

June 1, 2006

Mr. Bruce H. Hamilton
Vice President, Oconee Site
Duke Energy Corporation
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, ISSUANCE OF
AMENDMENTS REGARDING POST-ACCIDENT MONITORING (TAC NOS.
MC4179, MC4180, AND MC4181)

Dear Mr. Hamilton:

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 350, 352, and 351 to Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55, respectively, for the Oconee Nuclear Station, Units 1, 2, and 3. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated August 20, 2004, supplemented January 31, 2006.

These amendments revise TS 3.3.8, "Post Accident Monitoring (PAM) Instrumentation," to eliminate TS requirements associated with the reactor building spray flow instruments commensurate with the importance of their revised post-accident function.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Leonard N. Olshan, Sr. Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosures:

1. Amendment No. 350 to DPR-38
2. Amendment No. 352 to DPR-47
3. Amendment No. 351 to DPR-55
4. Safety Evaluation

cc w/encls: See next page

June 1, 2006

Mr. Ronald A. Jones
Vice President, Oconee Site
Duke Energy Corporation
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3 - ISSUANCE OF AMENDMENTS REGARDING POST-ACCIDENT MONITORING (TAC NOS. MC4179, MC4180, AND MC4181)

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 350, 352, and 351 to Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55, respectively, for the Oconee Nuclear Station, Units 1, 2, and 3. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated August 20, 2004, supplemented January 31, 2006.

These amendments revise TS 3.3.8, "Post Accident Monitoring (PAM) Instrumentation," to eliminate TS requirements associated with the reactor building spray flow instruments commensurate with the importance of their revised post-accident function.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Leonard N. Olshan, Sr. Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosures:

1. Amendment No. 350 to DPR-38
2. Amendment No. 352 to DPR-47
3. Amendment No. 351 to DPR-55
4. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

Public	RidsAcrsAcnwMailCenter	JBurns
LPL2-1 r/f	GHill(6 hard copies), OIS	BMarcus
RidsNrrDorLplc(EMarinos)	RidsNrrDirsltsb	JNakoski
RidsNrrPMLOlshan(hard copy)	RidsRgn2MailCenter(MErnstes)	AHowe
RidsNrrLAMO'Brien(hard copy)	RidsNrrDorIDpr	
RidsOgcRp		

Package No. ML060820560

Tech Spec No. ML061520234

License Amendment No. ML060820547

*Memos dated

NRR-058

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/SPWB/BC	NRR/EICB/BD	OGC	NRR/LPL2-1/BC
NAME	LOlshan	MO'Brien	JNakoski	AHowe	MLeMoncelli	EMarinos
DATE	3/31/06	3/31/06	2/13/06*	9/02/05*	4/21/06	4/24/06

OFFICIAL RECORD COPY

DUKE ENERGY CORPORATION

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 350
Renewed License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Renewed Facility Operating License No. DPR-38 filed by the Duke Energy Corporation (the licensee) dated August 20, 2004, supplemented January 31, 2006, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B of Renewed Facility Operating License No. DPR-38 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 350, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Evangelos C. Marinos, Branch Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. DPR-38
and the Technical Specifications

Date of Issuance: June 1, 2006

DUKE ENERGY CORPORATION

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 352
Renewed License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 2 (the facility) Renewed Facility Operating License No. DPR-47 filed by the Duke Energy Corporation (the licensee) dated August 20, 2004, supplemented January 31, 2006, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B of Renewed Facility Operating License No. DPR-47 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 352, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Evangelos C. Marinos, Branch Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. DPR-47
and the Technical Specifications

Date of Issuance: June 1, 2006

DUKE ENERGY CORPORATION

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 351
Renewed License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 3 (the facility) Renewed Facility Operating License No. DPR-55 filed by the Duke Energy Corporation (the licensee) dated August 20, 2004, supplemented January 31, 2006, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B of Renewed Facility Operating License No. DPR-55 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 351, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. DPR-55
and the Technical Specifications

Date of Issuance: June 1, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 350
RENEWED FACILITY OPERATING LICENSE NO. DPR-38
DOCKET NO. 50-269
AND
TO LICENSE AMENDMENT NO. 352
RENEWED FACILITY OPERATING LICENSE NO. DPR-47
DOCKET NO. 50-270
AND
TO LICENSE AMENDMENT NO. 351
RENEWED FACILITY OPERATING LICENSE NO. DPR-55
DOCKET NO. 50-287

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License Pages

License No. DPR 38, Page 3
License No. DPR 47, Page 3
License No. DPR 55, Page 3

TSs

3.3.8-1
3.3.8-2
3.3.8-3
3.3.8-5
B 3.3.8-12 through -20
B 3.5.3-4
B 3.6.5-4

Insert

License Pages

License No. DPR 38, Page 3
License No. DPR 47, Page 3
License No. DPR 55, Page 3

TSs

3.3.8-1
3.3.8-2
3.3.8-3
3.3.8-5
B 3.3.8-12 through -19
B 3.5.3-4
B 3.6.5-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO
AMENDMENT NO. 350 TO RENEWED FACILITY OPERATING LICENSE DPR-38
AMENDMENT NO. 352 TO RENEWED FACILITY OPERATING LICENSE DPR-47
AND AMENDMENT NO. 351 TO RENEWED FACILITY OPERATING LICENSE DPR-55
DUKE ENERGY CORPORATION
OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3
DOCKET NOS. 50-269, 50-270, AND 50-287

1.0 INTRODUCTION

By letter dated August 20, 2004 (Reference 1), as supplemented January 31, 2006 (Reference 2), Duke Energy Corporation (the licensee) submitted a request for changes to the Oconee Nuclear Station, Units 1, 2, and 3 (Oconee 1, 2, 3), Technical Specifications (TSs). The requested changes would revise TS 3.3.8, "Post Accident Monitoring (PAM) Instrumentation," to eliminate TS requirements associated with the reactor building spray (RBS) flow instruments commensurate with the importance of their revised post-accident function. The supplement dated January 31, 2006, provided clarifying information that did not change the scope of the August 20, 2004, application or the initial proposed no significant hazards consideration determination.

The RBS system provides a spray of relatively cold borated water into the upper region of the containment to reduce containment pressure and temperature, and to reduce the concentration of fission products in the containment atmosphere during an accident. The RBS flow instrumentation is provided to support the actions needed for long-term cooling.

The proposed changes would revise TSs concerning the RBS system. Specifically, the licensee requested a modification to TS 3.3.8 that would eliminate the need to manually throttle the RBS flow rate within 15 minutes of accident mitigation during the injection phase of post-accident operation and would eliminate the requirement to manually throttle RBS flow rate prior to transferring suction to the reactor building emergency sump (RBES). The justification for this TS change is based on the fact that the licensee has recently modified the RBS system on all three Oconee units to improve post-accident RBS operation. With this RBS system change, the RBS flow instrument is only needed to monitor operation of the RBS system and is no longer needed to ensure RBS system operation.

The RBS system was modified as follows: (1) the existing flow metering orifice in each RBS header was replaced with a combination pressure break down and flow metering orifice; and (2)

half of the active RBS system spray nozzles were plugged to assist in reducing the RBS System header flow rates. The licensee made these RBS system modifications pursuant to and under the guidance of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 (10 CFR 50.59).

2.0 REGULATORY EVALUATION

The primary purpose of accident monitoring instrumentation is to display plant variables that provide information required by the control room operator during accident situations. This information provides the necessary support for the operator to take manual actions to initiate safety systems and other appropriate systems important to safety.

Regulatory Guide (RG) 1.97 describes a method acceptable to the Nuclear Regulatory Commission (NRC) staff for complying with the Commission's regulations to provide instrumentation for monitoring plant variables and systems during and after an accident. RG 1.97 recommends that Type A instrumentation be provided for variables that provide primary information needed by the control room operating personnel to take specified manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design-basis events.

Type A instrumentation meets the criteria of 10 CFR 50.36(c)(2)(ii)(C), Criterion 3, that requires TSs to include limiting conditions for operation for a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

RG 1.97 Type D variables are those variables that provide information to indicate the operation of individual safety systems and other systems important to safety. For Type D variables, RG 1.97 states that a key variable for system operating status is that single variable (or minimum set of variables) that most directly indicates the operation of a safety system. RG 1.97 recommends that type D key variables be monitored by instrumentation that meets the RG 1.97 Category 2 criteria.

Section 50.59, "Changes, tests, and experiments," has specific requirements regarding when a licensee may make changes in the facility described in the Updated Final Safety Analysis Report (UFSAR).

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's technical analyses in support of its proposed license amendment, as described in Attachment 3 of the licensee's August 20, 2004, submittal. The RBS system was modified properly by the licensee after the licensee performed a 10 CFR 50.59 analysis. The RBS system modification resulted in modified RBS system flow rates. The new, reduced RBS system flow rates were used as input for the applicable safety analyses and no adverse effects due to the RBS system modification were discovered.

Specifically, in the licensee's analysis supporting the change pursuant to 10 CFR 50.59, a calculation was performed for the long-term cooling requirements following a large break loss-of-coolant accident (LBLOCA). This calculation demonstrated that the results of the LBLOCA

analyses with the reduced RBS system flow rates meet the long-term cooling criteria as set forth in Section 15.14.2.5 of the UFSAR for Oconee 1, 2, 3.

In general, to perform this calculation the CONTEMPT code (Reference 3) calculates the reactor building pressure response with the modified RBS system flow rates used as inputs. The output of the CONTEMPT code is then used as an input to the BEACH code (Reference 4) along with an input from the REFLOD3B code (Reference 5). The REFLOD3B code determines the length of the refill period following the LBLOCA and the flooding rates during reflood. With these two inputs, the BEACH code then determines the fuel thermal response, the fuel mechanical response and the fuel's peak cladding temperature (PCT).

As a result of the RBS system modification, the RBS and the emergency core cooling system (ECCS) low-pressure injection (LPI) pumps are no longer susceptible to pump runout. Specifically, a calculation in support of the change pursuant to 10 CFR 50.59 demonstrated that the RBS system flow rates resulting from the RBS system modifications are not outside the bounds of the existing LPI net positive suction head (NPSH) analyses.

Therefore, RBS flow no longer needs to be classified as a RG 1.97 Type A variable. RBS flow only provides information about the operation of the RBS system and can be classified as a RG 1.97 Type D variable that meets the RG 1.97 Category 2 criteria. Therefore, RBS flow no longer falls under the criteria of 10 CFR 50.36(c)(2)(ii)(C) and the removal of RBS flow from TS 3.3.8 is acceptable.

Currently TS 3.3.8 requires one RBS flow instrument channel per train to be operable when in Modes 1, 2, or 3. With the required channel inoperable, Action F requires the affected RBS train to be declared inoperable immediately. The proposed TS change would remove the RBS flow function from Table 3.3.8-1 thereby eliminating the TS requirements for the RBS flow instrument channels. Conditions A, C, and F would also be modified to remove reference to Function 20, "Reactor Building Spray Flow." The TS Bases would also be modified appropriately to reflect the change. The Bases changes would be made under the requirements of 10 CFR 50.59 and TS 5.5.15, "Bases Control Program."

To remove RBS flow from TS 3.3.8, the licensee proposed the following changes to TS 3.3.8:

- (1) In TS Table 3.3.8-1, Function 20, replace the function title "Reactor Building Spray Flow" with "Not Used" and delete "1 per train" as the Required Channels and "NA" as the Conditions Referenced From Requiring Action G.1.
- (2) Remove Function "20" from TS Conditions A, C, and F.

Because RBS flow no longer needs to be classified as a Type A variable, it no longer needs to be included in TS 3.3.8. Therefore, the deletions of "Reactor Building Spray Flow," "1 per train," and "NA" from TS Table 3.3.8-1, Function 20, and the removal of Function "20" from TS 3.3.8 Conditions A, C, and F are acceptable. The use of "Not Used" for the title of Function 20 preserves the numbering of other functions in TS Table 3.3.8-1, and is, therefore, acceptable.

Based on the review of the submittal for the Oconee 1, 2, 3 license amendment request, the NRC staff finds the proposed TS changes on the removal of RBS flow from TS 3.3.8 in conformance with 10 CFR 50.36(c)(2)(ii)(C) and the recommendations of RG 1.97. Therefore, the above TS changes are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (69 FR 57983). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Letter from R. A. Jones, Duke Energy Corporation, to U.S. Nuclear Regulatory Commission, "License Amendment Request to revise RBS flow Technical Specifications based on recent Reactor Building Spray System Modifications Technical Specification Change (TSC) Number 2004-1," Docket Nos. 50-269, 50-270, and 50-287, dated August 20, 2004, ADAMS Accession No. ML0424506333.
2. Letter from B. H. Hamilton, Duke Energy Corporation, "Response to Request for Additional Information Pertaining to License Amendment Request to relocate RBS flow instrument from Technical Specifications Change (TSC) Number 2004-01, Supplement 1, Docket Nos. 50-269, 50-270, and 50-287, dated January 31, 2006, ADAMS Accession No. ML060390355.
3. Hsii, Y. H., Babcock & Wilcox Revisions to - CONTEMPT - Computer Program for Predicting Containment Pressure - Temperature Response to a Loss-of-Coolant Accident, Babcock & Wilcox, *BAW-10095A Rev. 1*, April 1978.
4. N. H. Shah, et al., BEACH - A Computer Program for Reflood Heat Transfer During LOCA, *BAW-10-166P-A*, Rev. 4, February 1996.
5. REFLOD3B - Model for Multinode Core Reflooding Analysis, *BAW-10171P-A Rev. 3*, December 1995.

Principal Contributors: J. Burns
B. Marcus

Date: June 1, 2006

Oconee Nuclear Station, Units 1, 2, and 3

cc:

Ms. Lisa F. Vaughn
Duke Energy Corporation
526 South Church Street
P. O. Box 1006
Mail Code EC07H
Charlotte, North Carolina 28201-1006

Manager, LIS
NUS Corporation
2650 McCormick Dr., 3rd Floor
Clearwater, FL 34619-1035

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
7812B Rochester Highway
Seneca, SC 29672

Mr. Henry Porter, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Dept. of Health and Env. Control
2600 Bull St.
Columbia, SC 29201-1708

Mr. Michael A. Schoppman
Framatome ANP
1911 North Ft. Myer Dr.
Suite 705
Rosslyn, VA 22209

Mr. B. G. Davenport
Regulatory Compliance Manager
Oconee Nuclear Site
Duke Energy Corporation
ON03RC
7800 Rochester Highway
Seneca, SC 29672

Ms. Karen E. Long
Assistant Attorney General
NC Department of Justice
P.O. Box 629
Raleigh, NC 27602

Mr. R. L. Gill, Jr.
Manager - Nuclear Regulatory
Issues and Industry Affairs
Duke Energy Corporation
526 S. Church St.
Mail Stop EC05P
Charlotte, NC 28202

Division of Radiation Protection
NC Dept of Environment, Health, & Natural
Resources
3825 Barrett Dr.
Raleigh, NC 27609-7721

Mr. Peter R. Harden, IV
VP-Customer Relations and Sales
Westinghouse Electric Company
6000 Fairview Road
12th Floor
Charlotte, NC 28210

Mr. Henry Barron
Group Vice President, Nuclear Generation
and Chief Nuclear Officer
P.O. Box 1006-EC07H
Charlotte, NC 28201-1006