August 9, 2012

Mr. Scott Head, Manager
Regulatory Affairs
STP Units 3 & 4
Nuclear Innovation North America, LLC
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 418 RELATED TO SRP SECTION 03.08.04 FOR THE NUCLEAR INNOVATION NORTH AMERICA, LLC COMBINED LICENSE APPLICATION

Dear Mr. Head:

By letter dated September 20, 2007, South Texas Project (STP) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U. S. Nuclear Regulatory Commission (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.

NINA staff has requested to respond within 60 days of the date of this letter. The NRC staff accepts this request. If changes are needed to the 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, I can be reached at 301-415-3104 or by e-mail at Michael.Eudy@nrc.gov or you may contact George Wunder at 301-415-1494 or George.Wunder@nrc.gov.

Sincerely,

/RA/

Michael Eudy, Project Manager
LB3 Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 52-012
52-013

eRAI Tracking Nos.: 6404, 6405

Enclosure:
Request for Additional Information

cc: William Mookhoek
James Agles
Loree Elton

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Request for Additional Information 418

South Texas Project Units 3 and 4 - Dockets 52-012 and 52-013
South Texas Project Nuclear Operating Co
Review Section: 03.08.04 - Other Seismic Category I Structures
Application Section: FSAR 3H.3 and Chapter 11

QUESTIONS

03.08.04-38

10 CFR 50, Appendix A, General Design Criterion 2 states that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena without loss of capability to perform their safety functions. It also states that the design bases for these SSCs shall reflect the importance of the safety functions to be performed.

General Design Criterion 60 requires in part that nuclear power units control suitably the release of radioactive materials during normal operation and anticipated operational occurrences.

General Design Criterion 61 requires in part that radioactive waste systems be designed with suitable shielding and appropriate containment and confinement to assure adequate safety under normal and postulated accident conditions.

The applicant references Regulatory Guide (RG) 1.143, Revision 2, without exception and in referencing RG 1.143, Rev. 2, all SSCs of the radioactive waste management systems must be classified and designed in accordance with the classification system provided within the RG. In addition, RG 1.143, Revision 2, Regulatory Position 2, states that “For a BWR, the gaseous radwaste system includes the system provided for treatment of normal offgas releases from the main condenser vacuum system beginning at the point of discharge from the condenser air removal equipment,” and Regulatory Position 2.3 states, “The portions of the gaseous radwaste treatment system that are intended to store or delay the release of gaseous radioactive waste, including portions of structures housing these systems, should be classified as described in Regulatory Position 5 and designed in accordance with Regulatory Position 6.” Finally, in order to be consistent with RG 1.143, Rev. 2, all other SSCs of the radwaste processing system should be classified in accordance with Regulatory Position 5 of the RG.

In response to RAI 03.08.04-37, and in the related calculation packages provided for staff audit, the applicant provided their assumptions and calculations for meeting the unmitigated release and unmitigated exposure criteria described in Regulatory Guide 1.143 for the STP 3 & 4 radwaste building. The staff noted, however, that the applicant provided no information, either in the FSAR or in the calculation packages, that addressed the classification of the gaseous waste offgas system, which is located in the turbine building, or of the radwaste pipe tunnel, which contains offgas system components that are connected to other systems located in the radwaste buildings.

On the basis of the above, please update the appropriate sections of the FSAR to provide classification categories for the turbine building offgas system, including the portions of the turbine building housing this system, the radwaste pipe tunnel, and any additional pertinent

SSCs included in the FSAR, in accordance with Regulatory Positions 5 and 6 of Regulatory Guide 1.143, Rev. 2, or propose an acceptable alternative. For the SSCs noted above, the applicant is requested to provide information supporting the basis of the safety classifications and confirm that such SSCs are designed to meet the appropriate criteria for their classifications, given the guidance of RG 1.143, Rev. 2. The applicant is requested to provide sufficient information for the staff to do an independent evaluation confirming compliance with RG 1.143 or an independent evaluation of an alternate method, once formally submitted.

03.08.04-39

10 CFR 50, Appendix A, General Design Criterion 2 states that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena without loss of capability to perform their safety functions. It also states that the design bases for these SSCs shall reflect the importance of the safety functions to be performed.

General Design Criterion 60 requires in part that nuclear power units control suitably the release of radioactive materials during normal operation and anticipated operational occurrences.

General Design Criterion 61 requires in part that radioactive waste systems be designed with suitable shielding and appropriate containment and confinement to assure adequate safety under normal and postulated accident conditions.

In response to RAI 03.08.04-37, and in the related calculation packages provided for staff audit, the applicant provided their assumptions and calculations addressing the unmitigated release and unmitigated exposure criteria provided in Regulatory Guide 1.143, Revision 2, Regulatory Position 5.2 (RW-IIb), for the STP 3 & 4 radwaste buildings. In performing this analysis, however, the applicant assumed that various passive features in the buildings (such as cubicle shield walls) remained intact. By making the assumptions that various cubicle shield walls and building walls remained intact, the applicant took credit for the shielding provided by these intact walls in order to mitigate both the release of radioactive materials and worker exposure. It is the staff's position that the phrases "unmitigated radiological release" and "unmitigated exposure" as stated in Regulatory Position 5 of RG 1.143, Rev. 2, mean that no credit can be taken for building or system design features in reducing the source term or exposure since the objective is to define a bounding condition and an adequate radwaste building design. The staff concludes that the approach and assumptions used by the applicant in its evaluation are not consistent with the guidance provided in RG 1.143, Revision 2, for the Radwaste Building and associated SSCs.

Therefore, the applicant is requested to determine the dose rate at the boundary of the unprotected area from the maximum unmitigated radiological release and the maximum unmitigated exposure to site personnel within the protected area using a calculation which is consistent with the guidance provided in RG 1.143, Revision 2, and classify and design the Radwaste Building and associated SSCs appropriately, in accordance with the results of the calculation. Alternately, the applicant can use an alternative method to design the radwaste building and systems. For either option chosen, the applicant is requested to provide sufficient information for the staff to do an independent evaluation to either confirm compliance with RG 1.143, Rev. 2 or evaluate the acceptability of an alternate method, once formally submitted.