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 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400  
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 THOMAS, C. O. Standardization & Special Projects Branch

(see subject  
 info)

SUBJECT: Forwards proprietary WCAP-10665-P & nonproprietary  
 WCAP-10666, "Ex-core Axial Power Monitor." Proprietary rept  
 withheld (ref 10CFR2.790). *566 rpt*  
*WCAP 10666*  
*1584 RPTS*

DISTRIBUTION CODE: T008D COPIES RECEIVED: LTR 1 ENCL 15 SIZE: 2+60  
 TITLE: Non-Proprietary Version of Proprietary Topical Report

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Westinghouse  
Electric Corporation

Water Reactor  
Divisions

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NS-EPR-2959  
September 18, 1984

Dr. C. O. Thomas, Chief  
Standardization and Special Projects Branch  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Topical Reports WCAP-10665-P and WCAP-10666, "Excure Axial Power Monitor"

Dear Dr. Thomas:

Enclosed are:

1. Twenty-five (25) copies of the Westinghouse topical report WCAP-10665-P, "Excure Axial Power Monitor", September, 1984, (Proprietary).
2. Fifteen (15) copies of the Westinghouse topical report WCAP-10666, "Excure Axial Power Monitor", September, 1984, (Non-Proprietary).

Also enclosed are:

1. One (1) copy of Application for Withholding, AW-84-87 (Non-Proprietary).
2. One (1) copy of Affidavit (Non-Proprietary).

These reports are being submitted to address the questions and areas of interest identified in the NRC letter from G. W. Knighton (NRC) to E. E. Utley (Carolina Power and Light Company) dated March 24, 1983. In this letter, it was identified that based on differences between the value of  $F_0$  quoted in Sections 4.3 and 15.6 of the Shearon Harris FSAR the plant would be derated to approximately 91% power.

Westinghouse has informally identified to the staff that there is a difference between the Shearon Harris LOCA and FAC analysis calculated  $F_0$  values. This difference is sufficient to warrant the use of supplemental power shape monitoring. In as much as the APDMS described in WCAP-8589 is no longer available, Westinghouse has designed an excure monitoring system similar to that described in WCAP-9105. The NRC letter of March 24, 1983 correctly identifies that no information has been submitted for approval with respect to this new system. In response to this situation the attached WCAPs are provided.

*Two Rids 1007 /25 WCAP-10665-P Prop*  
*1009 /15 WCAP-10666 Non Prop*

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The attached topical reports provide information concerning the following:

- 1) a description of the monitoring system electronics and basic software,
- 2) a description of the algorithms used for monitoring calculations,
- 3) a description of the calibration procedure and it's data requirements,
- 4) an error analysis of the electronics, inputs, algorithms and calibration procedure,
- 5) a comparison of the calculated results of the algorithms (based on excore detector data) versus INCORE, and
6. recommended changes to the plant Technical Specifications for use of the new system.

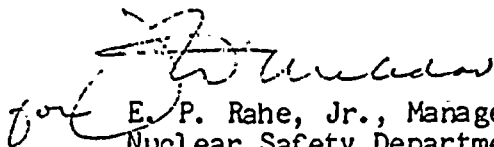
Modifications to Section 4.3 of the Shearon Harris FSAR will be proposed upon indication of acceptance of the new monitoring system.

This submittal contains proprietary information of Westinghouse Electric Corporation. In conformance with the requirements of 10CFR Section 2.790, as amended, of the Commission's regulations, we are enclosing with this submittal an application for withholding from public disclosure and an affidavit. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission.

Correspondence with respect to the affidavit or application for withholding should reference AW-84-87 and should be addressed to R. A. Wiesemann, Manager, Regulatory and Legislative Affairs, Westinghouse Electric Corporation, P.O. Box 355, Pittsburgh, Pennsylvania 15230.

Please feel free to contact Mr. D. G. Bevard, Manager, Advanced Plant and Fuel Licensing at (412)374-5597 if you have any questions concerning this matter.

Very truly yours,

  
E. P. Rahe, Jr., Manager  
Nuclear Safety Department

-CRT/kk  
- Enclosures