March 11, 2013

Mr. Christopher M. Fallon
VP, Nuclear Development
Progress Energy Florida, Inc.
P.O. Box 1006 - ECO9D
Charlotte, NC 28202

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 112 RELATED TO SRP SECTIONS 11.2 FOR THE LEVY COUNTY 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. 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 301-415-8148.

Sincerely,

/RA/

Jerry Hale, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 7050

Enclosure:
Request for Additional Information

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DATE	3/11/13	2/28/13	3/11/13

***Approval captured electronically in the electronic RAI system.**

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Request for Additional Information
Levy County, Units 1 and 2
Dockets 52-029 and 52-030

Question 24734

This is a follow up to the applicant's response to Question 11.02-4.

In reviewing the applicant's response to Question 11.02-4, staff has found the response partly responsive to the staff's technical and regulatory concerns based on the AP1000 DCD and endorsement of RG 1.143, Rev. 2. The staff has identified the following issues and requests further clarifications from the applicant. Specifically, the issues and questions are:

1. In Table 1 of the response to Question 11.02-4, the applicant provides a monitoring tank source term based on FSAR Table 2.4.13-202, normalized to the 10 CFR Part 71 A_2 values. The radionuclide concentrations listed in this table are based on a fuel failure rate of 0.125%. This fuel failure rate is used for the purpose of complying with SPR Section 11.2, BTP 11-6, which addresses itself to a postulated event and radiological consequences outside of the scope and purpose of RG 1.143, Rev. 2. However, the maximum expected source term for each SSC should be based on an assumed 0.25% failed fuel fraction, as described in SRP Section 12.2. Therefore, for the purposes of demonstrating conformance with RG 1.143, Rev. 2, please revise the monitoring tank source term to a source term based on an assumed 0.25% failed fuel fraction.

2. In the response to Question 11.02-04, the applicant assumed that all of the radioactivity inventory in the mobile liquid radwaste processing equipment is contained within the demineralizer, with a volume of 1.42 m^3. However, the response does not provide a source term for the balance of the other components that are part of a typical mobile liquid waste processing system. In addition, it is unclear whether the total activity contained within all of the filters, resins, and charcoal contained within the mobile system is being considered. Finally, in demonstrating conformance with RG 1.143, Rev. 2 dose and acceptance criteria, the response assumes the operation of a single liquid mobile waste processing unit. However, DCD FSAR Figure 12.3-3 indicates that there could be up to three mobile waste systems operating at the same time in the radwaste building (RWB) and DCD FSAR Section 11.4 indicates that wet waste and solid waste could also be processed in the RWB. Therefore, the applicant is requested to provide the following information :

    a. Provide source term information for all major components of the mobile processing equipment that are expected to be present in the RWB, including the cumulative source term inventories for each type of mobile system (i.e., for liquid wastes, wet-wastes, and solid wastes).

    b. Describe how the source term for each mobile processing unit was derived in ensuring that the cumulative source terms account for the potential activity contained in all major components that make up a typical processing unit. Major components that are expected to contain a majority of the radioactivity include, for example, pre and post-filters, charcoal filters, ion exchange columns, pumps, and resin traps.

c. Provide the maximum cumulative dose rate for each of the three mobile waste processing systems that are expected to be present at any one time, in evaluating dose results against RG 1.143, Rev. 2, dose and acceptance criteria.

3. DCD FSAR Sections 11.4.2.5.2 and 11.4.1.3 indicate that the accumulation room contains pre-processed waste (including mixed liquid waste). RG 1.143, Rev. 2 indicates that all waste up until the point of packaging should be included in the building inventory in determining unmitigated exposures and doses from an unmitigated release. However, the applicant did not include a source term for pre-processed or unpackaged waste located in the RWB, or include pre-processed or unpackaged waste in its unmitigated dose/exposure calculations. Therefore, the applicant should ensure that all waste, excluding wastes that are packaged and ready for shipment, be included in the RWB unmitigated exposure and dose calculations in order to confirm that the total cumulative inventory of the radioactivity contained in all expected waste forms and quantities does not exceed the dose criteria for the assigned RW-IIc building classification.

4. In response to Question 11.02-4, Question 3, the applicant states that they will maintain the source term of each individual mobile processing unit below the 10 CFR Part 71 A_2 values. However, maintaining the source term of each individual unit below the A_2 values does not ensure that the aggregate value of all relevant sources in the RWB does not exceed the unmitigated dose and acceptance criteria of RG 1.143, Rev. 2. Therefore, the applicant's proposed revision to FSAR Section 13.5.2.2.5 and the proposed license condition provided in the response to Question 11.02-4 are not adequate to ensure that the amount of waste being stored in the building does not exceed that allowed by the assigned building classification. In addition, the proposed revision to FSAR Section 13.5.2.2.5 and the proposed license condition do not consider the radioactive inventories of pre-processed and unpackaged waste expected to be present in the RWB. Therefore, please revise FSAR Section 13.5.2.2.5 and the proposed license condition to account for all pre-processed and unpackaged waste, in addition to that contained in all mobile waste processing units, in order to ensure that the total cumulative source term of the building does not exceed RG 1.143, Rev. 2, dose and acceptance criteria.

5. In the response to Question 11.02-4, the applicant states that transfer of liquid wastes from the effluent tanks to the monitor tanks may occur without treatment. However, the direct transfer of untreated liquid wastes from the effluent tanks to the monitor tanks could result in the contents of the monitor tanks exceeding the 10 CFR Part 71 A_2 values or the resulting unmitigated exposures or doses from an unmitigated release from the RWB exceeding the RG 1.143, Rev. 2, dose and acceptance criteria, given the assigned classification of the RWB. In order not to exceed these safety classification criteria, direct transfer of liquid wastes to the RWB should only be permitted if the 10 CFR Part 71 A_2 values and the applicable dose criteria are not exceeded. Therefore, the applicant should make this distinction clear in describing the operational concept and procedural constraints in ensuring that the total cumulative source term of the RWB does not exceed RG 1.143, Rev. 2 dose and acceptance criteria.

6. The COL Item in DCD FSAR Section 11.2.5.1 states that, "The Combined License applicant will discuss how any mobile or temporary equipment used for **storing or processing** liquid radwaste conforms to Regulatory Guide 1.143, Rev. 2. For example, this **includes discussion of equipment containing radioactive liquid radwaste** in the

nonseismic Radwaste Building." Therefore, the FSAR should be updated to fully address this COL item. Specifically, the FSAR should be updated to include information demonstrating that the mobile processing equipment and SSCs for storing pre-processed and unpackaged waste will be in conformance with the assigned classification of the RWB.

7. The COL Item in DCD FSAR Section 11.4.6 states, in part, that, "It will be the plant operator's responsibility to assure that the vendors have appropriate process control programs for the scope of the work being contracted at any particular time. The process control program will identify the operating procedures for storing or processing wet solid waste. The mobile systems process control program will include a discussion of conformance to Regulatory Guide 1.143." Therefore, the response to this COL item should include a revision to the FSAR which provides a discussion of how waste processing (as liquid, wet, and solid waste) and the storage of pre-processed and unpackaged waste in the RWB will be implemented and controlled in order to comply with RG 1.143, Rev. 2 dose and acceptance criteria, given the assigned classification of the RWB.