

## LevyCountyRAIsPEm Resource

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**From:** Habib, Donald  
**Sent:** Thursday, April 10, 2014 7:57 AM  
**To:** LevyCountyRAIsPEm Resource  
**Subject:** Request for Additional Information Letter No. 117 Related to SRP Section 6.3, ECCS, for the Levy Nuclear Plant COL  
**Attachments:** Levy RAI Letter 117 for RAI 7475.docx

**Hearing Identifier:** Levy\_County\_COL\_eRAIs  
**Email Number:** 115

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**Subject:** Request for Additional Information Letter No. 117 Related to SRP Section 6.3,  
ECCS, for the Levy Nuclear Plant COL  
**Sent Date:** 4/10/2014 7:56:54 AM  
**Received Date:** 4/10/2014 7:56:57 AM  
**From:** Habib, Donald

**Created By:** Donald.Habib@nrc.gov

**Recipients:**  
"LevyCountyRAIsPEm Resource" <LevyCountyRAIsPEm.Resource@nrc.gov>  
Tracking Status: None

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Levy RAI Letter 117 for RAI 7475.docx		36440

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

April 10, 2014

Mr. Christopher M. Fallon  
Vice President, Nuclear Development  
Duke Energy Florida, Inc.  
P.O. Box 1006 – EC12L  
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 117 RELATED TO  
STANDARD REVIEW PLAN SECTION 6.3, EMERGENCY CORE COOLING  
SYSTEM, FOR THE LEVY NUCLEAR PLANT, UNITS 1 AND 2, COMBINED  
LICENSE APPLICATION

Dear Mr. Fallon:

By letter dated July 28, 2008, as supplemented by a letter dated September 12, 2008, Progress Energy Florida, Inc., now Duke Energy Florida, submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-1035.

Sincerely,

Donald Habib, Project Manager  
Licensing Branch 4  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-029  
52-030

eRAI Tracking Nos. 7475

Enclosure:  
Request for Additional Information

If you have any questions or comments concerning this matter, you may contact me at 301-415-1035.

Sincerely,

Donald Habib, Project Manager  
Licensing Branch 4  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-029  
52-030

eRAI Tracking Nos. 7475

Enclosure:  
Request for Additional Information

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NAME	IFrankl*	KRoach*	DHabib*
DATE	3/31/14	4/1/14	4/10/14

\*Approval captured electronically in the electronic RAI system.

**OFFICIAL RECORD COPY**

## **Request for Additional Information 117**

Issue Date: 04/10/2014

Application Title: Levy County, Units 1 and 2 - Dockets 52-029 and 52-030

Operating Company: Duke Energy Florida

Docket No. 52-029 and 52-030

Review Section: 06.03 - Emergency Core Cooling System

### **QUESTIONS**

#### **06.03-10**

As stated in section 4.3.3.5 of the Utility Requirements Document (URD) and restated in Section 2.3.2 of the staff's safety evaluation, a design requirement for the passive decay heat removal system is to have sufficient water capacity in the passive decay heat water pools to permit 72 hours of operation after SCRAM without the need for refill (ADAMS Accession No. ML070600372). Based upon the licensing guidance in the URD, NUREG-1242, SECY-94-084, and the Regulatory Treatment of Non-Safety Systems (RTNSS) as discussed in the Section 19.3 of the Standard Review Plan, in order for the Passive Residual Heat Removal Heat Exchanger (PRHR-HX) to meet the requirements of GDC 34 and GDC 44, the In-containment Refueling Water Storage Tank (IRWST) should have sufficient capacity to permit a minimum of 72 hours of operation after SCRAM following an accident without the need for refill. The submitted changes to the passive core cooling system regarding condensate return has caused staff to question the mission time for the PRHR-HX/IRWST. The staff requests the following:

- What is the safety-related mission time for the PRHR-HX/IRWST following a non-LOCA accident?
- Provide the PRHR-HX tube plugging assumption used in the analysis of design basis accidents in Chapter 15 that credit use of the PRHR-HX.
- Provide the PRHR-HX tube plugging assumption used in the safe-shutdown analysis presented in Appendix E of Chapter 19.
- Update the FSAR to clarify the safety-related design basis for the PRHR-HX/IRWST regarding the 72 hour capacity of the IRWST for the mitigation of accidents.

#### **06.03-11**

In letter NPD-NRC-2014-005, dated February 07, 2014, Section 1.0 of Enclosure 2 states that among the "safety-related" design bases of the Passive Core cooling System (PXS) is the capability of the Passive Residual Heat Removal Heat Exchanger (PRHR-HX) to cool the Reactor Coolant System (RCS) to the safe shutdown condition of 420 °F in 36 hours. Compliance with safety-related design requirements is typically demonstrated through the use of conservative analyses or best estimate plus uncertainty evaluations. The best estimate shutdown temperature evaluation provided in Section 19E.4.10.2 has caused staff to question whether the treatment of uncertainty is adequate to demonstrate the safety-related design basis of the PRHR-HX having the capability to cool the RCS to 420 °F in 36 hours. Staff requests the following:

- Provide the conservative assumptions used for the AP1000 Safe Shutdown Temperature Evaluation.
- If obtaining safe shutdown in 36 hours is a safety-related design requirement, update the FSAR with a conservative, design-basis analysis.
- If it is determined that obtaining safe shutdown in 36 hours is not a safety-related design requirement, provide justification and update the FSAR accordingly.