specifications, Amendment 180.

4. St. Lucie Unit 2, Technical Specifications, Amendment 123.

5. NUREG-0800, NRC Standard Review Plan

6. Regulatory Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," 1972.

7. Murphy, K. G. and Campe, K. M., "Nuclear Power Plant Control Room Ventilating System Design for Meeting General Design Criteria 19," 13th AEC Air Cleaning Conference, CONF740-807, Vol. 1, pp. 401-430.

8. NUREG/CR-3011, "Dose Projection Considerations for Emergency Conditions at Nuclear Power Plants," Stoetzel, G. A., et al, May 1983.

9. SL2-FE-0181, Rev. 09, "St. Lucie Unit 2 EPAC," H. F. Jones, Jr., October 23, 1998.

10. NUREG/CR-5009, "Assessment of the Use of Extended Burnup Fuel in Light Water Power Reactors," D. A. Baker, et al, February 1988.

11. "Table of Isotopes," Edited by Lederer, C. M., and Shirley, V. S., 7th Edition, John Wiley & Sons, New York, 1978.

12. ICRP Publication II, "Recommendations of the International Commission on Radiological Protection," A Report of Committee 11 on Permissible Dose for Internal Radiation (1959), Pergamon Press, New York, 1960.

13. Regulatory Guide 1.109, Rev. 1, "Calculation of Annual Doses to Man From Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR

Part 50, Appendix I," October 1977.

14. Westinghouse Nuclear Systems Analysis Number F-FSA-C-000001, "Determination of Fuel Handling Accident Radiological Releases in Support of Relaxation of St. Lucie Unit 1 Tech Spec 3.9.4," dated October 2, 2000.

15. Westinghouse Nuclear Systems Analysis Number L-FSA-C-000001, "Determination of Fuel Handling Accident Radiological Releases in Support of Relaxation of St. Lucie Unit 2 Tech Spec 3.9.4," dated March 1, 2001.

16. NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," Revision 2, April 2001.

17. NRC Letter Issuing Amendment 172 to Facility Operating License No. DPR-67 for St. Lucie Plant, Unit 1, K. N. Jabbour to T.F. Plunkett, dated February 27, 2001.

18. NRC Letter Issuing Amendment 120 to Facility Operating License No. NPF-16 for St. Lucie Plant, Unit 2, B. T. Moroney to J. A. Stall, dated October 22, 2001.

19. Nuclear Energy Institute Technical Specification Task Force (TSTF) Change Traveler TSTF-51, Revision 2, Revise containment requirements during handling irradiated fuel and core alterations.

ATTACHMENT 2

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Introduction

Florida Power and Light Company (FPL) proposes to revise the St. Lucie Units 1 and 2 Technical Specifications (TS) to incorporate line item improvements associated with the handling of recently irradiated fuel assemblies in accordance with Revision 2 of NUREG-1432, Standard Technical Specifications Combustion Engineering Plants (STS) and TSTF-51, Revision 2. The STS remove the applicability of TSs regarding operability of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) when handling fuel assemblies that have decayed a sufficient period of time such that dose consequences for the postulated fuel handling accident (FHA) remain below the limits of the NRC Standard Review Plan (SRP) when these systems are not available. The design bases FHA analyses for St. Lucie Unit 1 and Unit 2 are based on a fission product inventory that has decayed 72 hours. Further, these FHA analyses do not credit the subject systems and rely on decay of fission product inventory to ensure that dose consequences remain below SRP limits. Therefore, the TSs that pertain to these systems during fuel handling can be revised to limit their applicability to recently irradiated fuel assemblies, where recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours without impacting the analyses. Partial implementation of the STS criteria was applied to containment penetration specifications during refueling by License Amendments 172 and 120 for Unit 1 and Unit 2, respectively. The proposed amendments would incorporate the remaining applicable line item improvements and provide consistency between the two St. Lucie units.

Determination of No Significant Hazards Consideration

The standards used to arrive at a determination that a request for amendment involves a no significant hazards consideration are included in the Commission's regulation, 10 CFR 50.92, which states that no significant hazards considerations are involved if the operation of the facility in accordance with the proposed amendments would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed as follows:

(1) Operation of the facility in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to the St. Lucie Units 1 and 2 TSs incorporate line item improvements that are based on assumptions in the postulated fuel handling accident analyses. These proposed changes remove the applicability of TSs regarding operability of certain systems (containment penetrations, spent fuel pool and shield building ventilation, and containment isolation) when handling fuel assemblies that have decayed a sufficient period of time. The results of the FHA analyses demonstrate that sufficient radioactive decay has occurred after 72 hours such that the resulting dose consequences are well within the limits given in 10 CFR 100 and within the limits given in the Standard Review Plan, NUREG-0800. The systems that have been included in these proposed changes will have administrative controls in place to assure that systems are available and can be promptly returned to operation to further reduce dose consequences. These administrative controls will include a single normal or contingency method to promptly close the primary or secondary containment penetrations. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated FHA such that it can be treated and monitored. This will result in lower doses than those calculated for the FHA.

The equipment or systems involved are not initiators of an accident. Operability of these systems or equipment during fuel movement and/or core alterations has no affect on the probability of any accident previously evaluated.

The proposed changes do not significantly increase the consequences of a fuel handling accident as previously evaluated. The calculated doses are well within the limits given in 10 CFR Part 100 and within the limits given in the Standard Review Plan, NUREG-0800. In addition, the calculated doses are larger than the expected doses because the calculations do not credit any filtration or containment of the source term that will occur by the administrative controls that will be in place.

The changes being proposed do not affect assumptions contained in other plant safety analyses or the physical design of the plant, nor do they affect other TSs that preserve safety analysis assumptions. Therefore, operation of the facility in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously analyzed.

(2) Operation of the facility in accordance with the proposed amendments would not create the possibility of a new or different kind of accident from any accidents previously evaluated.

The proposed changes to the TSs do not affect or create a different type of fuel handling accident. The fuel handling accident analyses assume that all of the iodine and noble gases that become airborne, escape, and reach the exclusion area boundary and low population zone with no credit taken for filtration, containment of the source term, or for decay or deposition. The proposed changes do not involve the addition or modification of equipment nor do they alter the design of plant systems. The revised operations are consistent with the fuel handling accident analyses. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Operation of the facility in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

The calculated doses are well within the limits given in 10 CFR Part 100 and within the limits given in the Standard Review Plan, NUREG-0800. The proposed changes do not alter the bases for assurance that safety-related activities are performed correctly or the basis for any TS that is related to the establishment of or maintenance of a safety margin.

The systems that have been included in the proposed change will have administrative controls in place to assure that the systems are available and can be promptly returned to operation to further reduce dose consequences. These administrative controls will include a single normal or contingency method to promptly close the primary or secondary containment penetrations. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated FHA such that it can be treated and monitored.

Therefore, operation of the facility in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

Based on the above, we have determined that the proposed amendments do not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore, do not involve a significant hazards consideration as defined in 10 CFR 50.92.

Environmental Impact Consideration Determination

The proposed license amendments change requirements with respect to installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The proposed amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and no significant increase in individual or cumulative occupational radiation exposure. FPL has concluded that the proposed amendments involve no significant hazards consideration, and therefore, meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment need not be prepared in connection with issuance of the amendments.

ATTACHMENT 3

St. Lucie Unit 1 Marked-up Technical Specification Pages

3/4 9-4
3/4 9-9
3/4 9-12

REFUELING OPERATIONS

CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts,

b. A minimum of one door in each airlock is closed, ~~or, both doors of the containment personnel airlock may be open if:~~

~~1. at least one personnel airlock door is capable of being closed,~~

~~2. the plant is in MODE 6 with at least 23 feet of water above the fuel in the reactor core, and~~

~~3. a designated individual is available outside the personnel airlock to close the door~~

Delete

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by isolation valve, blind flange, or manual valve except for valves that are open on an intermittent basis under administrative control, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve, or

3. Be capable of being closed by an OPERABLE containment vacuum relief valve.

delete

APPLICABILITY: During ~~CORE ALTERATIONS or~~ movement of irradiated fuel within the containment.

recently

ACTION:

delete

With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~CORE ALTERATIONS or~~ movement of irradiated fuel in the containment. The provisions of Specification 3.0.3 are not applicable.

recently

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during ~~CORE ALTERATIONS or~~ movement of irradiated fuel in the containment by:

INSERT

delete

recently

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specifications 4.6.3.1.1. and 4.6.3.1.2.

NOTE: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

REFUELING OPERATIONS

CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: ~~During CORE ALTERATIONS.~~ delete
During movement of irradiated fuel assemblies within containment.
recently

ACTION:

With the containment isolation system inoperable, close each of the penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during ~~CORE ALTERATIONS~~ by verifying that containment isolation occurs on manual initiation and on a high radiation signal from two of the containment radiation monitoring instrumentation channels.

movement of recently irradiated fuel assemblies

REFUELING OPERATIONS

FUEL POOL VENTILATION SYSTEM – FUEL STORAGE

LIMITING CONDITION FOR OPERATION

3.9.12 At least one fuel pool ventilation system shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION: recently

a. With no fuel pool ventilation system OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel ~~pool~~ delete until at least one fuel pool ventilation system is restored to OPERABLE status.

b. The provisions of Specifications 3.0.3 and 3.0.4 ~~are not~~ applicable. RECENTLY IRRADIATED

SURVEILLANCE REQUIREMENTS

4.9.12 The above required fuel pool ventilation system shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance ~~tenance~~ on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation ~~tilation~~ zone communicating with the system by: Editorial change

ATTACHMENT 4

St. Lucie Unit 2 Marked-up Technical Specification Pages

3/4 6-27
3/4 9-4
3/4 9-4a
3/4 9-10

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM (SBVS)

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent Shield Building Ventilation Systems shall be OPERABLE.

APPLICABILITY: At all times in MODES 1, 2, 3, and 4. recently
In addition, during movement of irradiated fuel assemblies or during crane operations with loads over irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6. recently

ACTION:

a. With the SBVS inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the Spent Fuel Pool area, only ACTION-c is required. If the SBVS is inoperable for any other reason, concurrently implement ACTION-b and ACTION-c.

b. (1) With one SBVS inoperable in MODE 1, 2, 3, or 4, restore the inoperable system to OPERABLE status within 7 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(2) With both SBVS inoperable in MODE 1, 2, 3, or 4, immediately enter LCO 3.0.3.

c. (1) With one SBVS inoperable in any MODE, restore the inoperable system to OPERABLE status within 7 days; otherwise, suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over irradiated fuel in the Spent Fuel Storage Pool.

(2) With both SBVS inoperable in any MODE, immediately suspend movement of irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over irradiated fuel in the Spent Fuel Storage Pool. recently

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each Shield Building Ventilation System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Performing a visual examination of SBVS in accordance with ANSI N-510-1980.

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts, ~~or the equipment door may be open if:~~

~~1. It is capable of being closed with four bolts within 30 minutes,~~

~~2. The plant is in MODE 6 with at least 23 feet of water above the reactor pressure vessel flange, and~~

~~3. A designated crew is available at the equipment door to close the door.~~

b. A minimum of one door in each airlock is closed ~~or both doors of each containment airlock may be open if:~~

~~1. At least one door of each airlock is capable of being closed,~~

~~2. The plant is in MODE 6 with at least 23 feet of water above the reactor pressure vessel flange,~~ and

~~3. A designated individual is available outside each open airlock to close the door~~.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve.

APPLICABILITY: During ~~CORE ALTERATIONS or~~ movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~CORE ALTERATIONS or~~ movement of irradiated fuel in the containment building.

NOTE: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

REFUELING OPERATIONS (continued)

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (continued)

LIMITING CONDITION FOR OPERATION (continued)

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during ~~CORE ALTERATIONS or~~ movement of irradiated fuel in the containment building by: delete

recently

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specification 4.6.3.2.

Editorial Change: move to Bottom of previous page and
· delete page 3/4 9-4a

REFUELING OPERATIONS

3/4.9.9 CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: During ~~CORE ALTERATIONS or~~ movement of irradiated fuel within containment.

ACTION:

With the containment isolation system inoperable, close each of the containment penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during ~~CORE ALTERATIONS~~ by verifying that containment isolation occurs on manual initiation and on a high radiation test signal from each of the containment radiation monitoring instrumentation channels.

ATTACHMENT 5

St. Lucie Unit 1 Marked-up Technical Specification Bases Pages

FOR INFORMATION ONLY

INSERT 1

The fuel handling accident analysis assumes a minimum post reactor shutdown decay time of 72 hours. Therefore, recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours. This represents the applicability bases for fuel handling accidents. Containment closure will have administrtive controls in place to assure that a single normal or contingency method to promptly close the primary or secondary containment pentrations will be available. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated fuel handling accident in the proper direction such that it can be treated and monitored.

3/4.9 **REFUELING OPERATIONS** (continued)

BASES (continued)

3/4.9.4 **CONTAINMENT PENETRATIONS**

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE. [ADD IN/SERT] RECENTLY IRRADIATED

In accordance with Generic Letter 91-08, Removal of Component Lists from the Technical Specifications, the opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with the control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

3/4.9.5 **COMMUNICATIONS**

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

3/4.9.6 **MANIPULATOR CRANE OPERABILITY**

The OPERABILITY requirements of the cranes used for movement of fuel assemblies ensures that: 1) each crane has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 **CRANE TRAVEL – SPENT FUEL STORAGE BUILDING**

The restriction on movement of loads in excess of the nominal weight of a fuel assembly and CEA over irradiated fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

SECTION NO.: 3/4.9	TITLE: TECHNICAL SPECIFICATIONS BASES ATTACHMENT 11 OF ADM-25.04 REFUELING OPERATIONS ST. LUCIE UNIT 1	6 of 7
REVISION NO.: 1		

3/4.9 **REFUELING OPERATIONS** (continued)

BASES (continued)

3/4.9.9 **CONTAINMENT ISOLATION SYSTEM**

The OPERABILITY of this system ensures that the containment isolation valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.4.10 and 3/4.9.11 **WATER LEVEL – REACTOR VESSEL AND STORAGE POOL WATER LEVEL**

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% Iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 **FUEL POOL VENTILATION SYSTEM – FUEL STORAGE**

recently

The limitations on the fuel handling building ventilation system ensures that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting Iodine removal capacity are consistent with the assumptions of the accident analyses.

fuel handling

3/4.9.13 **SPENT FUEL CASK CRANE**

Add insert 1

The maximum load which may be handled by the spent fuel cask crane is limited to a loaded single element cask which is equivalent to approximately 25 tons. This restriction is provided to ensure the structural integrity of the spent fuel pool in the event of a dropped cask accident. Structural damage caused by dropping a load in excess of a loaded single element cask could cause leakage from the spent fuel pool in excess of the maximum makeup capability.

Recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours.

Resulting from a fuel handling accident of a recently irradiated fuel assembly

ATTACHMENT 6

St. Lucie Unit 2 Marked-up Technical Specification Bases Pages

FOR INFORMATION ONLY

INSERT 1

The fuel handling accident analysis assumes a minimum post reactor shutdown decay time of 72 hours. Therefore, recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours. This represents the applicability bases for fuel handling accidents. Containment closure will have administrtive controls in place to assure that a single normal or contingency method to promptly close the primary or secondary containment pentrations will be available. These prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw the release from the postulated fuel handling accident in the proper direction such that it can be treated and monitored.

3/4.9 **REFUELING OPERATIONS** (continued)

BASES (continued)

3/4.9.4 **CONTAINMENT BUILDING PENETRATIONS**

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE. ← ADD INSERT 1

recently irradiated

These restrictions include the administrative controls to allow the opening of both doors of each airlock (emergency and/or personnel) and the containment equipment door during CORE ALTERATIONS or movement of irradiated fuel in the containment provided that: a) at least one door of each airlock is capable of being closed; b) the plant is in MODE 6 with at least 23 feet of water above the reactor pressure vessel flange; c) a designated individual is available outside each open airlock to close the door; d) the equipment door can be closed with four bolts within 30 minutes; and e) an equipment door closure crew is available to close the equipment door. The capability to close the containment equipment door or the open containment airlocks include requirements that the equipment door or one of the airlock doors of each open airlock is capable of being closed and that any cables or hoses across the opening have quick disconnects to ensure the door is capable of being closed in a timely manner. The 30-minute closure time for the equipment door is considered to start when the control room determines the need to establish containment integrity. This 30-minute assumption is significantly less than the 2-hour closure time assumed in the revised fuel handling accident analysis.

delete

3/4.9.5 **COMMUNICATIONS**

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

3/4.6 **CONTAINMENT SYSTEMS** (continued)

BASES (continued)

3/4.6.4 **COMBUSTIBLE GAS CONTROL**

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be *available to maintain the hydrogen concentration within containment* below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

The containment fan coolers and containment spray ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.

3/4.6.5 **VACUUM RELIEF VALVES**

The OPERABILITY of the primary containment vessel to atmosphere vacuum relief valves ensures that the containment internal pressure differential does not become more negative than 0.615 psi. This condition is necessary to prevent exceeding the containment design limit for internal pressure differential of 0.7 psi.

INVOLVING A RECENTLY IRRADIATED fuel assembly

3/4.6.6 **SECONDARY CONTAINMENT**

3/4.6.6.1 **SHIELD BUILDING VENTILATION SYSTEM**

The OPERABILITY of the shield building ventilation systems ensures that containment vessel leakage occurring during LOCA conditions into the annulus will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere and also reduces radioactive effluent releases to the environment during a fuel handling accident in the spent fuel storage building. This requirement is necessary to meet the assumptions used in the safety analyses and limit the site boundary radiation doses to within the limits of 10 CFR 100 during LOCA conditions.

Operation of the system with the heaters on for at least 10 hours continuous over a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters.

ADD INSERT 1

3/4.9 REFUELING OPERATIONS (continued)

BASES (continued)

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION (continued)

The requirement to have two shutdown cooling loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange with irradiated fuel in the core ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange with irradiated fuel in the core, a large heat sink is available for core cooling, thus in the event of a failure of the operating shutdown cooling loop, adequate time is provided to initiate emergency procedures to cool the core.

The footnote providing for a minimum reactor coolant flow rate of $\geq$ 1850 gpm considers one of the two RCS injection points for a SDCS train to be isolated. The specified parameters include 50 gpm for flow measurement uncertainty, and 3°F uncertainty for RCS and CCW temperature measurements. The conditions of minimum shutdown time, maximum RCS temperature, and maximum temperature of CCW to the shutdown cooling heat exchanger are initial conditions specified to assure that a reduction in flow rate from 3000 gpm to 1800 gpm will not result in a temperature transient exceeding 140°F during conditions when the RCS water level is at an elevation $\geq$ 29.5 feet.

3/4.9.9 CONTAINMENT ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment isolation valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

Recently irradiated fuel is defined as fuel that has occupied part of a critical reactor core within the previous 72 hours.

resulting from a fuel handling accident of a recently irradiated fuel assembly

ATTACHMENT 7

St. Lucie Unit 1 Retyped Technical Specification Pages

REFUELING OPERATIONS

CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts.

b. A minimum of one door in each airlock is closed.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by isolation valve, blind flange, or manual valve except for valves that are open on an intermittent basis under administrative control, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve, or

3. Be capable of being closed by an OPERABLE containment vacuum relief valve.

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During movement of recently irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel in the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during movement of recently irradiated fuel in the containment by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specifications 4.6.3.1.1. and 4.6.3.1.2.

REFUELING OPERATIONS

CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within containment.

ACTION:

With the containment isolation system inoperable, close each of the penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during movement of recently irradiated fuel assemblies by verifying that containment isolation occurs on manual initiation and on a high radiation signal from two of the containment radiation monitoring instrumentation channels.

REFUELING OPERATIONS

FUEL POOL VENTILATION SYSTEM – FUEL STORAGE

LIMITING CONDITION FOR OPERATION

3.9.12 At least one fuel pool ventilation system shall be OPERABLE.

APPLICABILITY: Whenever recently irradiated fuel is in the spent fuel pool.

ACTION:

a. With no fuel pool ventilation system OPERABLE, suspend all operations involving movement of recently irradiated fuel within the spent fuel pool or crane operation with loads over the recently irradiated spent fuel until at least one fuel pool ventilation system is restored to OPERABLE status.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required fuel pool ventilation system shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

ATTACHMENT 8

St. Lucie Unit 2 Retyped Technical Specification Pages

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM (SBVS)

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent Shield Building Ventilation Systems shall be OPERABLE.

APPLICABILITY: At all times in MODES 1, 2, 3, and 4.
In addition, during movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6.

ACTION:

a. With the SBVS inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the Spent Fuel Pool area, only ACTION-c is required. If the SBVS is inoperable for any other reason, concurrently implement ACTION-b and ACTION-c.

b. (1) With one SBVS inoperable in MODE 1, 2, 3, or 4, restore the inoperable system to OPERABLE status within 7 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(2) With both SBVS inoperable in MODE 1, 2, 3, or 4, immediately enter LCO 3.0.3.

c. (1) With one SBVS inoperable in any MODE, restore the inoperable system to OPERABLE status within 7 days; otherwise, suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool.

(2) With both SBVS inoperable in any MODE, immediately suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each Shield Building Ventilation System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Performing a visual examination of SBVS in accordance with ANSI N-510-1980.

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts.

b. A minimum of one door in each airlock is closed.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve.

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During movement of recently irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and at least once per 7 days during movement of recently irradiated fuel in the containment building by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specification 4.6.3.2.

REFUELING OPERATIONS

3/4.9.9 CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel within containment.

ACTION:

With the containment isolation system inoperable, close each of the containment penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and at least once per 7 days during movement of recently irradiated fuel by verifying that containment isolation occurs on manual initiation and on a high radiation test signal from each of the containment radiation monitoring instrumentation channels.