HarrisRAIsPEm Resource

From: Tanya Simms
Sent: Friday, October 24, 2008 7:57 AM
To: HarrisRAIsPEm Resource
Subject: Request for Additional Information Letter No. 035 Related To SRP Section 08.02 for the Harris Units 2 and 3 Combined License Application
Attachments: HAR-RAI-LTR-035.doc

Hearing Identifier: HarrisCOL_eRAIs
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Subject: Request for Additional Information Letter No. 035 Related To SRP Section 08.02 for the Harris Units 2 and 3 Combined License Application
Sent Date: 10/24/2008 7:57:11 AM
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From: Tanya Simms

Created By: Tanya.Simms@nrc.gov

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October 24, 2008

James Scarola
Senior Vice President and
Chief Nuclear Officer
PO Box 1551
411 Fayetteville Street Mall
Raleigh NC 27602

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 035 RELATED TO SRP SECTION 08.02 FOR THE HARRIS UNITS 2 AND 3 COMBINED LICENSE APPLICATION

Dear Mr. Scarola:

By letter dated February 18, 2008, Progress Energy submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advance 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 301-415-1387 or you may contact Manny Comar, the lead project manager for the Harris combined license at 301-415-3863.

Sincerely,

/**RA**/

Tanya Simms, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-022
52-023

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-1387 or you may contact Manny Comar, the lead project manager for the Harris combined license at 301-415-3863.

Sincerely,

/**RA**/

Tanya Simms, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-022
52-023
ERAI Tracking No. 1428

Enclosure:
Request for Additional Information

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NAME	RJenkins*	TSimms*	AGendelman*	MComar*
DATE	10/03/08	10/07/08	10/20/08	10/24/08

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information No. 1428 Revision 0
Shearon Harris
Progress Energy Carolinas, Inc.
Docket No. 52-022 and 52-023
SRP Section: 08.02 - Offsite Power System
Application Section: 8.2

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-5

RAI-SRP 8.2-EEB-08

Section 8.2.1.2.1 of the applicant's FSAR states in part that "[t]ransformer protection consists of two different high speed schemes." Describe the high speed transformer protection schemes provided for HAR.

08.02-6

RAI-SRP 8.2-EEB-9

Section 8.2-1 of the applicant's FSAR states that, “Both the HAR 2 and HAR 3 switchyards have multiple off-site power sources from the transmission network . . . . The off-site sources have sufficient capacity and capability to support start-up, normal running, generator / turbine trip, and normal shutdown for HAR 2 and HAR 3." Not included in the list of functions is power used during abnormal operation or accident conditions. Standard Review Plan (SRP, NUREG-0800) Section 8.2 states that "[t]he offsite power system is referred to in industry standards and regulatory guides as the 'preferred power system.'" The NRC staff believes that offsite power system should be the preferred source of power for HAR Units 2 and 3, and that it should have sufficient capacity and capability to power safety in order to satisfy the requirements of 10 C.F.R. Part 50, Appendix A, General Design Criterion (GDC) 17. Please clarify the above statement to comply with the SRP, or demonstrate compliance with GDC 17.

08.02-7

RAI-SRP 8.2-EEB-10

Section 8.2-1 of the applicant's FSAR states that "[t]he HAR 2 and HAR 3 related transmission structures and support structures and systems are designed to withstand standard loading conditions for the HAR site as provided in DCD Section 8.2." Please provide the standard loading conditions that these structures and systems are designed to withstand.

08.02-8
RAI-SRP 8.2-EEB-11

Per the application's FSAR in Section 8.2.1, HAR Unit 2 and the existing Shearon Harris Nuclear Power Plant (HNP) share a switchyard. Please provide the following additional information:

a) What is the worst sustained undervoltage condition in the onsite distribution system at HAR Unit 2 that was found to occur with a severely degraded 230kV offsite system, simultaneous with a concurrent loss-of-coolant accident on HNP and unit trip on HAR Unit 2.
b) Describe how the requirements of General Design Criterion 5 of 10 C.F.R. Part 50, Appendix A are satisfied with respect to the common switchyard for HNP and HAR 2.
c) Will there be any impact on HAR 2 as a result of minimum, maximum or degraded common switchyard voltage? Please provide details.

08.02-9
RAI-SRP 8.2-EEB-12

Section 8.2.1.1.4 of the applicant's FSAR at 8.2-6 states that "the TSO [Transmission System Operator] also use monitoring/predictive analysis computer programs that can predict HAR switchyard voltages expected to occur upon realization of any one of a number of possible losses to the grid, including a trip of the HAR generator, a trip of another large generator, or the loss of an important transmission line."

Standard Review Plan (SRP, NUREG-0800) Section 8.2.III.F states that "[t]he results of the grid stability analysis must show that loss of the largest single supply to the grid does not result in the complete loss of preferred power. The analysis should consider the loss, through a single event, of the largest capacity being supplied to the grid, removal of the largest load from the grid, or loss of the most critical transmission line." Describe how your design satisfies the SRP, or justify an alternative.

08.02-10
RAI-SRP 8.2-EEB-13

Section 8.2.1.1.4 of the applicant's FSAR, "Transmission System Provider/Operator (TSP/TSO)," discusses the interfaces between HAR and PEC's Transmission Operations and Planning Department through a formal interface agreement between the two entities. It states that "HAR operators are directed to notify the TSO of any plant activity that may impact generation capability. The TSO is also required to monitor system conditions to ensure adequate voltage is maintained to support HAR, and promptly notify the HAR operators of existing, or anticipated conditions which would result in inadequate voltage support." As offsite power is shared between the existing Harris Nuclear Plant and HAR Unit 2, how is the above notification coordinated between the system operator and the operators of HNP and HAR Unit 2? In addition, does the interface agreement require that the operators be notified of periods when the system operator is unable to determine if offsite power voltage and capacity is inadequate?

08.02-11

RAI-SRP 8.2-EEB-14

It is not clear from the information provided in the FSAR how the power, control and instrumentation cables are routed from the switchyard to the reserve auxiliary transformers (RATs). If the routing of the cables from the switchyard to the RATs is underground, provide the design features and/or in-situ monitoring programs that will be implemented to avoid or arrest the degradation of cable insulation from the effects of moisture.