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October 3, 2006

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

**Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC
Oconee Nuclear Site, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
License Amendment Request Applicable to Technical Specification 3.8.1,
AC Sources – Operating
Request For Additional Information
License Amendment Request (LAR) 2006-16**

In accordance with the provisions of 10 CFR 50.90, Duke Power Company LLC d/b/a Duke Energy Carolinas (Duke) submitted a License Amendment Request (LAR) for the Facility Operating Licenses and Technical Specifications (TS) for Oconee Nuclear Station on September 27, 2006. The proposed amendment requests that the Completion Time (CT) of Technical Specification (TS) 3.8.1, AC Sources – Operating, Required Action (RA) C.2.2.5 be extended to allow for a total completion time of 75 days. This is a one time change that will expire at 1029 hours on November 3, 2006.

On October 2, 2006, Duke received a Request for Additional Information (RAI) from the Nuclear Regulatory Commission (NRC). The RAI response was submitted October 2, 2006.

On October 3, 2006, Duke received another RAI from the NRC relative to providing statements in the submittal concerning the quality of the Probabilistic Risk Assessment, Revision 3a. The requested information is provided in Enclosure 2.

This response is bounded by the no significant hazards consideration provided in the original submittal.

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No additional NRC commitments have been identified. Implementation of this proposed TS change will not require revision to the Oconee Updated Final Safety Analysis Reports (UFSAR). Duke is requesting NRC review and approval of this LAR by close of business October 3, 2006 with implementation to occur immediately.

Inquiries on this proposed amendment request should be directed to Reene' Gambrell of the Oconee Regulatory Compliance Group at (864) 885-3364.

Sincerely,

A handwritten signature in cursive script that reads "Bruce Hamilton".

B. H. Hamilton, Vice President
Oconee Nuclear Site

Enclosures:

1. Notarized Affidavit
2. Request for Additional Information

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bc w/enclosures and attachments:

Mr. W. D. Travers, Regional Administrator
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Mr. D. W. Rich
Senior Resident Inspector
Oconee Nuclear Site

Mr. Henry Porter, Director
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Bureau of Land and Waste Management
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bcc w/enclosures and attachments:

B. G. Davenport
R. V. Gambrell
H. T. Grant
L. F. Vaughn
S. D. Capps
S. L. Batson
T. P. Gillespie
S. L. Nader
R. L. Gill – NRI&IA
R. D. Hart – CNS
C. J. Thomas - MNS
NSRB, EC05N
ELL, ECO50
File - T.S. Working
ONS Document Management

ENCLOSURE 1
NOTARIZED AFFIDAVIT

AFFIDAVIT

B. H. Hamilton, being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth herein are true and correct to the best of his knowledge.

Bruce Hamilton

B. H. Hamilton, Vice President
Oconee Nuclear Site

Subscribed and sworn to before me this 3rd day of October, 2006

Sheila R Smith
Notary Public

My Commission Expires:

6/12/2013

Date

SEAL

ENCLOSURE 2

REQUEST FOR ADDITIONAL INFORMATION

Enclosure 2 – Request for Additional Information
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Subject: License Amendment Request Applicable to Technical Specification 3.8.1,
AC Sources - Operating
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QUESTION

Provide assurance of the Quality of Oconee Probabilistic Risk Assessment, Revision 3a.

RESPONSE

PRA Technical Adequacy Requirements

Between May 7-11, 2001, Oconee participated in the B&W Owners Group (B&WOG) PRA Certification Program.

The Oconee PRA has been evaluated so as to ensure technical adequacy of the model. This includes a review and disposition of outstanding A & B facts and observations (F&O's) identified in the Peer Review process. The results of these evaluations are summarized below.

Strengths

- Thorough evaluation of model results and insights
- Analysis of uncertainties
- Modeling of reactor coolant pump (RCP) seal Loss of Coolant Accidents (LOCAs) and electric power recovery
- Small break LOCA modeling
- Detailed modeling of Keowee
- Process for maintaining the model up to date
- Rigorous Level 2 and 3 PRA

Recommended Areas for Improvement

- Better documentation of independent verification of critical inputs
- Better documentation of support system initiators and dependencies
- Common cause analysis can be strengthened
- Improved documentation of human error reliability dependencies and timing
- More rigorous treatment of Steam Generator Tube Ruptures
- Provide guidance for application of Unit 3 model to Units 1 and 2

Based on the PRA peer review report, the Oconee PRA received 4 Fact and Observations (F&O) with the significance level of "A" and 35 F&O with the significance level of "B." All four of the "A" findings have been addressed and incorporated into Oconee PRA Rev. 3a update. Twenty-eight of the "B" F&O have already been incorporated into Revision 3a of the PRA.

The seven remaining open "B" F&O items have been reviewed. Two F&O items are related to improving the documentation of the human reliability analysis (HRA), three F&O items are related to the Level 2/3 of the PRA, and the remaining 2 open F&O items are related to

improving documentation in the thermal hydraulic analyses. (A more detailed write-up of the seven open F&O is shown below.)

“A” F&O received	4
“A” F&O closed	4
Total “B” F&O received	35
“B” F&O closed	28

The seven remaining open “B” F&O items are discussed below:

1) Element HR-3

“The basis for the time available to perform human actions is not well documented in the human reliability worksheets. In some cases the basis analysis could not be retrieved. A specific reference to the applicable analysis should be included as a part of the human reliability worksheet.”

Disposition: This item is related to improving documentation of inputs to the HRA. No specific deficiencies were identified by the peer review team. Therefore, there is no expected impact on this License Amendment Request (LAR).

2) Element HR-5

“The basis for the time available for human actions appears to be mostly generic analysis supplemented by some plant specific analysis. Additionally, several analyses could not be retrieved.”

Disposition: This item is related to improving documentation of inputs to the HRA. No specific deficiencies were identified by the peer review team. Therefore, there is no expected impact on this LAR.

3) Element L2-3

“There are some very important assumptions made in the quantification of the containment event tree (CET) involving fission product scrubbing and plateout that are not justified, and would be difficult to defend as they involve controversial issues that are not mechanistically modeled in the MAAP code. In fact source term reduction factors for these issues are just input assumptions when running MAAP. These include scrubbing of fission products in the steam generator when SG cooling is available and plateout in the Auxiliary Building for the interfacing systems loss of coolant accident (ISLOCA). Insights from regulatory applications with Level 3 PRAs indicate that source term reduction factors for scrubbing and plateout are difficult to defend. Similar concerns were raised in the TMI review that used the Oconee Level 2 PRA as a basis.”

Disposition: This issue is related to the Level 2 and Level 3 of the PRA. There is no impact on the CDF and LERF calculations with respect to this issue.

4) Element L2-4

“In quantifying the fraction of containment failures that are small vs. large reference is made to the Seabrook PRA and experiments that suggest a “leak before break” characteristic of large reinforced containment structures. Oconee, however, uses a post tensioned containment design. Previous PRAs with post-tensioned designs indicate a much higher likelihood that containment failures will be large, especially from gross failures resulting from overstressing the tendons in the containment. Hence the basis for assigning relatively low probability that a containment failure will be large is questioned.”

Disposition: This issue is related to the Level 2 and Level 3 of the PRA. There is no impact on the CDF and LERF calculations with respect to this issue.

5) Element L2-9

“The containment event tree includes credit for operator actions to depressurize the reactor coolant system (RCS) prior to creep rupture of steam generator (SG) tubes and prior to vessel breach. While such credit is reasonable to take, there are two concerns about the approach used to account for these severe accident management actions: One is that there is no evaluation of dependencies between human errors that are included in Level 1 cutsets feeding into the CET, nor is there application of the HRA methodology to estimate the non recovery probabilities in manner consistent with the Level 1 actions. At the request of the review team, cutsets were provided for Plant Damage States 14 and 15 which involve high pressure core melts with no SG cooling. The dominant cutsets for these cutsets include operator action failures such as failure to align the standby shutdown facility (SSF) during a station blackout. Other cutsets in these plant damage states have no operator actions considered. This shows there are at least open questions about possible dependencies in the HRA.

The second concern is that the time available to perform these actions, especially the one to prevent induced SG tube failure, is highly uncertain due to uncertainties in the time at which operators will begin implementing the Severe Accident Management Guidelines (SAMGs), in part influenced by previous human errors on some of the cutsets, and the times to creep rupture of the hot leg piping, creep rupture of the SG tubes, and time to vessel breach. It should be noted that the timing of accident progression calculated using MAAP or by any other code is not well correlated to what was observed at TMI. The subjective assessments of some events are difficult to defend and potentially optimistic at least for certain cutsets. A related complication is that there are huge dependencies between these probabilities and other CET probabilities that are defined and quantified in the CET. In a risk informed application in which large early release frequency (LERF) issues are raised, this treatment could be called into question and would be difficult to defend.”

Disposition: This issue is related to the Level 2 and Level 3 of the PRA. There is no impact on the CDF and LERF calculations with respect to this issue.

6) Element TH-2

“The basis and use of Thermal Hydraulic Analyses (T/H) are hard to locate in the documentation available. Reports such as the Rev 1 and Rev2 PRA summary report do not provide a reference to

calculations or analyses used to establish the TH bases.”

Disposition: This item is related to improving documentation of inputs to the PRA. No specific technical deficiencies were identified by the peer review team. Therefore, there is no expected impact on this LAR.

7) Element TH-5

“The documentation provides no evidence that independent review of changes to T/H analyses is performed. For example, the Rev 2 Summary report (which has information on sequences and results not present in any calculation) does not have a reviewer signature.”

Disposition: This item is related to improving documentation of inputs to the PRA. Therefore, there is no expected impact on this LAR.

Therefore, in summary, there are no outstanding “A” or “B” F&O’s from the Oconee Peer Review that affect this LAR.

Outstanding PRA Model Issues

The PRA Change Database was reviewed for open items of medium or high risk impact that could potentially affect the LAR risk results. These items and their disposition are summarized in the table below. There are no adverse impacts on this LAR.

Change ID	Description	Impact on this LAR
O-01-0022 (Medium)	The CCW is not able to support LPSW operation using CCW reverse gravity flow if lake level is too low. The purpose of the calc. is to determine this critical lake level. The Oconee PRA models TB floods that flood out the LPSW pumps or pipe breaks that starve the pumps. The Oconee PRA does not model low lake level as a failure mode for LPSW during a TB flood.	No impact on this LAR. Only applies when lake levels are exceptionally low. Does not affect the delta CDF.
O-03-0051 (Medium)	Incorporate the CE Owners Group RCP seal data into the ONS PRA model after it receives NRC acceptance.	Using the CEOG model for Oconee would decrease the importance of the Keowee Hydro Unit. Current risk results are conservative and acceptable.
O-03-0052 (Medium)	Incorporate new fragility for GE model relays for Normal Breaker Overcurrent Protection for the Main Feeder Buses into the seismic PRA if the seismic capacity cannot be improved.	This pertains only to seismic events. Negligible impact on incremental risk for LAR.
O-03-0062 (Medium)	Implement the recommended changes for the Oconee PRA Seismic Analysis.	This pertains only to seismic events. Negligible impact on incremental risk for LAR.
O-03-0063 (Medium)	Implement the additional changes for the Oconee PRA Seismic Analysis.	This pertains only to seismic events. Negligible impact on incremental risk for LAR.

Change ID	Description	Impact on this LAR
O-06-0004 (Medium)	Per the information provided, the response time and execution time need to be updated for an HRA event.	No impact on LAR. Related only to HELB scenarios where HPI power from ASW Swgr is needed. (Human event implies Keowee success)
O-06-0005 (Medium)	The response time and execution time need to be updated for an HRA event.	No impact on LAR. Related only to tornado scenarios where Station ASW is needed. (Human event implies Keowee success)
O-06-0006 (Medium)	Operator action credited in the PRA is no longer valid. Procedure steps no longer exist to accomplish this action.	No impact on LAR. This HELB issue would slightly impact the importance of SSF and Station ASW but not Keowee. Should not increase delta-CDF.

PRA Model Scope

The Oconee Revision 3a PRA is a full scope PRA including both internal and external events (i.e., fires, floods, tornados, etc.). For this application, the seismic CDF was not explicitly calculated. The seismic sequences are not sensitive to the unavailability of a Keowee Hydro Unit. The model includes the necessary initiating events (e.g., LOCAs, transients) to evaluate the frequency of accidents. The Oconee PRA includes models for those systems needed to estimate core damage frequency and large early release frequency. These include all of the major support systems (e.g., ac power, service water, component cooling, and instrument air) as well as the mitigating systems (e.g., emergency core cooling). These systems are generally modeled down to the component level, pumps, valves, and heat exchangers. This level of detail is sufficient for this application.

Discussion of Applicability of Oconee Unit 3 PRA Model to Units 1 and 2

The impact of unit differences at Oconee has been evaluated. The differences between the Oconee units do not significantly change the calculated annual CDF or LERF of each unit at Oconee. Most mechanical and electrical systems of Units 1 and 2 are redundant and diverse from those of Unit 3. Those systems and structures that are shared affect all three units in a similar fashion during a severe accident scenario. Civil structures of Units 1 and 2 are similar to those of Unit 3. External events impact structures and components similarly for each Unit. Therefore, the results and insights of the Oconee Revision 3a PRA are applicable to Units 1 and 2 as well as Unit 3.