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February 10, 2000

U. S. Nuclear Regulatory Commission  
Washington D. C. 20555-0001

ATTENTION: Document Control Desk

Subject: Oconee Nuclear Station  
Docket Numbers 50-269, 50-270, and 50-287  
Topical Report DPC-NE-2003, Revision 1, Core  
Thermal-Hydraulic Methodology Using VIPRE-01

- References:
- 1) Letter from Leonard A. Wiens to H. B. Tucker, Safety Evaluation Report on DPC-NE-2003, "Core Thermal-Hydraulic Methodology Using VIPRE-01" (TACS 69377/69378/69379), July 19, 1989.
  - 2) Letter from David E. LaBarge to W. R. McCollum, Jr., Safety Evaluation Report for Revision 1 to Topical Report DPC-NE-3005, "UFSAR Chapter 15 Transient Analysis Methodology" (TAC NOS. MA4713, MA4714, and MA4715), May 25, 1999.
  - 3) Letter from David E. LaBarge to W. R. McCollum, Jr., Safety Evaluation Report for Appendix D of Topical Report DPC-NE-2005, "Thermal-Hydraulic Statistical Core Design Methodology" (TAC NOS. M98660, M98661, and M98662), June 8, 1999.

This submittal package contains information that Duke Energy Corporation considers proprietary. This information is contained within the proprietary version of Topical Report DPC-NE-2003 (designated DPC-NE-2003P) and is provided as Attachment C to this letter. In accordance with 10CFR2.790, Duke requests that this information be withheld from public disclosure. An affidavit that attests to the proprietary nature of this information is included with this letter.

AP01 1/1

Change: NRC PDR 1tr encl. 1 w/o prop

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Duke Energy Corporation received approval of Revision 0 of Topical Report DPC-NE-2003, *Core Thermal-Hydraulic Methodology Using VIPRE-01*, in Reference 1. Since that time, Duke has submitted and received approval for changes to the methodology outlined in Reference 1. These changes have been reviewed and approved by the NRC as documented in Reference 2 (DPC-NE-3005) and Reference 3 (DPC-NE-2005). In order to incorporate these approved changes and update DPC-NE-2003 relative to the subsequently approved documents, Duke is submitting the attached Revision 1 of Topical Report DPC-NE-2003 for NRC review and approval. All changes between Revision 0 and Revision 1 of DPC-NE-2003 have been previously approved by the NRC. No unreviewed technical changes are included in Revision 1.

The contents of this submittal package are:

Attachment A, "Summary of DPC-NE-2003, Revision 1 Changes," provides a summary listing of the changes from Revision 0 to Revision 1 of DPC-NE-2003.

Attachment B provides Topical Report DPC-NE-2003, *Core Thermal-Hydraulics Methodology Using VIPRE-01*, Revision 1. This includes the entire non-proprietary version of the topical report with the changes proposed in Revision 1.

Attachment C provides Topical Report DPC-NE-2003P, *Core Thermal-Hydraulics Methodology Using VIPRE-01*, Revision 1. This includes the entire proprietary version of the topical report with the changes proposed in Revision 1.

Incorporation of Revision 1 to DPC-NE-2003 into the reload process will require a change to the list of references in Section 5.6.5 of the Oconee Technical Specifications. Duke Energy Corporation hereby makes the commitment to submit the necessary change to the Oconee Technical Specifications. Following NRC approval of DPC-NE-2003, Revision 1, the necessary change to Oconee Technical Specification 5.6.5 will be submitted pursuant to 10CFR50.90.

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Duke Energy Corporation requests NRC review and approval of DPC-NE-2003, Revision 1 by September 30, 2000. This approval date is needed because this document is applicable to design activities that support the Oconee 1 Cycle 20 reload. If there are any questions or if additional information is needed on this matter, please call J. S. Warren at (704) 382-4986.

Very truly yours,



M. S. Tuckman

Attachments

xc w/All Attachments:

D. E. Labarge, NRC Senior Project Manager (ONS)  
U. S. Nuclear Regulatory Commission  
Mail Stop O-8 H12  
Washington, DC 20555-0001

xc w/Attachments A and B:

L. A. Reyes, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
Atlanta Federal Center  
61 Forsyth St., SW, Suite 23T85  
Atlanta, GA 30303

M. C. Shannon  
NRC Resident Inspector (ONS)

AFFIDAVIT

1. I am Executive Vice President of Duke Energy Corporation; and as such have the responsibility for reviewing information sought to be withheld from public disclosure in connection with nuclear power plant licensing; and am authorized on the part of said Corporation (Duke) to apply for this withholding.
2. I am making this affidavit in conformance with the provisions of 10CFR 2.790 of the regulations of the Nuclear Regulatory Commission (NRC) and in conjunction with Duke's application for withholding, which accompanies this affidavit.
3. I have knowledge of the criteria used by Duke in designating information as proprietary or confidential.
4. Pursuant to the provisions of paragraph (b) (4) of 10CFR 2.790, the following is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.
  - (i) The information sought to be withheld from public disclosure is owned by Duke and has been held in confidence by Duke and its consultants.
  - (ii) The information is of a type that would customarily be held in confidence by Duke. The information consists of analysis methodology details, analysis results, supporting data, and aspects of development programs relative to a method of analysis that provides a competitive advantage to Duke.



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M. S. Tuckman

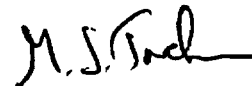
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- (iii) The information was transmitted to the NRC in confidence and under the provisions of 10CFR 2.790, it is to be received in confidence by the NRC.
- (iv) The information sought to be protected is not available in public to the best of our knowledge and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is marked in the proprietary version of Topical Report DPC-NE-2003, Revision 1, *Core Thermal-Hydraulic Methodology Using VIPRE-01*. This information enables Duke to:
  - (a) Respond to NRC requests for additional information regarding transient response of Babcock & Wilcox PWRs.
  - (b) Simulate UFSAR Chapter 15 transients and accidents for Oconee Nuclear Station.
  - (c) Perform safety evaluations per 10CFR50.59.
  - (d) Support Facility Operating Licenses/Technical Specifications amendments for Oconee Nuclear Station.

  
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M. S. Tuckman

(Continued)

- (vi) The proprietary information sought to be withheld from public disclosure has substantial commercial value to Duke.
  - (a) It allows Duke to reduce vendor and consultant expenses associated with supporting the operation and licensing of nuclear power plants.
  - (b) Duke intends to sell the information to nuclear utilities, vendors, and consultants for the purpose of supporting the operation and licensing of nuclear power plants.
  - (c) The subject information could only be duplicated by competitors at similar expense to that incurred by Duke.
  
- 5. Public disclosure of this information is likely to cause harm to Duke because it would allow competitors in the nuclear industry to benefit from the results of a significant development program without requiring commensurate expense or allowing Duke to recoup a portion of its expenditures or benefit from the sale of the information.



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M. S. Tuckman

(Continued)

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M. S. Tuckman, being duly sworn, states that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth within are true and correct to the best of his knowledge.

M. S. Tuckman

M. S. Tuckman, Executive Vice President

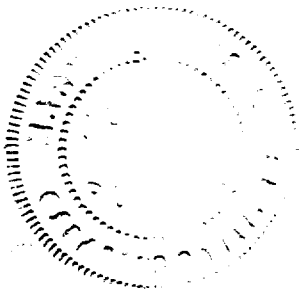
Subscribed and sworn to before me this 14<sup>TH</sup> day of

February, 2000

Mary P. Nelson  
Notary Public

My Commission Expires:

JAN 22, 2001



SEAL

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bxc:

w/Attachments:

R. M. Gribble  
C. L. Naugle  
R. R. St. Clair  
J. S. Warren

w/o Attachments:

C. J. Thomas  
K. S. Canady  
L. E. Nicholson  
J. E. Smith  
ELL



## Attachment A

### Summary of DPC-NE-2003, Revision 1 Changes

The DPC-NE-2003P-A topical was updated to reflect subsequent approved methods changes. These changes are denoted with a bar and a 1 in the right hand margin. There are no unreviewed technical changes included in Revision 1. Revisions with a bar and a 0 in the right hand margin were included in the original approved report, dated July 1989. The following lists the changes made as part of this update:

1. A detailed discussion is added to the topical to summarize updates to DPC-NE-2003P-A
  - a) Steady-state core thermal-hydraulic analyses are still performed as discussed in Section 6, but using Statistical Core Design (SCD) methodology. Design and model uncertainties are statistically combined using SCD methodology developed and approved as documented in DPC-NE-2005P-A. For non-SCD core thermal-hydraulic analyses, uncertainties are still applied directly as discussed in Revision 0 of this report.
  - b) Mark-B11 fuel assembly design and its VIPRE-01 inputs required to model the Mark-B11 design have been reviewed and approved in Appendix D of DPC-NE-2005P-A, Revision 2.
2. In Section 5.9, the axial power shape was changed from [1.65] to [1.50] to be consistent with the current value used in the MAP methodology. This is discussed in the letter dated June 19, 1989 from H. B. Tucker (Duke Power Company) to the USNRC, enclosed in Appendix B of this topical.
3. Section 5.11, Hot Channel Factor, was updated to clarify the hot channel factors ( $F_q$  and  $F_q''$ ) used in Non-SCD and SCD analyses, their values, and the basis for their use. This includes the following:

Section 5.11 was updated to specify the current value of the power factor,  $F_q$ , of [1.0132] and the local heat flux factor,  $F_q''$ , for Mark-BZ fuel is

## Attachment A

[1.044] used for Non-SCD analyses. Also, Section 5.11 was updated to add references WCAP-8202 and CENPD-207. These references state that local heat flux spikes have no effect on the critical heat flux results. Therefore, the local heat flux factor,  $F_q$ , is used only to account for the axial nuclear uncertainty. This was submitted as part of DPC-NE-2005P-A, Revision 2.

4. In Sections 6.4.1 and Section 6.5, "two pump coastdown" was replaced by "limiting DNB transient" on pages 24 and 27, respectively, per DPC-NE-3005P-A. This change was made when "two pump coastdown" was referred to in a generic sense or directly referenced Section 6.6. Section 6.6 was rewritten to discuss the limiting DNB transient, which is the basis for the Operational Maximum Allowable Peaking (MAP) limits. The reviewed and approved topical report, DPC-NE-3005P-A, provides a detailed discussion of the limiting DNB transient.
5. Section 7.0 was updated to add the following references:
  - WCAP-8202
  - CENPD-207
  - DPC-NE-2005P-A, Rev. 2,
  - DPC-NE-3005P-A, Rev. 1
  - EPRI NP-1850-CCM, Rev. 2