



Serial: NPD-NRC-2009-129  
June 30, 2009

10CFR52.79

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

**LEVY NUCLEAR POWER PLANT, UNITS 1 AND 2  
DOCKET NOS. 52-029 AND 52-030  
SUPPLEMENT 1 TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER  
NO. 022 RELATED TO EMERGENCY PLANNING**

- References:
1. Letter from Brian C. Anderson (NRC) to Garry Miller (PEF), dated March 6, 2009, "Request for Additional Information Letter No. 022 Related to SRP Section 13.3 for the Levy County Nuclear Plant, Units 1 and 2 Combined License Application"
  2. Letter from Garry D. Miller (PEF) to U. S. Nuclear Regulatory Commission, dated April 6, 2009, "Response to Request for Additional Information Letter No. 022 Related to Emergency Planning," Serial: NPD-NRC-2009-057

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby submits a supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter.

A revised response to the NRC request is addressed in the enclosure. The enclosure also identifies changes that will be made in a future revision of the Levy Nuclear Power Plant Units 1 and 2 application.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

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

Executed on June 30, 2009.

Sincerely,

Garry D. Miller  
General Manager  
Nuclear Plant Development

Enclosure

cc : U.S. NRC Region II, Regional Administrator  
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**Levy Nuclear Power Plant Units 1 and 2**  
**Supplement 1 to Response to NRC Request for Additional Information Letter No. 022**  
**Related to SRP Section 13.3 for the Combined License Application, dated March 6, 2009**

| <u>NRC RAI #</u> | <u>Progress Energy RAI #</u> | <u>Progress Energy Response</u>                 |
|------------------|------------------------------|---|
| 13.03-1          | L-0415                       | Revised response enclosed – see following pages |

**NRC Letter Number:** LEVY-RAI-LTR-022

**NRC Letter Date:** March 6, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI #:** 13.03-1

**Text of NRC RAI:**

SITE-4: EAL RAI for New Reactors

[Basis: 10 CFR 52.79(a)(21), 10 CFR 50.47(b)(4), Section IV.B of Appendix E to 10 CFR Part 50] EALs are discussed in Section D, "Emergency Classification System," of COL application Part 5.

The initial EALs, which are required by 10 CFR 50.47(b)(4) and Section IV.B of Appendix E to 10 CFR Part 50, must be approved by the NRC. The Levy County COL application does not fully address certain aspects of the required EAL scheme. This is because various equipment set points and other information cannot be determined until the as-built information is available; e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances. The NRC has identified the following two possible options to ensure applicants address the regulations:

Option 1 – Submit an entire EAL scheme, which contains all site-specific information, including set points. Until this information is finalized, EALs would remain an open item.

Option 2 – Submit emergency plan Section D, "Emergency Classification System," which addresses the four critical elements of an EAL scheme (listed below). The NRC will determine the acceptability of the EAL scheme.

*Critical Element 1* – Applicant proposes an overview of its emergency action level scheme including defining the four emergency classification levels, (i.e., Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency), as stated in NEI 99-01, Revision 5, with a general list of licensee actions at each emergency classification level.

*Critical Element 2* – Applicant proposes to develop the remainder of its EAL scheme by using a specified NRC endorsed guidance document. In the development of its EALs, the proposed EALs should be developed with few or no deviations or differences, other than those attributable to the specific reactor design. NEI 07-01, if endorsed, will be applicable to the AP1000 and ESBWR (passive) reactor designs, and NEI 99-01 is applicable to all (non-passive) reactor designs. If applicable, EALs related to digital instrumentation and control must be included. The NRC must find in the Safety Evaluation Report that this approach is acceptable for each site.

*Critical Element 3* – Applicant proposes a License Condition (LC) that the applicant will create a fully developed set of EALs in accordance with the specified guidance document. These fully developed EALs must be submitted to the NRC for confirmation at least 180 days prior to fuel load.

*Critical Element 4* – The EALs must be kept in a document controlled by 10 CFR 50.54(q), such as the emergency plan; or a lower tier document, such as the Emergency Plan Implementing Procedures.

Please review the two options provided above, identify which option will be chosen, and provide the detailed EAL information in support of the chosen option.

**PGN RAI ID #: L-0156**

**PGN Response to NRC RAI:**

Progress Energy will use Option 2 for the Levy Nuclear Plant (LNP) EALs. The LNP approach to each of the Critical Elements discussed in NRC's Request for Additional Information is described below:

Critical Element 1 – Levy Nuclear Plant Units 1, and 2 COL Application Part 5, Emergency Plan Section D, Paragraph D.1, provides an overview defining the four emergency classification levels: Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency as defined in NEI 99-01, Rev. 5.

The Levy Emergency Plan Section D also contains a general list of licensee actions at each emergency classification level.

Critical Element 2 – Levy Units 1 and 2 will develop the remainder of the site-specific EAL scheme using NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, Revision 0. The fully developed site-specific EAL scheme will be included in the Emergency Plan with no deviations.

Critical Element 3 – Progress Energy proposes the following License Condition related to the creation of a fully developed set of site-specific EALs in accordance with NEI 07-01 Revision 0 for Levy Units 1 and 2:

**PROPOSED LICENSE CONDITION:**

Progress Energy-Florida shall submit a fully developed set of site-specific Emergency Action Levels (EALs) for Levy Units 1 [Unit 2] to the NRC in accordance with NEI 07-01 revision 0, with no deviations. These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

This license condition will be added to Part 10 of the Levy Unit 1 and 2 COL Application.

Critical Element 4 – The fully developed site-specific EAL scheme will be incorporated into the Emergency Plan. Accordingly, section D and Appendix 4 of the Emergency Plan will require future changes to the EAL scheme to be evaluated under 10 CFR 50.54(q) to ensure such changes will not reduce the effectiveness of the Emergency Plan.

**Associated Levy COL Application Revisions:**

The following changes will be made to the Levy COL application, Part 5 Emergency Plan in a future revision.

1. Revise Section D.1:

**From:**

**1. CLASSIFICATION SYSTEM**

**1.1 UNUSUAL EVENT**

Events are in process or have occurred which indicate a potential degradation of the level of safety of the Plant or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

Emergency Action Levels (EALs) for this classification are selected based upon the potential to degenerate to a more severe situation.

The purpose of the UNUSUAL EVENT classification is to bring the operating staff to a state of readiness in the event of escalation to a more severe action level classification, and to provide for systematic handling of event information and its related decision making.

**1.2 ALERT**

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the Plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

As in the case of the UNUSUAL EVENT, the ALERT classification includes emergency situations which are not expected to threaten the public, but for which it is deemed prudent to alert the off-site emergency organizations and mobilize a portion thereof.

The purpose of the ALERT classification is to assure that emergency personnel are readily available to respond if situations become more serious, or to perform confirmatory radiation monitoring as required, and to provide off-site authorities with current status information.

Also, since those events initiating an ALERT classification are those with the potential for limited release of radioactive material to the environment, broader assessment actions shall be initiated than those utilized for an UNUSUAL EVENT.

**1.3 SITE AREA EMERGENCY**

Events are in process or have occurred which involve actual or likely major failures of Plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment need for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

This emergency classification, unlike the two previously described classifications, is very likely to involve some radiation exposure to the public and the potential for escalation to the GENERAL EMERGENCY classification.

The purpose of the SITE AREA EMERGENCY classification is to: (a) assure that response centers are staffed; (b) assure that Radiation Monitoring Teams are dispatched; (c) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious; and (d) provide current information for consultation with off-site authorities and the public. Its purpose is not to initiate protective actions.

#### 1.4 GENERAL EMERGENCY

Events which are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.

It also includes other accidents that have large radioactive release potential, such as fuel handling and waste gas system accidents. This is the most severe classification of emergency.

The purpose of the GENERAL EMERGENCY classification is to (a) initiate predetermined protective actions for the public; (b) provide continuous assessment of information from on-site and off-site measurements; (c) initiate additional measures indicated by event releases or potential releases; and (d) provide current information and consultation with off-site authorities and the public. Since the lower limits of the EPA PAGs are likely to be exceeded upon the declaration of a GENERAL EMERGENCY, the Emergency Coordinator may recommend some protective actions.

To:

### 1. CLASSIFICATION SYSTEM

#### 1.1 NOTIFICATION OF UNUSUAL EVENT (UNUSUAL EVENT)

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

Emergency Action Levels (EALs) for this classification are selected based upon the potential to degenerate to a more severe situation.

The purpose of the UNUSUAL EVENT classification is to bring the operating staff to a state of readiness in the event of escalation to a more severe action level classification, and to provide for systematic handling of event information and its related decision making.

#### 1.2 ALERT

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

As in the case of the UNUSUAL EVENT, the ALERT classification includes emergency situations which are not expected to threaten the public, but for which it is deemed prudent to alert the off-site emergency organizations and mobilize a portion thereof.

The purpose of the ALERT classification is to assure that emergency personnel are readily available to respond if situations become more serious, or to perform confirmatory radiation monitoring as required, and to provide off-site authorities with current status information.

Also, since those events initiating an ALERT classification are those with the potential for limited release of radioactive material to the environment, broader assessment actions shall be initiated than those utilized for an UNUSUAL EVENT.

### 1.3 SITE AREA EMERGENCY

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

This emergency classification, unlike the two previously described classifications, is very likely to involve some radiation exposure to the public and the potential for escalation to the GENERAL EMERGENCY classification.

The purpose of the SITE AREA EMERGENCY classification is to: (a) assure that response centers are staffed; (b) assure that Radiation Monitoring Teams are dispatched; (c) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious; and (d) provide current information for consultation with off-site authorities and the public. Its purpose is not to initiate protective actions.

### 1.4 GENERAL EMERGENCY

Events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels off-site for more than the immediate site area.

It also includes other accidents that have large radioactive release potential, such as fuel handling and waste gas system accidents. This is the most severe classification of emergency.

The purpose of the GENERAL EMERGENCY classification is to (a) initiate predetermined protective actions for the public; (b) provide continuous assessment of information from on-site and off-site measurements; (c) initiate additional measures indicated by event releases or potential releases; and (d) provide current information and consultation with off-site authorities and the public. Since the lower limits of the EPA PAGs are likely to be exceeded upon the declaration of a GENERAL EMERGENCY, the Emergency Coordinator may recommend some protective actions.

## 2. Revise Section D.2:

**From:**



### Emergency Action Levels (EALs)

This section incorporates by reference NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, Rev. 0, dated March, 2008, (Reference K) which is currently under review by NRC staff. Because this document has not yet been endorsed by the NRC, EALs contained in this Plan will be subject to further review and modification based on the version of NEI 99-01 ultimately endorsed in a future revision to NRC Regulatory Guide 1.101, or other accepted guidance, modified consistent with the improvements to facility design and operation as reflected in the AP1000 Design Control Document (DCD). Appendix 4 provides the parameter values and equipment status that are indicative of each emergency class.

### To:

### Emergency Action Levels (EALs)

NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, Rev. 0. (Reference K) provides the basis for the LNP EALs. Appendix 4, Emergency Action Levels, provides the parameter values and equipment status that are used in classifying emergencies at LNP.

3. Delete Section D.3 and insert the following as the second paragraph of Appendix 4, Emergency Action Levels:

The State of Florida and local counties of Citrus, Levy, and Marion, support the emergency classification and emergency action level scheme established by LNP. The content of the EALs is reviewed with the state and county authorities on an annual basis.

4. Delete Section D.4. The section is related to off-site emergency procedures. Local and State support in the event of an emergency at the LNP is contained in the State of Florida Radiological Emergency Management Plan and does not need to be duplicated in the LNP Emergency Plan.
5. Add the following to Levy Nuclear Plant Units 1 and 2 COL Application Part 10 Proposed License Conditions (Including ITAAC):

### **11. EMERGENCY PREPAREDNESS EMERGENCY ACTION LEVELS (EALS)**

An implementation license condition to submit an EAL scheme as referenced in COLA Part 5 Emergency Plan, to the NRC for confirmation.

### **PROPOSED LICENSE CONDITION**

Progress Energy-Florida shall submit a fully developed set of site-specific Emergency Action Levels (EALs) for Levy Units 1 [Unit 2] to the NRC in accordance with NEI 07-01 revision 0, with no deviations. These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

**Attachments / Enclosures:**

None.