Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

April 19, 1991
LIC-91-0126R

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Gentlemen:

SUBJECT: **Revised Core Reload Methodology Topical Reports for Cycle 14**

References:
1. Docket No. 50-285
2. Letter from W. C. Walker (NRC) to W. G. Gates (OPPD), "Summary of Meeting to Discuss Changes to Core Reload Methodologies", dated March 19, 1991
3. OPPD-NA-8301-P, "Reload Core Analysis Methodology Overview", Rev. 04, dated April 1991 (Enclosure)
4. OPPD-NA-8303-P, "Reload Core Analysis Methodology, Transient and Accident Methods and Verification", Rev. 03, dated April 1991 (Enclosure)
5. NRC Generic Letter 88-16, dated October 4, 1988
6. CE-NPD-282-P "Technical Manual for the CENTS Code", Volumes 1 and 2, dated February 1991 (Enclosure)
7. Westinghouse Document, "Report on the Analysis Methods and Evaluation Models to be Employed in the Large Break and Small Break LOCA Analysis for Fort Calhoun Unit 1", dated February 1991 (Enclosure)
8. Westinghouse Document, "Control Element Assembly Ejection Accident Methodology Summary Report for Fort Calhoun Unit 1", dated April 1991 (Enclosure)
9. "Westinghouse Reload Fuel Mechanical Design Evaluation for the Fort Calhoun Station Unit 1", dated March 1991 (Enclosure)

The Omaha Public Power District (OPPD) is currently performing the Cycle 14 core reload safety analysis for Fort Calhoun Station Unit No. 1. Changes to the enclosed reload methodology topical reports (References 3 and 4) are required to reflect the changes discussed in the March 11, 1991 meeting between the NRC and OPPD (Reference 2).

Add: NRR/Chatterton Ltr Encl 1 1 w/Prop
Change: NRC for Ltr Encl 1 w/out Prop

A001
1/4NP Sets
12 Prop Sets
~~23 Prop Topicals~~
23 Prop Topicals Vol 1&2

Reference 3 has been revised to reflect Westinghouse (W) as the nuclear fuel supplier. The thermal hydraulic section has been updated for a mixed core which will contain Westinghouse (W) and Combustion Engineering (CE) fuel assemblies. Advanced Nuclear Fuel (ANF) assemblies will not be co-resident with the W fuel assemblies. Reference 9 is the fuel mechanical design report prepared by W. A new section has been added to Reference 3 to indicate the use of a core operating limits report (in accordance with Reference 5) and lists the items that will be included in the report.

Reference 4 was revised to show W as the analyst for the large and small break Loss of Coolant Accident (LOCA) evaluations and the Control Element Assembly (CEA) ejection analysis. Summary descriptions (in advance of OPPD's transmittal to the NRC of LOCA topical reports) of the analysis methodology to be applied is contained in the enclosed References 7 and 8. The excess load and boron dilution events have been reclassified to obtain operating margin in the DNB LSSS and to ensure a conservative operating temperature range, respectively. The excess load event analysis method was changed from calculating a bias term to calculating a required overpower margin. The change in the boron dilution event adds a term to correct for density changes in a volume for a range of temperatures. The changes are consistent with CE methodology options previously approved by the NRC for application in the reload methodology calculations. These changes have been determined to be conservative with respect to existing methods.

Reference 4 also contains changes which implement the more efficient Combustion Engineering Nuclear Transient Simulation (CENTS) code. OPPD previously utilized the Combustion Engineering System Excursion Code (CESEC) to perform transient thermal hydraulic calculations. The CENTS code is described in CE proprietary topical reports (Reference 6) enclosed with the methodology revisions.

CENTS is a nodal code which is computationly more efficient than the conventional fixed node arrangement in the CESEC code. This allows a more accurate representation of the Fort Calhoun Station mechanical, electrical and control systems. The increased fidelity of the model allows an accurate and timely evaluation of potential operational safety concerns.

Past experience has shown CESEC to be unable to provide the required level of detail for resolving operational concerns arising during fuel cycle operations. This has often required an overly conservative initial position to be taken on potential safety concerns, only to be revised due to alternate evaluation methods. The use of CENTS offers the potential for providing a more timely resolution of safety concerns due to the ability to be executed on OPPD workstation computers. The code can be run more often as compared to CESEC, which provides increased information on the sensitivity and magnitude of operational and safety issues.

The remaining changes are editorial in nature. Revisions in References 3 and 4 are denoted by a vertical line in the right hand margin with a summary of proposed changes contained in the attached Tables 1 and 2.

Consistent with the schedule contained in Reference 2, by July 31, 1991 OPPD intends to submit the following:

(1) LOCA topical reports (WCAP's) for Westinghouse methodology application to Fort Calhoun Station
(2) Cycle 14 Small and Large Break LOCA analyses summary
(3) Cycle 14 CEA Ejection analysis summary
(4) Justification for use of a fuel augmentation factor of 1.0 for W fuel

Please note that pursuant to 10CFR 2.790(b)(1), proprietary versions of the enclosed information in its entirety have been deemed trade secrets and/or privileged commercial information by Combustion Engineering, Inc. and Westinghouse Electric Corporation. Accordingly, enclosed is OPPD's application for withholding the proprietary information from public disclosure. Non-proprietary versions of References 3, 4, and 9 are also attached.

If you have any questions, please do not hesitate to contact me.

Sincerely,

W. G. Gates

W. G. Gates
Division Manager
Nuclear Operations

WGG/pjc

Enclosures

c: LeBoeuf, Lamb, Leiby & MacRae (enclosure of References 3 & 4 proprietary versions only)
R. D. Martin, NRC Regional Administrator, Region IV (w/o enclosures)
W. C. Walker, NRC Project Manager (w/o enclosures)
R. P. Mullikin, NRC Senior Resident Inspector (w/o enclosures)
H. Borchert, Director-Division of Radiological Health, Nebraska Department of Health (w/o enclosures)

BEFORE THE UNITED STATES

NUCLEAR REGULATORY COMMISSION

In the matter of	)	
	)	
OMAHA PUBLIC POWER DISTRICT	)	Docket No. 50-285
(Fort Calhoun Station,	)	
Unit No. 1)	)	

APPLICATION FOR
WITHHOLDING INFORMATION
FROM PUBLIC DISCLOSURE

Pursuant to Section 2.790(b)(1) of the regulations of the Nuclear Regulatory Commission ("the Commission"), Omaha Public Power District ("the District") submits this application to withhold certain information from public disclosure. Applicant has obtained this information from documents which identify this information as being owned by Combustion Engineering, Inc. (CE) or by Westinghouse Electric, (W). It is the position of CE and W that the information in question contains trade secrets and/or privileged or confidential commercial or financial information. The CE and W information was purchased by the District under a proprietary information agreement.

The information for which proprietary treatment is sought is contained in the following documents:

OPPD Nuclear Analysis, Reload Core Analysis Methodology Overview - OPPD-NA-8301-P, Revision 4, dated April, 1991.

OPPD Nuclear Analysis, Reload Core Analysis Methodology, Transient and Accident Methods and Verification, OPPD-NA-8303-P, Revision 3, dated April, 1991.

These documents have been appropriately designated as proprietary.

This information was obtained by the District from documents for which CE and W have executed affidavits which set forth the bases on which the information may be withheld from public disclosure by the Commission.

Respectfully Submitted,

OMAHA PUBLIC POWER DISTRICT

By W. G. Gates
W. G. Gates
Division Manager
Nuclear Operations

Sworn to before me on this 19th day of April, 1991.

Melva L. Evans
Notary

GENERAL NOTARY - State of Nebraska
MELVA L. EVANS
My Comm. Exp. 2-11-92