April 26, 2007

Mr. Dennis R. Madison
Vice President - Hatch
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway North
Baxley, GA 31513

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2 (HNP) - REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING ALTERNATE SOURCE TERM APPLICATION (TAC NOS. MD2934 AND MD2935)

Dear Mr. Madison:

By letter to the Nuclear Regulatory Commission dated August 29, 2006, Southern Nuclear Operating Company, Inc., proposed to revise the HNP licensing and design basis with a full scope implementation of an alternative source term. We have reviewed your application and have identified a need for additional information on containment analyses as set forth in the Enclosure.

We discussed this issue with your staff on April 17, 2007. Your staff indicated that it plans to submit a response to this issue within sixty (60) days of receipt of this letter.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: RAI

cc w/encl: See next page

April 26, 2007

Mr. Dennis R. Madison
Vice President - Hatch
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway North
Baxley, GA 31513

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2 (HNP) - REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING ALTERNATE SOURCE TERM APPLICATION (TAC NOS. MD2934 AND MD2935)

Dear Mr. Madison:

By letter to the Nuclear Regulatory Commission dated August 29, 2006, Southern Nuclear Operating Company, Inc., proposed to revise the HNP licensing and design basis with a full scope implementation of an alternative source term. We have reviewed your application and have identified a need for additional information on containment analyses as set forth in the Enclosure.

We discussed this issue with your staff on April 17, 2007. Your staff indicated that it plans to submit a response to this issue within sixty (60) days of receipt of this letter.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: RAI

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	LPL2-1 R/F	RidsNrrDorlLpl2-1(EMarinos)
RidsNrrPMRMartin (hard copy)	RDennig, NRR	RidsNrrLAMO'Brien (hard copy)
RidsRgn2MailCenter (SShaeffer)	BLee, NRR	RidsNrrDorlDpr
RidsAcrsAcnwMailCenter	RidsOgcRp	

ADAMS Accession No. - ML071090039 *transmitted by memo dated

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/SCVB/BC	NRR/LPL2-1/BC
NAME	RMartin:nc	MO'Brien	RDennig by memo	EMarinos
DATE	04/26/07	04/26/07	04/12/07*	04/26/07

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION
CONCERNING IMPLEMENTATION OF AN ALTERNATIVE SOURCE TERM
FOR EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2 (HNP)

Requests for Additional Information (RAIs) related to the Turbine Building Heating Ventilation and Air Conditioning (TB HVAC) System

HNP has proposed to credit the TB HVAC system for dose mitigation by purging the area around the main control room beginning 9 hours following design basis accidents (DBAs). The TB HVAC system design was not previously reviewed for this safety function. Please respond to the following questions concerning the use of the TB HVAC system for dose mitigation:

1. Since the TB HVAC system is not classified as safety-related, please provide the information requested below to show that the TB HVAC system is comparable to a system classified as safety-related. If any item is answered in the negative, please explain why the TB HVAC system should be found acceptable for dose mitigation.

    a) Are inservice inspection and inservice testing programs performed on the TB HVAC system in accordance with the American Society of Mechanical Engineers *Boiler Pressure Vessel Code* (ASME Code)?

    b) Have you considered adding a Limiting Condition for Operation to the Technical Specifications for this system including surveillance requirements? What kind of testing and surveillance do you propose?

    b) Is the TB HVAC system incorporated into the plant's Maintenance Rule program consistent with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants?"

    c) Does the TB HVAC system meet 10 CFR 50.49, "Environmental qualification of electrical equipment important to safety for nuclear power plants," and General Design Criterion (GDC) 4, "Environmental and dynamic effects design bases?"

2. Describe any changes to plant procedures that implement the dose mitigation function for the TB HVAC system and whether any training is necessary for plant personnel to implement the function.

3. The air for all TB HVAC dampers is supplied by interruptible service instrument air and failure of the air systems of both Units 1 and 2 would render both HVAC systems incapable of performing their required exhaust functions. In the event that pneumatic systems fail, have manual actions or overrides been developed to change the damper position?

RAIs on the Standby Liquid Control (SLC) System

Please respond to the following questions concerning the use of the SLC system for pH control of the suppression pool:

HNP has proposed to credit control of the pH in the suppression pool following a loss-of-coolant accident (LOCA) by means of injecting sodium pentaborate into the reactor core with the SLC system. The SLC system design was not previously reviewed for this safety function (pH control post-LOCA). Licensees proposing such credit need to demonstrate that the SLC system is capable of performing the pH control safety function assumed in the alternate source term (AST) LOCA dose analysis. The following questions are from a set of generic questions developed by the staff and are being provided to all boiling water reactor licensees with pending AST license amendment requests. In responding to questions regarding the SLC system, please focus on the proposed pH control safety function. The reactivity control safety function is not in question here. For example, the SLC system may be redundant with regard to the reactivity control safety function, but lack redundancy for the proposed pH control safety function. If HNP believes that the information was previously submitted to support the license amendment request to implement AST, please refer to where that information may be found in the documentation.

1. Please Identify whether the SLC system is classified as a safety-related system as defined in 10 CFR 50.2, “Definitions,” and whether the system satisfies the regulatory requirements for such systems. If the SLC system is not classified as safety-related, please provide the information requested in Items 1.1 to 1.5 below to show that the SLC system is comparable to a system classified as safety-related. If any item is answered in the negative, please explain why the SLC system should be found acceptable for pH control agent injection.

   1.1 Is the SLC system provided with standby AC power supplemented by the emergency diesel generators?

   1.2 Is the SLC system seismically qualified in accordance with Regulatory Guide (RG) 1.29, “Seismic Design Classification” and Appendix A to 10 CFR Part 100 (or equivalent used for original licensing)?

   1.3 Is the SLC system incorporated into the plant’s ASME Code inservice inspection and inservice testing programs based upon the plant’s code of record (10 CFR 50.55a)?

   1.4 Is the SLC system incorporated into the plant’s Maintenance Rule program consistent with 10 CFR 50.65?

   1.5 Does the SLC system meet 10 CFR 50.49 and Appendix A to 10 CFR Part 50 (GDC-4, or equivalent used for original licensing)?

2. Please describe proposed changes to plant procedures that implement SLC sodium pentaborate injection as a pH control additive. In addition, please address Items 2.1 to 2.5 below in your response. If any item is answered in the negative, please explain why the SLC system should be found acceptable for pH control additive injection.

   2.1 Are the SLC injection steps part of a safety-related plant procedure?

   2.2 Are the entry conditions for the SLC injection procedure steps symptoms of imminent or actual core damage?

2.3 Does the instrumentation cited in the procedure entry conditions meet the quality requirements for a Type E variable as defined in Tables 1 and 2 of RG 1.97 on accident monitoring instrumentation?

2.4 Have plant personnel received initial and periodic refresher training in the SLC injection procedure?

2.5 Have other plant procedures, (e.g., Emergency Response Guidines) that call for termination of SLC as a reactivity control measure been appropriately revised to prevent blocking of SLC injection as a pH control measure? (For example, the override before Step RC/Q-1, *"If while executing the following steps: ....it has been determined that the reactor will remain shutdown under all conditions without boron, terminate boron injection and....")*

3. Please show that the SLC system has suitable redundancy in components and features to assure that for onsite <u>or</u> offsite electric power operation its safety function of injecting sodium pentaborate for the purpose of suppression pool pH control can be accomplished assuming a single failure. For this purpose, the check valve is considered an active device since the check valve must open to inject sodium pentaborate. If the SLC system cannot be considered redundant with respect to its active components, the licensee should implement one of the three options described below, providing the information specified for that option for staff review.

3.1 <u>Option 1</u> Show acceptable quality and reliability of the non-redundant active components and/or compensatory actions in the event of failure of the non-redundant active components. If you choose this option, please provide the following information to justify the lack of redundancy of active components in the SLC system:

3.1.1 Identify the non-redundant active components in the SLC system and provide their make, manufacturer, and model number.

3.1.2 Provide the design-basis conditions for the component and the environmental and seismic conditions under which the component may be required to operate during a design-basis accident. Environmental conditions include design-basis pressure, temperature, relative humidity and radiation fields.

3.1.3 Indicate whether the component was purchased in accordance with Appendix B to 10 CFR Part 50. If the component was not purchased in accordance with Appendix B, provide information on the quality standards under which it was purchased.

3.1.4 Provide the performance history of the component both at the licensee's facility and in industry databases such as Equipment Performance and Information and Exchange System and Nuclear Plant Reliability Data System.

3.1.5 Provide a description of the component's inspection and testing program, including standards, frequency, and acceptance criteria.

3.1.6 Indicate potential compensating actions that could be taken within an acceptable time period to address the failure of the component. An example of a compensating action might be the ability to jumper a switch in the control room to overcome its failure. In your response, please consider the availability of compensating actions and the likelihood of successful injection of the sodium pentaborate when non-redundant active components fail to perform their intended functions.

3.2 Option 2 Provide for an alternative success path for injecting chemicals into the suppression pool. If you chose this option, please provide the following information:

4.2.1 Provide a description of the alternative injection path, its capabilities for performing the pH control function, and its quality characteristics.

42.2 Do the components which make up the alternative path meet the same quality characteristics required of the SLC system as described in Items 1.1 to 1.5, 2, and 3 above?

4.2.3 Does the alternate injection path require actions to be taken in areas outside the control room? How accessible will these areas be? What additional personnel would be required?

3.3 Option 3 Show that 10 CFR 50.67 dose criteria are met even if the pH is not controlled. If you chose this option, demonstrate through analyses that the projected accident doses will continue to meet the criteria of 10 CFR 50.67 assuming that the suppression pool pH is not controlled. The dissolution of cesium iodide (CsI) and its re-evolution from the suppression pool as elemental iodine must be evaluated by a suitably conservative methodology. The analysis of iodine speciation should be provided for staff review. The analysis documentation should include a detailed description and justification of the analysis assumptions, inputs, methods, and results. The resulting iodine speciation should be incorporated into the dose analyses. The calculation may take credit for the mitigating capabilities of other equipment, for example the standby gas treatment system, if such equipment would be available. A description of the dose analysis assumptions, inputs, methods, and results should be provided. Licensees proposing this approach should recognize that this option may incur longer staff review times and will likely involve fee-billable support from NRC staff contractor support.

Edwin I. Hatch Nuclear Plant, Units 1 & 2

cc:

Laurence Bergen
Oglethorpe Power Corporation
2100 E. Exchange Place
P.O. Box 1349
Tucker, GA 30085-1349

Mr. R. D. Baker
Manager - Licensing
Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

Resident Inspector
Plant Hatch
11030 Hatch Parkway N.
Baxley, GA 31531

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE., Suite 1252
Atlanta, GA 30334

Steven M. Jackson
Senior Engineer - Power Supply
Municipal Electric Authority of Georgia
1470 Riveredge Parkway, NW
Atlanta, GA 30328-4684

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
244 Washington St., SW
Atlanta, GA 30334

Arthur H. Domby, Esq.
Troutman Sanders
Nations Bank Plaza
600 Peachtree St, NE, Suite 5200
Atlanta, GA 30308-2216

Chairman
Appling County Commissioners
County Courthouse
Baxley, GA 31513

Mr. Jeffrey T. Gasser
Executive Vice President
Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

General Manager
Edwin I. Hatch Nuclear Plant
Southern Nuclear Operating Company, Inc.
U.S. Highway 1 North
P.O. Box 2010
Baxley, GA 31515

Mr. K. Rosanski
Resident Manager
Oglethorpe Power Corporation
Edwin I. Hatch Nuclear Plant
P.O. Box 2010
Baxley, GA 31515