



JAN 31 2018

L-2018-031  
10 CFR 50.90  
10 CFR 50, Appendix E

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

St. Lucie Plant Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Renewed Facility Operating Licenses Nos. DPR-67 and NPF-16  
License Amendment Request Focused Adoption of NEI 99-01, Revision 6 Unusual Event Fire-Related Emergency Action Level Scheme

In accordance with 10 CFR 50.90, Florida Power and Light Company (FPL) hereby requests a license amendment to revise the facility operating licenses for the St. Lucie Nuclear Plant Units 1 and 2. Specifically, the proposed change involves revising the Emergency Plan for St. Lucie to adopt the Nuclear Energy Institute (NEI) revised Notification of Unusual Event Emergency Action Level (EAL) scheme for potential fires that are based on NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors." NEI 99-01, Revision 6 has been endorsed by the NRC.

10 CFR 50, Appendix E, Section IV.B.2 stipulates that a licensee desiring to change its EAL scheme shall submit an application for an amendment to its license and receive NRC approval before implementing the change.

The Enclosure to this letter provides FPL's evaluation of the proposed change. The following information is included as attachments to the Enclosure to aid NRC review and approval:

- Attachment 1 – Focused Redline Markup of NEI 99-01 Revision 6
- Attachment 2 - Clean Copy of the Proposed St. Lucie EAL Scheme
- Attachment 3 - Deviations and Differences Matrix

FPL is requesting an expedited review of the license amendment due to the declaration of two Notification of Unusual Events at the end of 2017 due to spurious fire alarms in the containment building that were not validated within 15 minutes. Both events were quickly terminated when the spurious alarm was validated. However, FPL would like to prevent further notifications to Local, State and Federal officials and the resulting internal notifications of their organizations due to spurious alarms. Adopting the current NRC approved guidance of 30 minutes for single fire alarm validation at the St. Lucie plant would greatly reduce the need for these notifications. As presented in the evaluation, the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change. This change has been reviewed and concurred with by the St. Lucie Onsite Review Group.

These changes have been discussed with our state and local emergency response organizations. In accordance with 10 CFR 50.91, a copy of this letter is being forwarded to the State of Florida designee.

This letter contains no new or revised regulatory commitments.

Should you have any questions regarding this submittal, please contact Mr. Michael J. Snyder, Licensing Manager, at 772-467-7036.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on **JAN 31 2018**

Sincerely,



Daniel DeBoer  
Site Director  
St. Lucie Plant

Enclosure

cc: USNRC Regional Administrator, Region II  
USNRC Project Manager, St. Lucie Nuclear Plant, Units 1 and 2  
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant, Units 1 and 2  
Ms. Cindy Becker, Florida Department of Health

Florida Power and Light Company  
St. Lucie Nuclear Plant Units 1 and 2

LICENSE AMENDMENT REQUEST

SUBJECT: Focused Adoption of NEI 99-01, Revision 6 Notification of Unusual Event Fire-Related Emergency Action Level Scheme

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## **1 SUMMARY DESCRIPTION**

Florida Power and Light Company (FPL) requests an amendment to the licenses for St. Lucie Units 1 and 2. Specifically, the proposed changes involve revising the Emergency Plan for St. Lucie to adopt a limited scope of the Nuclear Energy Institute (NEI) Emergency Action Level (EAL) scheme for the fire-related notification of unusual event described in NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors" (Reference 1).

Nuclear Energy Institute (NEI) 99-01 provides guidance to nuclear power plant operators for the development of a site-specific emergency classification scheme. The methodology described in this document is consistent with Federal regulations, and related US Nuclear Regulatory Commission (NRC) requirements and guidance. In particular, this methodology has been endorsed by the NRC (Reference 2) as an acceptable approach to meeting the requirements of 10 CFR 50.47(b)(4), related sections of 10 CFR 50, Appendix E, and the associated planning standard evaluation elements of NUREG-0654/ FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980.

Revision 6 of NEI 99-01 addresses changes recommended by the NRC in a letter to NEI on October 12, 2010, (Reference 8) along with other enhancements identified by the industry during implementation of Revisions 4 and 5 of the guidance.

In this amendment request, St. Lucie is limiting the proposed changes to the notification of unusual event of fires that aligns with EAL HU4 of NEI 99-01 Revision 6.

## **2 DETAILED DESCRIPTION**

The proposed changes involve revising St. Lucie's current fire-related unusual event EAL to a scheme based on NEI 99-01, Revision 6 (Reference 1). The NRC endorsed NEI 99-01, Revision 6 in March 2013 (Reference 2).

Attachment 1 of this evaluation contains a focused redline markup of the endorsed guidance document showing all proposed changes to the fire-related unusual event. A clean copy of the resulting St. Lucie EAL scheme is presented in Attachment 2. This clean copy includes site-specific indications, parameters and information.

### **Deviations and Differences Matrix**

A matrix of deviations and differences (Attachment 3) has been developed that provides a tabular format of the Initiating Conditions (ICs), Mode Applicability, and EALs (with threshold values) in NEI 99-01, Revision 6 alongside the proposed change to the St. Lucie fire-related unusual event EAL. This matrix provides a means of assessing the proposed EAL in terms of "Deviations" and "Differences" from the NRC-endorsed guidance.

The proposed EAL changes were evaluated in accordance with applicable regulatory requirements (e.g., 10 CFR 50.54(q) and Appendix E, Section IV.B.1). The evaluation assessed the conformance of the proposed EAL changes to those described in the endorsed guidance of NEI 99-01, Revision 6 to determine if the proposed EAL wording change resulted in "No Change" to the guidance, a "Difference" in the wording provided, or a "Deviation" from the guidance. Any items considered to be "Differences" or "Deviations" are based on the definitions provided in RIS 2003-18, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels," and supporting supplements (References 3, 4, and 5). The RIS and supporting

supplements were issued to clarify technical positions regarding the revision of EALs. Specifically, the RIS documentation provides clarification on the level of detail licensees need to provide to support proposed changes to EALs. The RIS documents suggest that specific information be included with the EAL revision submittal to help facilitate the review process. The RIS information defines an EAL "Difference" and "Deviation" as follows:

A "Difference" is an EAL change where the basis scheme guidance (e.g., NUREG, NUMARC, and NEI) differs in wording but agrees in meaning and intent, such that classification of an event would be the same, whether using the basis scheme guidance or the site-specific proposed EAL. Examples of "Differences" include the use of site-specific terminology or administrative reformatting of site-specific EALs.

A "Deviation" is an EAL change where the basis scheme guidance differs in wording and is altered in meaning or intent, such that classification of the event could be different between the basis scheme guidance and the site-specific proposed EAL. Examples of "Deviations" include the use of altered mode applicability, altering key words or time limits, or changing words of physical reference (protected area, safety-related equipment, etc.).

Any "Differences" identified between the NEI 99-01, Revision 6 EALs and the proposed EALs being developed by FPL have been identified and are listed in Attachment 3. Certain global differences were identified in this evaluation and are referenced by the matrix where applicable. Examples of global differences include:

- To the extent possible, IC and EAL identification numbering has been retained from the applicable station's existing EALs.
- ICs and EALs which contain and/or connectors are separated into logical statements (AND, OR, or EITHER) where appropriate to be consistent with the station's current EAL presentation scheme.
- Some parameters or indications listed in EALs were placed in tables or bulletized lists for ease of operator reference.
- Operating Mode Applicability lists mode numbers (i.e., Modes 1 and 2) versus mode names (i.e., Power Operation, Startup).
- Developer's Notes were deleted

FPL has determined that these "Differences" do not result in a reduction in effectiveness or constitute a change the intent of the NEI 99-01, Revision 6 fire-related unusual event EAL, and the proposed EAL scheme is technically complete and consistent with EAL schemes implemented at similarly designed plants.

Any EAL (Initiating Condition or Threshold Value) that does not meet the "intent" of the NEI 99-01, Revision 6 guidance, or which may result in an event being classified differently from the guidance, would be identified as a "Deviation." FPL has determined that there are no deviations from the endorsed guidance of NEI 99-01 Revision 6.

### **3 TECHNICAL EVALUATION**

FPL has evaluated the proposed EAL changes considering the requirements of 10 CFR 50.54(q), paragraph (b) of 10 CFR 50.47, "Emergency plans," 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," Regulatory Issue Summary (RIS) 2003-18, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels" (including supporting supplements), and RIS 2005-02, Revision 1, "Clarifying the Process for Making Emergency Plan Changes." The proposed changes to the St. Lucie EAL scheme contained in this submittal do not reduce the capability to meet the applicable

emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. In addition, by adopting the latest guidance provided in NEI 99-01, Revision 6, St. Lucie will continue to provide emergency classifications consistent with EAL schemes implemented at similarly designed plants.

## **4 REGULATORY EVALUATION**

### **4.1 Applicable Regulatory Requirements/Criteria**

10 CFR 50.47, "Emergency plans," sets forth emergency plan requirements for nuclear power plant facilities. The regulation in 10 CFR 50.47(a)(1)(i) states, in part, that:

[...]no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

10 CFR 50.47(b) establishes the standards that the onsite and offsite emergency response plans must meet for NRC staff to make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Planning standard (4) of this section requires that onsite and offsite emergency response plans contain:

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

10 CFR 50.47(b)(4) specifies a standard emergency classification and action level scheme, assuring that implementation methods are relatively consistent throughout the industry for a given reactor and containment design while simultaneously providing an opportunity for a licensee to modify its EAL scheme as necessary to address plant-specific design considerations or preferences.

10 CFR 50, Appendix E, Section IV.B, Assessment Actions, states in subsection 1:

The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant. The initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis.

By means of a letter dated March 28, 2013 (Reference 2), the NRC completed its review of the draft version of NEI 99-01, Revision 6, dated November 2012, and found it acceptable for use by licensees seeking to upgrade their emergency action levels (EAL) in accordance with Appendix E to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR). This

endorsement letter also contained the following admonition related to use of NEI 99-01 Revision 6:

“ . . . this is considered a significant change to the EAL scheme development methodology and licensees seeking to use this guidance in the development of their EAL scheme must adhere to the requirements of 10 CFR Part 50, Appendix E, Section IV.B.2.”

Accordingly, this change cannot be made by FPL under the provisions of 10 CFR 50.54(q) and FPL must submit an application for an amendment to its license and receive NRC approval before implementing the change.

#### 4.2 Precedent

The NRC has previously issued numerous license amendments for adopting NEI 99-01 Revision 6 EAL schemes.

#### 4.3 Significant Hazards Consideration

In accordance with 10 CFR 50.90, FPL requests amendment to the Facility Operating Licenses for St. Lucie to support the adoption of the fire-related unusual event EAL scheme based on NEI 99-01, Revision 6, which has been endorsed by the NRC as documented in a letter dated March 28, 2013 (Reference 2).

The proposed changes to St. Lucie's EAL scheme to adopt the guidance provided in NEI 99-01, Revision 6 does not reduce the capability to meet the emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. The proposed change does not reduce the functionality, performance, or capability of the St. Lucie Emergency Response Organization (ERO) to respond in mitigating the consequences of an accident. All the St. Lucie ERO functions will continue to be performed as required.

The proposed changes have been reviewed considering the applicable requirements of 10 CFR 50.47, 10 CFR 50, Appendix E, and other applicable NRC documents. FPL has evaluated the proposed changes to the St. Lucie Emergency Plan and determined that the changes do not involve a Significant Hazards Consideration. An analysis of the issue of no significant hazards consideration is presented below.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change does not impact the physical configuration or function of plant structures, systems, or components (SSCs) or the manner in which SSCs are operated, maintained, modified, tested, or inspected. No actual facility equipment or accident analyses are affected by the proposed changes.

The change revises the St. Lucie fire-related unusual event EAL scheme to be consistent with the NRC endorsed EAL scheme contained in NEI 99-01, Revision 6, "Methodology for Development of Emergency Action Levels," but does not alter any of the requirements of the Operating License or the Technical Specifications.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). The proposed change does not create any new failure modes for existing equipment or any new limiting single failures. Additionally, the proposed change does not involve a change in the methods governing normal plant operation, and all safety functions will continue to perform as previously assumed in the accident analyses. Thus, the proposed change does not adversely affect the design function or operation of any structures, systems, and components important to safety.

No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the proposed change. The proposed change does not challenge the performance or integrity of any safety-related system.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The margin of safety associated with the acceptance criteria of any accident is unchanged. The proposed change will have no effect on the availability, operability, or performance of safety-related systems and components. The proposed change will not adversely affect the operation of plant equipment or the function of equipment assumed in the accident analysis.

The proposed amendment does not involve changes to any safety analyses assumptions, safety limits, or limiting safety system settings. The changes do not adversely impact plant operating margins or the reliability of equipment credited in the safety analyses.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based upon the above analysis, FPL concludes that the proposed amendment does not involve a significant hazards consideration, under the standards set forth in 10 CFR 50.92(c), "Issuance of Amendment," and accordingly, a finding of "no significant hazards consideration" is justified.

#### 4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

### 5 ENVIRONMENTAL CONSIDERATION

FPL has evaluated the proposed amendment for environmental considerations. The proposed change is applicable to emergency planning requirements involving the proposed adoption of the NRC-endorsed fire-related unusual event EAL guidance as described in NEI 99-01, Revision 6, and does not reduce the capability to meet the emergency planning standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E. The proposed change does not

involve (i) a significant hazards consideration; (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite; or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

## **6 REFERENCES**

1. NEI 99-01, Revision 6, Development of Emergency Action Levels for Non-Passive Reactors, dated November 2012 (ML12326A789)
2. Letter from Nuclear Regulatory Commission to Susan Perkins- Grew (Nuclear Energy Institute), U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 6, November 2012, dated March 28, 2013 (ML12346A463)
3. NRC Regulatory Issue Summary 2003-18, Use of NEI 99-01, Methodology for Development of Emergency Action Levels Revision 4, Dated January 2003, dated October 8, 2003 (ML032580518)
4. NRC Regulatory Issue Summary 2003-18, Supplement 1, Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels Revision 4, Dated January 2003, dated July 13, 2004 (ML041550395)
5. NRC Regulatory Issue Summary 2003-18, Supplement 2, Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels Revision 4, Dated January 2003, dated December 12, 2005 (ML051450482)
6. Institute (NEI) Report, NEI 99-01, "Methodology for the Development of Emergency Action Levels," dated October 12, 2010 (ML1028104052)

ATTACHMENT 1

Florida Power and Light Company  
St. Lucie, Units 1 and 2

LICENSE AMENDMENT REQUEST

FOCUSED REDLINE MARKUP OF NEI 99-01 REVISION 6

Attachment 1

**HU4**HU2

**ECL:** Notification of Unusual Event

**Initiating Condition:** FIRE potentially degrading the level of safety of the plant.

**Operating Mode Applicability:** All

~~Example Emergency Action Levels: (1 or 2 or 3 or 4)~~ EAL Value:

**Note:** The Emergency Director should declare the Unusual Event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.

- ~~(1)~~ a. A FIRE is NOT extinguished within 15-minutes of **ANY** of the following FIRE detection indications:
- Report from the field (i.e., visual observation)
  - Receipt of multiple (more than 1) fire alarms or indications
  - Field verification of a single fire alarm
- AND**
- b. The FIRE is located within **ANY** of the following plant rooms or areas:
- Reactor Containment Building and Shield Building
  - Control Room
  - Reactor Auxiliary Building (RAB)
  - Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB
  - Diesel Oil Storage Tank (DOST)
  - Ultimate Heat Sink (UHS)
  - Intake Structure
  - Intake Cooling Water (ICW)
  - Component Cooling Water (CCW)
  - Emergency Diesel Generator Building
  - Condensate Storage Tank (CST)
  - Steam Trestle Area
  - Refueling Water Tank (RWT)
- ~~(site-specific list of plant rooms or areas)~~

**OR**

- ~~(2)~~ a. Receipt of a single fire alarm ~~(i.e., with~~ no other indications of a FIRE).
- AND**
- b. The FIRE is located within **ANY** of the following plant rooms or areas:

Attachment 1

- Reactor Containment Building and Shield Building
- Control Room
- Reactor Auxiliary Building (RAB)
- Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB
- Diesel Oil Storage Tank (DOST)
- Ultimate Heat Sink (UHS)
- Intake Structure
- Intake Cooling Water (ICW)
- Component Cooling Water (CCW)
- Emergency Diesel Generator Building
- Condensate Storage Tank (CST)
- Steam Trestle Area
- Refueling Water Tank (RWT)
- (site-specific list of plant rooms or areas)

AND

- c. The existence of a FIRE is not verified within 30-minutes of alarm receipt.

OR

- (3). A FIRE within the plant ~~or ISFSI [for plants with an ISFSI outside the plant Protected Area]~~ PROTECTED AREA not extinguished within 60-minutes of the initial report, alarm or indication.

OR

- (4). A FIRE within the plant ~~or ISFSI [for plants with an ISFSI outside the plant Protected Area]~~ PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.

**Basis:**

This IC addresses the magnitude and extent of FIRES that may be indicative of a potential degradation of the level of safety of the plant.

EAL #1

The intent of the 15-minute duration is to size the FIRE and to discriminate against small FIRES that are readily extinguished (e.g., smoldering waste paper basket). In addition to alarms, other indications of a FIRE could be a drop in fire main pressure, automatic activation of a suppression system, etc.

Upon receipt, operators will take prompt actions to confirm the validity of an initial fire alarm, indication, or report. For EAL assessment purposes, the emergency declaration clock starts at the

Attachment 1

time that the initial alarm, indication, or report was received, and not the time that a subsequent verification action was performed. Similarly, the fire duration clock also starts at the time of receipt of the initial alarm, indication or report.

EAL #2

This EAL addresses receipt of a single fire alarm, and the existence of a FIRE is not verified (i.e., proved or disproved) within 30-minutes of the alarm. Upon receipt, operators will take prompt actions to confirm the validity of a single fire alarm. For EAL assessment purposes, the 30-minute clock starts at the time that the initial alarm was received, and not the time that a subsequent verification action was performed.

A single fire alarm, absent other indication(s) of a FIRE, may be indicative of equipment failure or a spurious activation, and not an actual FIRE. For this reason, additional time is allowed to verify the validity of the alarm. The 30-minute period is a reasonable amount of time to determine if an actual FIRE exists; however, after that time, and absent information to the contrary, it is assumed that an actual FIRE is in progress.

If an actual FIRE is verified by a report from the field, then EAL #1 is immediately applicable, and the emergency must be declared if the FIRE is not extinguished within 15-minutes of the report. If the alarm is verified to be due to an equipment failure or a spurious activation, and this verification occurs within 30-minutes of the receipt of the alarm, then this EAL is not applicable and no emergency declaration is warranted.

EAL #3

In addition to a FIRE addressed by EAL #1 or EAL #2, a FIRE within the plant PROTECTED AREA not extinguished within 60-minutes may also potentially degrade the level of plant safety. ~~This basis extends to a FIRE occurring within the PROTECTED AREA of an ISFSI located outside the plant PROTECTED AREA. [Sentence for plants with an ISFSI outside the plant Protected Area]~~

EAL #4

If a FIRE within the plant ~~or ISFSI [for plants with an ISFSI outside the plant Protected Area]~~ PROTECTED AREA is of sufficient size to require a response by an offsite firefighting agency (e.g., a local town Fire Department), then the level of plant safety is potentially degraded. The dispatch of an offsite firefighting agency to the site requires an emergency declaration only if it is needed to actively support firefighting efforts because the fire is beyond the capability of the

Fire Brigade to extinguish. Declaration is not necessary if the agency resources are placed on stand-by, or supporting post-extinguishment recovery or investigation actions.

Basis-Related Requirements from Appendix R and NFPA-805

~~Appendix R to 10 CFR 50, states in part: that~~

Criterion 3 of Appendix A to this part specifies that "Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions."

Attachment 1

The Nuclear Safety Goal ("NSG") in NFPA 805, Section 1.3.1 states, "The nuclear safety goal is to provide reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition."

When considering the effects of fire, those systems associated with achieving and maintaining safe shutdown conditions assume major importance because a safe shutdown success path, free of fire damage, must be available to meet the nuclear safety goals, objectives and performance criteria for a fire under any plant operational mode or configuration. ~~to safety because damage to them can lead to core damage resulting from loss of coolant through boil-off.~~

Because fire may affect safe shutdown systems and because the loss of function of systems used to mitigate the consequences of design basis accidents under post-fire conditions does not per se impact public safety, the need to limit fire damage to systems required to achieve and maintain safe shutdown conditions is greater than the need to limit fire damage to those systems required to mitigate the consequences of design basis accidents.

In addition, Appendix R to 10 CFR 50, requires, among other considerations, the use of 1-hour fire barriers for the enclosure of cable and equipment and associated non-safety circuits of one redundant train (G.2.c). Even though St. Lucie has adopted the alternate approach provided by NFPA-805 in lieu of the deterministic requirements of Appendix R, the 30-minutes to verify a single alarm as used in EAL HU2.2 is considered a reasonable amount of time to determine if an actual FIRE exists without presenting a challenge to the nuclear safety performance criteria. ~~As used in EAL #2, the 30 minutes to verify a single alarm is well within this worst case 1-hour time period.~~

Depending upon the plant mode at the time of the event, escalation of the emergency classification level would be via St. Lucie EAL HA2 ~~IC CA6 or SA9~~.

**~~Developer Notes:~~**

~~The "site specific list of plant rooms or areas" should specify those rooms or areas that contain SAFETY SYSTEM equipment.~~

~~As noted in the EALs and Basis section, include the term ISFSI if the site has an ISFSI outside the plant Protected Area.~~

~~ECL Assignment Attributes: 3.1.1.A~~

ATTACHMENT 2

Florida Power and Light Company  
St. Lucie, Units 1 and 2

LICENSE AMENDMENT REQUEST

CLEAN COPY OF THE PROPOSED FOCUSED ST. LUCIE EAL SCHEME

Attachment 2

## HU2

**ECL:** Notification of Unusual Event

**Initiating Condition:** FIRE potentially degrading the level of safety of the plant.

**Operating Mode Applicability:** All

**EAL Value:**

**Note:** The Emergency Director should declare the Unusual Event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.

1. a. A FIRE is NOT extinguished within 15-minutes of **ANY** of the following FIRE detection indications:

- Report from the field (i.e., visual observation)
- Receipt of multiple (more than 1) fire alarms or indications
- Field verification of a single fire alarm

**AND**

- 
- b. The FIRE is located within **ANY** of the following plant rooms or areas:

- Reactor Containment Building and Shield Building
- Control Room
- Reactor Auxiliary Building (RAB)
- Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB
- Diesel Oil Storage Tank (DOST)
- Ultimate Heat Sink (UHS)
- Intake Structure
- Intake Cooling Water (ICW)
- Component Cooling Water (CCW)
- Emergency Diesel Generator Building
- Condensate Storage Tank (CST)
- Steam Trestle Area
- Refueling Water Tank (RWT)

**OR**

- 
- 
2. a. Receipt of a single fire alarm with no other indications of a FIRE.

**AND**

- 
- 
- 
- b. The FIRE is located within **ANY** of the following plant rooms or areas:

Attachment 2

- Reactor Containment Building and Shield Building
- Control Room
- Reactor Auxiliary Building (RAB)
- Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB
- Diesel Oil Storage Tank (DOST)
- Ultimate Heat Sink (UHS)
- Intake Structure
- Intake Cooling Water (ICW)
- Component Cooling Water (CCW)
- Emergency Diesel Generator Building
- Condensate Storage Tank (CST)
- Steam Trestle Area
- Refueling Water Tank (RWT)

**AND**

- c. The existence of a FIRE is not verified within 30-minutes of alarm receipt.

**OR**

3. A FIRE within the plant PROTECTED AREA not extinguished within 60-minutes of the initial report, alarm or indication.

**OR**

4. A FIRE within the plant PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.

**Basis:**

This IC addresses the magnitude and extent of FIRES that may be indicative of a potential degradation of the level of safety of the plant.

EAL #1

The intent of the 15-minute duration is to size the FIRE and to discriminate against small FIRES that are readily extinguished (e.g., smoldering waste paper basket). In addition to alarms, other indications of a FIRE could be a drop in fire main pressure, automatic activation of a suppression system, etc.

Upon receipt, operators will take prompt actions to confirm the validity of an initial fire alarm, indication, or report. For EAL assessment purposes, the emergency declaration clock starts at the time that the initial alarm, indication, or report was received, and not the time that a subsequent verification action was performed. Similarly, the fire duration clock also starts at the time of receipt of the initial alarm, indication or report.

## Attachment 2

### EAL #2

This EAL addresses receipt of a single fire alarm, and the existence of a FIRE is not verified (i.e., proved or disproved) within 30-minutes of the alarm. Upon receipt, operators will take prompt actions to confirm the validity of a single fire alarm. For EAL assessment purposes, the 30-minute clock starts at the time that the initial alarm was received, and not the time that a subsequent verification action was performed.

A single fire alarm, absent other indication(s) of a FIRE, may be indicative of equipment failure or a spurious activation, and not an actual FIRE. For this reason, additional time is allowed to verify the validity of the alarm. The 30-minute period is a reasonable amount of time to determine if an actual FIRE exists; however, after that time, and absent information to the contrary, it is assumed that an actual FIRE is in progress.

If an actual FIRE is verified by a report from the field, then EAL #1 is immediately applicable, and the emergency must be declared if the FIRE is not extinguished within 15-minutes of the report. If the alarm is verified to be due to an equipment failure or a spurious activation, and this verification occurs within 30-minutes of the receipt of the alarm, then this EAL is not applicable and no emergency declaration is warranted.

### EAL #3

In addition to a FIRE addressed by EAL #1 or EAL #2, a FIRE within the plant PROTECTED AREA not extinguished within 60-minutes may also potentially degrade the level of plant safety.

### EAL #4

If a FIRE within the plant PROTECTED AREA is of sufficient size to require a response by an offsite firefighting agency (e.g., a local town Fire Department), then the level of plant safety is potentially degraded. The dispatch of an offsite firefighting agency to the site requires an emergency declaration only if it is needed to actively support firefighting efforts because the fire is beyond the capability of the

Fire Brigade to extinguish. Declaration is not necessary if the agency resources are placed on stand-by, or supporting post-extinguishment recovery or investigation actions.

### Basis-Related Requirements from Appendix R and NFPA-805

Appendix R to 10 CFR 50, states in part that Criterion 3 of Appendix A to this part specifies that "Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions."

The Nuclear Safety Goal ("NSG") in NFPA 805, Section 1.3.1 states, "The nuclear safety goal is to provide reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition."

When considering the effects of fire, those systems associated with achieving and maintaining safe shutdown conditions assume major importance because a safe shutdown success path, free

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of fire damage, must be available to meet the nuclear safety goals, objectives and performance criteria for a fire under any plant operational mode or configuration..

Because fire may affect safe shutdown systems and because the loss of function of systems used to mitigate the consequences of design basis accidents under post-fire conditions does not per se impact public safety, the need to limit fire damage to systems required to achieve and maintain safe shutdown conditions is greater than the need to limit fire damage to those systems required to mitigate the consequences of design basis accidents.

In addition, Appendix R to 10 CFR 50, requires, among other considerations, the use of 1-hour fire barriers for the enclosure of cable and equipment and associated non-safety circuits of one redundant train (G.2.c). Even though St. Lucie has adopted the alternate approach provided by NFPA-805 in lieu of the deterministic requirements of Appendix R, the 30-minutes to verify a single alarm as used in EAL HU2.2 is considered a reasonable amount of time to determine if an actual FIRE exists without presenting a challenge to the nuclear safety performance criteria..

Depending upon the plant mode at the time of the event, escalation of the emergency classification level would be via St. Lucie EAL HA2.

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Florida Power and Light Company  
St. Lucie, Units 1 and 2

LICENSE AMENDMENT REQUEST

DEVIATIONS AND DIFFERENCES MATRIX

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#### General Comments

Comment #	NEI 99-01, Rev 6	St. Lucie	Change	Justification	Validation #
1	Example EAL statement	Changed to EAL Value	Difference	Consistent with pre-existing EAL scheme	None
2	No use of logical OR	Logical OR between EAL numbers	Difference	Consistent with pre-existing EAL scheme	None
3	EAL numbers surrounded by parenthesis	EAL numbers followed by "."	Difference	Consistent with pre-existing EAL scheme	None
4	Site specific information or indication statements	Site specific information or indication statements were replaced with St. Lucie information or indications where applicable and the statement deleted.	Difference	Compliance with intent of the guidance. Areas listed are unchanged from St. Lucie's previous approved EAL revision	None
5	Parameters or indications listed in EALs	Some parameters or indications listed in EALs were placed in tables or bulletized lists	Difference	Tables or bullets were created to present St. Lucie-specific information in a manner familiar to and desired by scheme users	None
6	[for plants with an ISFSI outside the plant Protected Area]	Deleted all references to ISFIS outside of Protected Area	Difference	The St. Lucie ISFSI is located within the Protected Area	None
7	HU4	HU2	Difference	Consistent with pre-existing EAL scheme	None
8	EAL 2.2.a use of (i.e.,..... )	Replaced with "with"	Difference	Editorial	None

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Section	NEI 99-01, Rev 6	St. Lucie	Change	Justification	Validation #
HU2	Recognition Category: HU4	HU2	Difference	Comment 7	None
	<b>Initiating Condition:</b> FIRE potentially degrading the level of level of safety of the plant.	<b>Initiating Condition:</b> FIRE potentially degrading the level of level of safety of the plant.	Verbatim		None
	<b>Operating Mode Applicability:</b> All	<b>Operating Mode Applicability:</b> All	Verbatim		None
	<b>Example Emergency Action Levels:</b> (1 or 2 or 3 or 4)	<b>EAL Value:</b>	Difference	Comment 1	None
	<b>Note:</b> The Emergency Director should declare the Unusual Event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.	<b>Note:</b> The Emergency Director should declare the Unusual Event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.	Verbatim		None
	(1) a. A FIRE is NOT extinguished within 15-minutes of ANY of the following FIRE detection indications: <ul style="list-style-type: none"> <li>Report from the field (i.e., visual observation)</li> <li>Receipt of multiple (more than 1) fire alarms or indications</li> <li>Field verification of a single fire alarm</li> </ul> <b>AND</b>	1. a. A FIRE is NOT extinguished within 15-minutes of ANY of the following FIRE detection indications: <ul style="list-style-type: none"> <li>Report from the field (i.e., visual observation)</li> <li>Receipt of multiple (more than 1) fire alarms or indications</li> <li>Field verification of a single fire alarm</li> </ul> <b>AND</b>	Difference Verbatim	Comment 3	None
	b. The FIRE is located within <b>ANY</b> of the following plant rooms or areas: (site-specific list of plant rooms or areas)	b. The FIRE is located within <b>ANY</b> of the following plant rooms or areas : <ul style="list-style-type: none"> <li>Reactor Containment Building and Shield Building</li> <li>Control Room</li> <li>Reactor Auxiliary Building (RAB)</li> <li>Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB</li> <li>Diesel Oil Storage Tank (DOST)</li> <li>Ultimate Heat Sink (UHS)</li> <li>Intake Structure</li> <li>Intake Cooling Water (ICW)</li> <li>Component Cooling Water (CCW)</li> <li>Emergency Diesel Generator Building</li> <li>Condensate Storage Tank (CST)</li> <li>Steam Trestle Area</li> <li>Refueling Water Tank (RWT)</li> </ul>	Verbatim Difference	Comments 4 and 5	None
	(2) a. Receipt of a single fire alarm (i.e., no other indications of a FIRE). <b>AND</b> b. The FIRE is located within <b>ANY</b> of the following	<b>OR</b> 2. a. Receipt of a single fire alarm with no other indications of a FIRE. <b>AND</b> b. The FIRE is located within <b>ANY</b> of the following	Difference Difference Verbatim Verbatim	Comment 2 Comment 3 and 8	None

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HU2	<p>plant rooms or areas: (site-specific list of plant rooms or areas))</p> <p><b>AND</b></p> <p>c. The existence of a FIRE is not verified within 30-minutes of alarm receipt.</p>	<p>plant rooms or areas :</p> <ul style="list-style-type: none"> <li>• Reactor Containment Building and Shield Building</li> <li>• Control Room</li> <li>• Reactor Auxiliary Building (RAB)</li> <li>• Turbine building if the fire precludes access to the Steam Trestle, Control Room or RAB</li> <li>• Diesel Oil Storage Tank (DOST)</li> <li>• Ultimate Heat Sink (UHS)</li> <li>• Intake Structure</li> <li>• Intake Cooling Water (ICW)</li> <li>• Component Cooling Water (CCW)</li> <li>• Emergency Diesel Generator Building</li> <li>• Condensate Storage Tank (CST)</li> <li>• Steam Trestle Area</li> <li>• Refueling Water Tank (RWT)</li> </ul> <p><b>AND</b></p> <p>c. The existence of a FIRE is not verified within 30-minutes of alarm receipt.</p>	<p>Difference</p> <p>Verbatim</p>	<p>Comments 4 and 5</p>	
	<p>3. A FIRE within the plant or ISFSI [for plants with an ISFSI outside the plant Protected Area] PROTECTED AREA not extinguished within 60-minutes of the initial report, alarm or indication.</p> <p>4. A FIRE within the plant or ISFSI [for plants with an ISFSI outside the plant Protected Area] PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.</p>	<p><b>OR</b></p> <p>3. A FIRE within the plant PROTECTED AREA not extinguished within 60-minutes of the initial report, alarm or indication.</p> <p><b>OR</b></p> <p>4. A FIRE within the plant PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.</p>	<p>Difference</p> <p>Difference</p> <p>Difference</p> <p>Difference</p>	<p>Comment 2</p> <p>Comment 6</p> <p>Comment 2</p> <p>Comment 6</p>	<p>None</p>
	<p>Basis revised to include clarification of Containment fire alarms, and to include NFPA-805 in the discussion of Appendix R basis for the EAL thresholds</p> <p>Intent and meaning of the EALs are not altered</p>				