

TurkeyPointRAIsPEm Resource

From: Comar, Manny
Sent: Monday, October 03, 2011 3:11 PM
To: TurkeyPointRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 038 RELATED TO SRP SECTION 08.02 FOR THE TURKEY POINT UNITS 6 AND 7 COMBINED LICENSE APPLICATION
Attachments: PTN-RAI-LTR-038.doc

Hearing Identifier: TurkeyPoint_COL_eRAIs
Email Number: 46

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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 038 RELATED TO SRP SECTION 08.02 FOR THE TURKEY POINT UNITS 6 AND 7 COMBINED LICENSE APPLICATION
Sent Date: 10/3/2011 3:10:47 PM
Received Date: 10/3/2011 3:10:47 PM
From: Comar, Manny

Created By: Manny.Comar@nrc.gov

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

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| PTN-RAI-LTR-038.doc | 62970 | |

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

September 29, 2011

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. 038 RELATED
TO SRP SECTION 08.02 OFFSITE POWER 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 and December 21, 2010, 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 30 days of the date of this letter. If you are unable to provide a response within 30 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. 5993

Enclosure:
Request for Additional Information

Distribution:

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|--------|-----------|---------|-----------|-----------|
| NAME | RJenkins* | MComar* | BWeisman* | MComar* |
| DATE | 8/18/11 | 9/1/11 | 9/15/11 | 9/21/11 |

*Approval captured electronically in the electronic RAI system.

OFFICIAL RECORD COPY

Request for Additional Information No. 5993

9/29/2011

Turkey Point Units 6 and 7
Florida P and L
Docket No. 52-040 and 52-041
SRP Section: 08.02 - Offsite Power System
Application Section: 8.2

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-1

FSAR, Revision 2, Section 8.2.1 states that the transmission lines are designed with a basic insulation level (BIL) that will minimize flashovers caused by lightning. Please provide BIL value with basis.

08.02-2

FSAR, Revision 2, Subsection 8.2.1.1 states that 500-kV and 230-kV breakers are rated for 50 and 63 kilo-amperes respectively. No ratings are provided for the switchyard disconnect switches and no basis is provided for the specified fault ratings. Therefore, the applicant is requested to indicate why the ratings of circuit breakers and disconnect switches are adequate for the application. In particular, provide in the FSAR the calculated available fault current during the worst case scenario and justify the assumptions used in your analysis. Also, confirm that the breaker interrupting ratings, both symmetrical and asymmetrical, are consistent with the available fault.

08.02-3

FSAR, Revision 2, Subsection 8.2.1.1 states that the switchyard includes surge protective devices, and grounding and a lightning protection system in accordance with standard industry practice. FSAR Table 8.1-201 states that RG 1.204 is applicable to offsite and onsite power systems. Please clarify if surge protective devices, grounding and lightning system will follow the guidelines of RG 1.204 and revise FSAR Subsection 8.2.1.1 accordingly.

08.02-4

FSAR, Revision 2, Subsection 8.2.1.4 states that the transmission switchyard interface agreement will specify that grid maintenance and testing activities that could affect offsite power reliability be closely coordinated with Units 6 and 7. Please indicate the extent to which maintenance and modifications to the switchyard and substation will be reviewed, controlled, and approved through the PTN process.

08.02-5

FSAR, Revision 2, Subsection 8.2.1.4 does not provide details regarding testing and inspection of switchyard component. Please provide details in the FSAR regarding testing and inspection of switchyard component and the frequency at which they will be

tested/inspected. Also, discuss whether North American Electric Reliability Corporation standards will be used for switchyard maintenance and testing.

08.02-6

The Turkey Point switchyard (Clear Sky substation) is shared among Units 6 and 7. Accordingly, GDC 5 appears applicable. GDC 5 requires that component parts of the offsite power system not be shared among units without sufficient justification, thereby ensuring that an accident in one unit of a multi-unit facility can be mitigated using an available complement of mitigative features, including required ac power, irrespective of conditions in the other units and without giving rise to conditions unduly adverse to safety in another unit. RG 1.32 provides acceptable guidance related to the sharing of structures, systems, and components of the preferred offsite power system. Discuss in the FSAR how GDC 5 is met specifically the capacity of transmission lines to adequately support auxiliary loads of one unit during an accident where the other unit is in a safe shutdown condition.

08.02-7

FSAR, Revision 2, Section 8.2.2 states that the grid stability study examined the following contingencies: (1) loss of the largest source, (2) loss of most critical transmission circuit, (3) loss of the largest load, (4) grid stability following turbine trip, and (5) breaker failure. Additionally, FSAR states that the results of the grid stability analysis study do not indicate a loss of electric power from any remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power units or the loss of power from the transmission network. (1) Provide in the FSAR the assumptions made, results (maximum and minimum voltage, frequency variations, and frequency decay rate, etc.) and acceptance criteria for worst case. (2) Also, discuss how often the grid study is performed.

08.02-8

FSAR, Revision 2, Section 8.2.2 states that the results of turbine trip simulations demonstrate that the voltage and frequency of 230 kV switchyard buses remain within the limits required to maintain reactor coolant pump operation for at least 3 seconds following a turbine trip in either Unit 6 or 7. Provide in the FSAR, a summary of the simulation results (pre-trip steady-state voltage, voltage at the pump terminals with acceptance criteria.)

08.02-9

The scope of the interface agreement does not include communication to the grid operator of risk-sensitive plant maintenance activities that could affect grid conditions. Clarify whether: (a) they coordinate Nuclear Power Plant maintenance activities that can have an impact on the transmission system with the TSO; and (b) they have contacts with the TSO to determine current and anticipated grid conditions as part of the grid reliability evaluation performed before conducting grid-risk-sensitive maintenance activities. Clarify if risk sensitive maintenance activities are shared between the Units and if quantitative or qualitative grid reliability evaluation will be performed at PTN Units 6 & 7 as part of the maintenance risk assessment required by 10CFR 50.65(a)(4) before performing grid-risk-sensitive maintenance.

08.02-10

FSAR, Revision 2, Section 8.2.2 states that the transmission study confirmed that the interface requirements for steady state load, inrush kVA for motors, nominal voltage, allowable voltage regulation, nominal frequency, allowable frequency fluctuation, maximum frequency decay rate, and the limiting under frequency value for the RCP have been met. Please provide in the FSAR a summary of the grid stability interface evaluation results, the assumptions made, and the acceptance criteria for worst case analyzed.

08.02-11

Table 1.8-1 of the AP1000 design certification provides an interface item that states "the protective devices controlling the switchyard breakers are set with consideration given to preserving the plant grid connection following a turbine trip." This is to ensure that RCP bus voltage stays above the voltage required to maintain the flow assumed in the DCD Tier 2, Chapter 15 analyses for a minimum of 3 seconds following a turbine trip. Provide a reference to where this interface item is discussed in the FSAR.