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January 12, 2006

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
Response to Request for Additional Information
Pertaining to the License Amendment Request (LAR)
for RPS/ESPS Digital Upgrade
Technical Specification Change (TSC) Number
2004-09, Supplement 5

In a submittal dated February 14, 2005, Duke Energy Corporation (Duke) proposed to amend Appendix A, Technical Specifications, for Renewed Facility Operating Licenses DPR-38, DPR-47 and DPR-55 for Oconee Nuclear Station, Units 1, 2, and 3. The License Amendment Request (LAR) requests Nuclear Regulatory Commission (NRC) to approve the Reactor Protective System (RPS)/Engineered Safeguards Protective System (ESPS) modification and associated Technical Specification (TS) change.

By letter dated October 6, 2005, Duke provided responses to many of the NRC questions in a Request for Additional Information (RAI) dated September 6, 2005. Since many of the responses are tied to design deliverables in the RPS/ESPS modification schedule, Duke committed to provide the remaining responses on or before November 3, 2005, December 1, 2005, and January 12, 2006. Duke provided additional responses on November 3, 2005, and November 30, 2005.

Attachment 1 provides Duke's responses to RAIs 1.K, 1.O, 1.Q, 1.T, 4.B, and 18. Attachment 2 provides an updated list of NRC commitments associated with this LAR.

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If there are any questions regarding this submittal, please
contact Boyd Shingleton at (864) 885-4716.

Very truly yours,

A handwritten signature in cursive script that reads "Bruce Hamilton". The signature is written in black ink and is positioned above the typed name and title.

B. H. Hamilton, Vice President
Oconee Nuclear Site

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cc: Mr. L. N. Olshan, Project Manager
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-14 H25
Washington, D. C. 20555

Dr. W. D. Travers, Regional Administrator
U. S. Nuclear Regulatory Commission - Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

Mr. M. C. Shannon
Senior Resident Inspector
Oconee Nuclear Station

Mr. Henry Porter, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health & Environmental Control
2600 Bull Street
Columbia, SC 29201

B. H. Hamilton, being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Energy Corporation, 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, DPR-55; and that all the 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 12th day of January 2006

Shirley A. Smith
Notary Public

My Commission Expires:

6/12/2013



Attachment 1
Duke Response to Request for Additional Information (RAI)
Oconee Nuclear Station License Amendment Request
for RPS/ESPS Digital Upgrade

RAI 1.K Please provide the following documentation:

The Oconee system and software training plan (BTP-14, Section 3.1.g). Please include User Instruction Manual and an explanation of what training will be provided to control room operators, I&C maintenance personnel and plant engineering, as described in specification item 12.

Duke Response to RAI 1.K

Duke/ Framatome-ANP (FANP) discussed the User Instruction Manual (Maintenance and User Manual) with NRC reviewers during an on-site visit to FANP offices in Alpharetta, Georgia on November 14, 2005 through November 18, 2005. The section manual that was needed at this stage of the review was Volume 4, Vendor Manuals, which was provided to the reviewers prior to the November 18, 2005, exit. This material is for reviewer reference and will not be docketed. Volumes 1, 2 and 3 will be provided for reviewer reference only when the initial approved revision is completed. Copies of Volumes 1, 2 and 3 will be provided as soon as they are available but no later than 3 weeks prior to the beginning of the Factory Acceptance Test (FAT), which is currently scheduled to begin on March 7, 2006.

The October 6, 2005, submittal (Supplement 1), stated that an additional explanation of Duke training would be provided by January 12, 2006. As indicated in that submittal, training for control room operators, I&C maintenance personnel and plant engineering is being developed as part of the modification process.

The Oconee administrative procedure that addresses the digital upgrade process provides guidance on the type of training and the type of personnel requiring training. Oconee personnel will be provided comprehensive formal training on the operation, maintenance, and servicing of the system as installed at Oconee. This training will provide Oconee personnel with an in-depth understanding of all operational features and aspects of the system, including a review of maintenance procedures related to software and hardware. The following formal training classes will be provided to plant personnel:

- Maintenance Procedure Writer Training

Two training sessions will be provided that are designed to satisfy the needs of procedure writers. Session 1 will be a one-day introduction/overview that introduces the Teleperm XS product to the end user. Session 2 will be a five-day course that will build upon the knowledge obtained in Session 1. The course will be based on Maintenance and Engineering course materials and specifically designed to fulfill the needs of procedure writers.

- Users' Overview Training for System Engineers, I&C Technicians and Operators

This training will be an introduction to all operational features and aspects of the system.

- Hardware Maintenance Training for System Engineers and I&C Technicians

This training will be on routine maintenance and troubleshooting techniques and will be divided into sections according to major divisions of the hardware that allow select personnel to attend part or the entire course. Instruction on the operation of all hardware diagnostic programs will be provided. The course will include operation and troubleshooting on the actual system hardware.

- Software Engineering Training

This training will focus on system software modifications including configuration control and testing. The software course will foster a familiarity with off-line procedures of the generation of new programs, operation of peripherals, use of the documentation, use of the console, start-up and shutdown procedures, and the use of off-line de-bugging techniques. This training will also include reviews of code listings for all the major software subsystems.

- Operations training.

FANP will provide the Operations Training Organization Lesson Plans for the RPS and ES systems. These lesson plans will be in the format required by the Operations Training Organization and will be available to Operations in March 2006. Operations will take these lesson plans and develop Operations training materials as required. The formal Operations Training sessions will be completed prior to U1 EOC23.

RAI 1.0 Please provide the following documentation:

The Failure Modes and Effects Analysis (FMEA), including not only significant failure modes but all failure modes (specification item 2.1.cc, 2.3.u, 6.12, and 11.11).

Duke Response to RAI 1.0

Duke provided a copy of the FMEA in electronic format to the NRC Staff via electronic mail on December 15, 2005. Duke requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390.

RAI 1.Q Please provide the following documentation:

The RPS/ESPS System Instrument Setpoint Calculations and Instrument Accuracy Uncertainty Calculations. If the ONS setpoint methodology is derived from ISA 67.4, please state which methodology is used. Has the setpoint methodology been reviewed and approved by NRC? If so, please provide the appropriate reference documents. The intent is to demonstrate: 1) That in accordance with plant specific action item 10 contained in the April 13, 2000, SER on the TXS topical report, that overly conservative setpoints that may occur due to elimination of analog system drift are not retained, as this would increase the possibility that the TXS equipment may be performing outside the vendor specifications, and 2) to show that the approach that is used to develop the proposed limits provides adequate assurance that the plant will operate in accordance with safety analyses, and that operability is ensured in the Technical Specifications.

Duke Response to RAI 1.Q

In the October 6, 2005, RAI Response, Duke committed to provide a summary of the results of the revised calculations when issued. These calculations are currently in final review and are expected to be issued within one week. Duke will provide a summary by January 31, 2006. Duke will add steps to the calibration procedures to ensure that reduced uncertainty does not increase the possibility that the TXS equipment may be performing outside vendor specifications. As previously stated in Duke's October 6, 2005, submittal, Oconee's setpoint methodology has been reviewed and approved by the NRC. The setpoint methodology and the associated NRC approval documents were provided on a compact disk (CD) sent to NRC on June 23, 2005.

RAI 1.T Please provide the following documentation:

The Software Installation Plan (BTP-14, Section 3.1.e).

Duke Response to RAI 1.T

Duke provided a copy of the Software Installation Plan in electronic format via electronic mail on December 20, 2005. Duke requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390.

RAI 4

The submittal identified several differences between the TXS system approved by the NRC and the system proposed for installation at ONS, principally the SVE CPU module and the communications modules. Please provide the following information:

- B. The environmental test data which verified the new equipment qualifications, including temperature, humidity, radiation, seismic, and electromagnetic qualifications.

Duke Response to RAI 4.B

In the November 30, 2005, submittal, Duke committed to provide a qualification summary report addressing Oconee specific equipment such as relays, breakers, transmitters, etc., when issued. Duke provided a copy of this document in electronic format via electronic mail on January 4, 2006. Duke requests that this document be withheld from public disclosure pursuant to 10 CFR 2.390.

RAI 18

Please discuss the response time requirements for the RPS/ESPS functions. What is the expected worst case response time for the TXS systems as it will be installed at Oconee, and how will that response time be tested at ONC (*sic*)? This should include a discussion of the microprocessor cycle times, sampling rates, and testing procedures. In addition, please provide the system response time reports as discussed in specification item 6.14.

Duke Response to RAI 18

The minimum response time requirements listed in specification item 6.14 is the "worst case" response time allowed by the system. FANP is required to provide the System Response Time test reports to Duke for approval and acceptance prior to beginning the SAT. FANP will perform response time testing during the FAT. Duke will provide the system response time reports coincident with the FAT report (expected to be issued by May 4, 2006).

Attachment 2
Updated List of NRC Commitments
(from Duke Letters dated
October 6, 2005, November 3, 2005, November 30, 2005, submittals)

RAI	Commitment	Status									
1.D	The final approved SDQA document is in preparation, review and approval and is expected to be issued by December 1, 2005. Duke will provide the final approved plan when issued. [Note: In the context used "final approved" means Revision 0 to the approved plan.]	Provided Rev. 0 11/30/05									
1.F	The Software Safety Analysis Plan is in preparation, review, and approval and is expected to be issued by October 31, 2005. Duke will provide a copy of the plan when issued.	Provided 11/2/05									
1.H	<p>These documents are in preparation, review, and approval and are expected to be issued by the dates indicated below:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">iv. Implementation Specification</td> <td style="width: 20%;"></td> <td style="width: 40%;">January 28, 2006</td> </tr> <tr> <td>v. Integration Plan</td> <td></td> <td>November 30, 2005</td> </tr> <tr> <td>vi. Test Plan</td> <td></td> <td>November 30, 2005</td> </tr> </table> <p>Duke will provide these documents when they are issued.</p>	iv. Implementation Specification		January 28, 2006	v. Integration Plan		November 30, 2005	vi. Test Plan		November 30, 2005	<p>Integration and Test Plans provided 11/30/05</p> <p>In progress</p>
iv. Implementation Specification		January 28, 2006									
v. Integration Plan		November 30, 2005									
vi. Test Plan		November 30, 2005									
1.I	<p>Software Design Reviews and Source Code Reviews are performed in later Software Life-cycle phases and are expected to be issued by October 31, 2005, and December 16, 2005, respectively. Duke will provide these documents when they are issued. The Verification and Validation Report is being provided in phases and are in preparation, review, and approval and are expected to be issued by:</p> <p>1) design phase - November 15, 2005 2) implementation - January 30, 2006 3) testing phase – May 4, 2006</p> <p>Duke will provide these reports when they are issued.</p>	<p>Design phase V&V report provided 11/30/05</p> <p>In progress</p>									
1.J	<p>The FAT Plan, FAT Procedure, and FAT Report are expected to be issued by the dates indicated below:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">FAT Plan</td> <td style="width: 20%;"></td> <td style="width: 40%;">November 30, 2005</td> </tr> <tr> <td>FAT Procedure</td> <td></td> <td>February 28, 2006</td> </tr> <tr> <td>FAT Report</td> <td></td> <td>May 4, 2006</td> </tr> </table> <p>Duke will provide the FAT Plan, Procedure, and Report when issued.</p>	FAT Plan		November 30, 2005	FAT Procedure		February 28, 2006	FAT Report		May 4, 2006	<p>FAT Plan provided 11/30/05</p> <p>In progress</p>
FAT Plan		November 30, 2005									
FAT Procedure		February 28, 2006									
FAT Report		May 4, 2006									

**Updated List of NRC Commitments
 (from Duke Letters dated
 October 6, 2005, November 3, 2005, November 30, 2005, submittals)**

RAI	Commitment	Status
1.J	<p>The Site Acceptance Test (SAT) Plan, SAT Procedure, and SAT Report are expected to be issued by the dates indicated below:</p> <p>SAT Plan February 28, 2006 SAT Procedure March 28, 2006 SAT Report June 30, 2006</p> <p>Duke will provide the SAT Plan, Procedure, and Report when they are issued.</p>	In progress
1.K	<p>The Oconee User Instruction Manual is in preparation, review, and approval and is expected to be issued by December 15, 2005. Duke will provide this document when it is issued.</p>	Provided 11/18/05
1.K	<p>Copies of Volumes 1, 2 and 3 (Users Instruction Manual) will be provided as soon as they are available but no later than 3 weeks prior to the beginning of the Factory Acceptance Test (FAT), which is currently scheduled to begin on March 7, 2006.</p>	In progress
1.K	<p>Duke will submit an explanation of what training has been provided by FANP to Duke by November 3, 2005.</p>	Provided 11/3/05
1.K	<p>Training for control room operators, I&C maintenance personnel and plant engineering is being developed as part of the modification process. Duke will provide additional explanation of this training by January 12, 2006.</p>	Provided 1/12/06
1.L	<p>The requirements matrix is a living document, and is updated at the end of each V&V phase. Duke expects to issue the next updates by February 14, 2006, and May 4, 2006. Duke will provide these updates when they are issued.</p>	In progress
1.O	<p>The FMEA is in preparation, review, and approval and is expected to be issued by December 15, 2005. Duke will provide a copy of the FMEA when it is issued.</p>	Provided 12/15/05

**Updated List of NRC Commitments
 (from Duke Letters dated
 October 6, 2005, November 3, 2005, November 30, 2005, submittals)**

RAI	Commitment	Status
1.Q	These calculations (Setpoint) require revision as a result of the RPS/ESPS digital modification. The revised calculations will address any margin gains or losses. The required revisions are in preparation, review, and approval and are expected to be issued by December 31, 2005. Duke will provide a summary of the results of the revised calculations when issued. As of January 12, 2006, these calculations are currently in final review and are expected to be issued within one week. Duke will provide a summary by January 31, 2006.	In progress
1.R	Additional information related to the qualification of the SIVAT simulation tool is in preparation and will be submitted as a revision to this RAI response by December 1, 2005.	Provided 11/3/05
1.T	The Software Installation Plan is in preparation, review, and approval and is expected to be issued by December 31, 2005.	Provided 12/20/05
1.U	The Software Safety Plan is in preparation, review, and approval and is expected to be issued by November 30, 2005.	Provided 11/2/05
1.V	Duke will provide a date when Software Operations Plan can be provided by November 3, 2005.	Provided 11/3/05
4.A & 4.C	The response to RAI 4.A and 4.C will be included in Duke's response to RAI 30. The response to RAI 4.B is in preparation and will be submitted by November 3, 2005.	Provided 11/3/05
4.B	Test Report # 968/K 110.00/02 is currently being translated from German to English. Duke will provide this document to the NRC staff when it is available.	Provided 11/30/05
4.B	A qualification summary report addressing Oconee specific equipment such as relays, breakers, transmitters, etc., is in preparation, review and approval and is expected to be issued by December 22, 2005. Duke will provide this document when it is issued.	Provided 1/4/06
6	Duke will respond to the question related to channel independence in our response to RAI-27. [Note – this question was addressed in response to RAI 6.]	Provided 11/3/05
6	Duke's response to the question related to communications and data exchange is in preparation and will be submitted by November 3, 2005.	Provided 11/3/05
7c	Duke will submit more information regarding the hardware solution by November 3, 2005.	Provided 11/3/05

**Updated List of NRC Commitments
 (from Duke Letters dated
 October 6, 2005, November 3, 2005, November 30, 2005, submittals)**

RAI	Commitment	Status
10	Duke provided a preliminary response to this question on June 30, 2005. After discussions with the staff on August 17, 2005, Duke agreed to revise this response. The response to this RAI is in preparation and will be submitted by November 3, 2005.	Provided 11/3/05
15	The response to this RAI is in preparation and will be submitted by December 1, 2005.	Provided 11/3/05
18	The response to this RAI is in preparation and will be submitted by January 12, 2006. Duke will provide the system response time reports to NRC (expected to be submitted by May 4, 2006).	Provided 1/12/06
18	FANP will perform response time testing during the FAT. Duke will provide the system response time reports coincident with the FAT report (expected to be issued May 4, 2006)	In progress
21,22	Duke discussed the preliminary response provided to the draft RAI in the August 17, 2005, Duke/NRC RAI meeting and agreed to revise this response. This response is in preparation and will be submitted by November 3, 2005.	Provided 11/3/05
27	The response to this RAI is in preparation and will be submitted by December 1, 2005.	Provided 12/1/05
29	The response to this RAI is in preparation and will be submitted by December 1, 2005.	Provided 11/3/05
30	The response to this RAI is in preparation and will be submitted by December 1, 2005.	Provided 11/3/05
31	The response to this RAI is in preparation and will be submitted by December 1, 2005.	Provided 11/3/05