

TurkeyPointRAIsPEm Resource

From: Comar, Manny
Sent: Monday, May 21, 2012 10:06 AM
To: TurkeyPointRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LTR. No: 63 RELATED TO SRP: 11.02
LIQUID WASTE MANAGEMENT SYSTEM FOR THE TURKEY POINT UNITS 6 AND 7
COMBINED LICENSE APPLICATION
Attachments: PTN-RAI-LTR-063.doc

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Subject: REQUEST FOR ADDITIONAL INFORMATION LTR. No: 63 RELATED TO SRP:
11.02 LIQUID WASTE MANAGEMENT SYSTEM FOR THE TURKEY POINT UNITS 6 AND 7
COMBINED LICENSE APPLICATION

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From: Comar, Manny

Created By: Manny.Comar@nrc.gov

Recipients:

"TurkeyPointRAIsPEM Resource" <TurkeyPointRAIsPEM.Resource@nrc.gov>

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May 21, 2012

Mano K. Nazar
Senior Vice President and Chief Nuclear Officer
Florida Power & Light Company
Mail Stop NNP/JB
700 Universe Blvd
Juno Beach, FL 33408-0420

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 063 RELATED
TO SRP SECTION.11.02 LIQUID WASTE MANAGEMENT SYSTEM FOR THE
TURKEY POINT NUCLEAR PLANT UNITS 6 AND 7 COMBINED LICENSE
APPLICATION

Dear Mr. Nazar:

By letter dated June 30, 2009, as supplemented by letters dated August 7, 2009, September 3, 2010, December 21, 2010 and December 16, 2011, Florida Power and Light 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 45 days of the date of this letter. If you are unable to provide a response within 45 days, please state when you will be able to provide the response. In the event the response submitted is incomplete, please indicate in the response when the complete response will be provided. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes. Your response should also indicate whether any of the information provided is to be withheld as exempt from public disclosure pursuant to 10 CFR 2.390.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3863 or manny.comar@nrc.gov.

Sincerely,

/RA/

Manny Comar, Lead Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-040
52-041

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-3863 or manny.comar@nrc.gov.

Sincerely,

/RA/

Manny Comar, Lead Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-040
52-041
eRAI Tracking No. 5695

Enclosure:
Request for Additional Information

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NRO-002

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NAME	MSampson*	MComar*	MComar*
DATE	4/26/12	5/08/12	5/21/12

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 5695

5/21/2012

Turkey Point Units 6 and 7
Florida P and L
Docket No. 52-040 and 52-041
SRP Section: 11.02 - Liquid Waste Management System
Application Section: 11.2, Radioactive Liquid Waste Processing System

QUESTIONS from Radiation Protection and Accident Consequence Branch (RPAC)

11.02-1

Section 11.2 of the Turkey Point FSAR describes a proposed method for disposal of radioactive liquid effluents by deep well injection. Deep well injection represents a disposal method that contains uncertainties and unevaluated sensitivity in the modeling data for which the NRC staff do not have sufficient information to perform confirmatory analysis. It is the understanding of the NRC staff that pursuant to 10 CFR 20.2007, "Compliance with environmental and health protection regulations," the applicant must also obtain approval from the Florida state agency responsible for underground injection control (UIC) permits for a Class I well. This process is not part of the NRC staff's safety evaluation and no information is requested regarding that permit process.

Rather, FSAR Section 11.2 does not provide sufficient detail for the staff to verify the methodologies and analytical limitations and assumptions used by the applicant to determine the projected dose from liquid effluents, and/or whether the pathway and hypothetical future intrusion scenario analysis may be excluded from consideration in dose estimates. After additional review and discussion, it is the NRC staff's understanding that due to the complexity and information limitations on transport, several conservative assumptions and simplified modeling constraints were used, in order to clearly bound credible estimates of dose and environmental behavior of the effluents. Therefore, please provide the following information:

- With respect to deep well injection into the Boulder Zone referred to in FSAR Section 11.2.3.5, please provide sufficient information on effluent release, dilution, transport, dispersion, uses, and other relevant factors, to support estimates of radiation dose from liquid effluents, including whether there are any projected liquid effluents that will not be discharged by this method.
- With respect to the deep well injection systems, structures, and components as discussed in FSAR Sections 11.2.1.2.5.1 (PTN SUP 11.2-1), 11.2.3.5 PTN COL 11.2-2 and 11.5-3), an overview of the proposed deep-well injection process, consistent with FSAR Section 9.2.6.2.1 as referenced in FSAR Section 11.2.3.5, sufficient for the staff to evaluate site-specific functions that are outside the scope of the DCD.

11.02-2

FSAR Section 11.2.3.5 and PTN COL 11.2-2 refer to the hypothetical intrusion scenario being an off-normal operation for which a cost benefit analysis is not needed. The information in the FSAR is not sufficient for the NRC staff to confirm the validity of the assumption. Pursuant to 10 CFR 50 Appendix I, Section II.D, a cost benefit analysis would be appropriate, as a minimum

indicating assumptions as to bounding values on dose and effluent fate. The licensee will not have control over the environment or the behavior of the public that might affect access to the effluent. Therefore, please provide additional information on bounding cost/benefit, in particular as to whether and/or why deviations of individual habits from the average are or are not reasonable under 10 CFR 50 Appendix I, Section III.A.2, i.e., accessing the Boulder Zone for extraction of liquids.

11.02-3

In Final Safety Analysis Report (FSAR) Section 11.2.3.5, PTN COL 11.2-2, the applicant stated that treated liquid radioactive waste from Unit 6 and 7 operation is to be discharged to the Boulder zone via deep injection wells. In Section 2.3.2.2.2 of the applicant's Environmental Report (ER), the applicant stated that "based on a review of data from other deep injection wells in southeast Florida, it is estimated that each injection well would have a maximum allowed injection capacity of 18.6 million gallons per day [GPD] at a peak hourly flow." Given the high total injection rate and the potential in the event of well malfunction for upward or interrupted flow while transiting nearer-surface aquifers from which water consumption may occur, and at least one report of which the NRC staff is aware that addresses what appears to be a similar (see footnote 1) occurrence, the NRC staff is unable to whether the applicant meets the acceptance criteria in SRP 11.2 and complies with the requirements of 10 CFR 20.2002. Therefore, please provide additional information on the bounding volumes and relative volumetric flow rates, sufficient to support the bounding conclusion that the injectate will proceed to the Boulder Zone and not other aquifers.

[1] Dausman, Alyssa M., Langevin, C., Sukop, M.C., and Walsh, V., Saltwater/Freshwater Interface Movement in Response to Deep-Well Injection in a Coastal Aquifer, 20th Salt Water Intrusion Meeting, June, 2008, Naples, Florida.

11.02-4

10 CFR 20.1301(e) delineates that 10 CFR Part 20 licensees subject to 40 CFR Part 190 environmental radiation standards shall also comply with 40 CFR Part 190, which is applicable to the entire fuel cycle. As the proposed Units 6 and 7 would be located near other fuel cycle facilities, 40 CFR Part 190 is applicable. The information provided in Final Safety Analysis Report (FSAR) Section 11.0, does not provide sufficient specificity as to 40 CFR Part 190 for the NRC staff to evaluate the entire fuel cycle for Units 6 and 7. Please provide information for comparison between the general environmental radiation standards in 40 CFR Part 190 and corresponding estimates of site environmental radiation dose, including relevant supporting bases and assumptions used in your analysis.