ARKANSAS POWER & LIGHT COMPANY
FIRST NATIONAL BUILDING/P.O. BOX 551/LITTLE ROCK, ARKANSAS 72203/(501) 371-7901

September 30, 1983

JOHN M. GRIFFIN
Vice President
Nuclear Operations

2CAN098311

Director of Nuclear Reactor Regulation
ATTN: Mr. James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Proposed Technical Specification
Change Request - Instrument
Incore Detectors

Gentlemen:

Our letter dated July 12, 1983, (2CAN078302) submitted a proposed change to Section 3.3.3.2 of the Arkansas Nuclear One - Unit 2 (ANO-2) Technical Specifications. The proposed changes would place additional requirements on the spatial distribution of operable incore detectors while requiring a minimum of at least three operable detectors in an operable detector string. As part of the proposed change, we requested alteration of the requirement of two quadrant symmetrical locations per core quadrant for incore detector system operability.

During a telephone conversation on August 2, 1983, your staff (Mr. Bob Lee and Ms. Margaret Chatterton) asked for additional information/clarification to support their review of our request. In a subsequent telephone conversation on August 4, 1983, we provided responses to your request. This letter documents our responses which you requested to be provided in a written manner.

The impact upon ANO-2 power operation as a result of the incore detector system being declared inoperable is stated in Attachment 1.

A description of the simulation test cases with incore detector instrument failures extrapolated to the proposed technical specification limits is given in Attachment 2. The test case results for uncertainty values are also provided.

A001 1/10 Change: POR LPDR NTIS NSIC } Non Prop Only

Pursuant to the provisions of 10CFR2.790, the information contained in Attachment 2 is designated to be of a proprietary nature. Therefore, in accordance with the provisions of paragraph (b)(4) of 10CFR2.790, ten copies of the proprietary document identified as CEN-255(A)-P and ten copies of a non-proprietary version identified as CEN-255(A)-NP are submitted under affidavit by Mr. J. M. West, Vice President, Nuclear Power Systems of Combustion Engineering, Inc. You are therefore requested to withhold the proprietary information from public disclosure.

As stated in our July 12, 1983, submittal, we do not believe the proposed amendment to be exigent or an emergency; however, expeditious processing of this request is requested to avoid the development of such a situation.

Very truly yours,

John M. Griffin

JMG:JM:sl

Attachments

STATE OF ARKANSAS)
) SS
COUNTY OF PULASKI)

I, John M. Griffin, being duly sworn, subscribe to and say that I am Vice President, Nuclear Operations for Arkansas Power & Light Company; that I have full authority to execute this oath; that I have read the document numbered 2CAN098311 and know the contents thereof; and that to the best of my knowledge, information and belief the statements in it are true.

John M. Griffin

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 30th day of September, 1983.

Notary Public

My Commission Expires:

4-1-85

ATTACHMENT 1

AFFECT OF INCORE DETECTOR SYSTEM OPERABILITY

ON ANO-2 POWER OPERATION

Technical Specification 3.3.3.2 requires the incore detector system to be OPERABLE whenever the system is used for monitoring azimuthal power tilt, radial peaking factors, local power density or DNB margin. Conversely, with the incore detector system inoperable it cannot be used to monitor azimuthal power tilt, radial peaking factors, local power density or DNB margin. The impact on plant operation of not having this monitoring capability can be assessed by examining technical specifications on the four parameters listed above.

Specification 3.2.1 requires the linear heat rate margin be maintained by operating within the applicable region of acceptable operation of Figures 3.2-1 or 3.2-2, as applicable. With the incore detector system inoperable, the Core Operating Limit Supervisory System (COLSS) can not be used to monitor linear heat rate margin per Figure 3.2-1. With the COLSS out of service, linear heat rate is determined from operable local power density channels and verified to be within the limits shown on Figure 3.2-2. Since the 100% full power linear heat rate calculated by operable local power density channels is typically less than the limit shown on Figure 3.2-2, loss of the incore detector system is not expected to affect power operation with regard to Technical Specification 3.2.1.

Specification 3.2.4 requires the DNBR margin be maintained by operating within the region of acceptable operation of Figure 3.2-3 or 3.2-4, as applicable. When the COLSS is out of service because the incore detector system is inoperable, the DNBR must be determined to be within the limits of Figure 3.2-4 as indicated on all operable DNBR channels.

At the time the DNBR monitoring function becomes dependent on operable DNBR channels, operator action would be necessary to reduce reactor power from 100% rated thermal power in order to comply with DNBR limits shown on Figure 3.2-4. This corrective action must be initiated within 15 minutes of determining that the acceptable limits of Figure 3.2-4 have been exceeded. Based upon current operating conditions, it is estimated that reactor power would have to be reduced to approximately 75% of rated thermal power to meet the specification limits.

Azimuthal Power Tilt (T_q) is determined to be within the limits of Technical Specification 3.2.3 by continuously monitoring tilt with the COLSS. If the incore detector system becomes inoperable and COLSS cannot be used to monitor tilt, then the excore detector system provides an alternate method of computing tilt. Hence, loss of the incore detector system for tilt calculations would have no impact on power operation.

Measured planar radial peaking factors (F^m_{xy}) must be less than or equal to the planar radial peaking factors (F^c_{xy}) used in the COLSS or the Core Protection Calculator System (CPCS). F^m_{xy}, obtained by using the incore detector system, is determined to be less than or equal to F^c_{xy} at least once per 31 days of accumulated operation in Mode 1. If the incore detector

system becomes inoperable, F^{m}_{xy} cannot be determined. If the surveillance requirement on F^{m}_{xy} could not be met, then the plant would have to be in HOT STANDBY within 6 hours of the time limit for performing the surveillance. Specification 4.0.3 states that "Failure to perform a Surveillance Requirement within the specified time interval shall constitute a failure to meet the operability requirements for a Limiting Condition for Operation." Thus, action c of Specification 3.2.2 would be applicable.

In summary, failure of the incore detector system to meet the operability requirements of Technical Specification 3.3.3.2 would have significant impact on ANO-2 power operation. Immediately following loss of the system, reactor power would have to be reduced to approximately 75% rated thermal power to meet the requirements of Technical Specification 3.2.4. ANO-2 would have to be placed in at least HOT STANDBY within 6 hours of failing to perform radial peaking factor surveillances required by Technical Specification 3.2.2 (i.e., not greater than 31 days).

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

Combustion Engineering, Inc.)
State of Connecticut)
County of Hartford) SS.:

I, J. M. West, depose and say that I am the Vice President, Nuclear Power Systems, of Combustion Engineering, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations and in conjunction with the application of Arkansas Power and Light Company for withholding this information.

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

CEN-255 (A)-P, Responses to NRC Questions Regarding ANO-2 Cycle 3 Technical Specifications, August 1983.

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure are related to the development of ANO-2 distribution measurement uncertainties, which is owned and has been held in confidence by Combustion Engineering.

2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a substantial competitive advantage to Combustion Engineering.

3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F.M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein are proprietary.

4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.

5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.

6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering because:

a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.

b. Development of this information by C-E required hundreds of manhours of effort and tens of thousands of dollars. To the best of my knowledge and belief a competitor would have to undergo similar expense in generating equivalent information.

c. In order to acquire such information, a competitor would also require considerable time and inconvenience related to the development of methodology for calculating power distribution measurement uncertainties.

d. The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.

e. The information is related to the development of ANO-2 power distribution measurement uncertainties, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

f. In pricing Combustion Engineering's products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such information

without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

g. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with their technology development. In addition, disclosure would have an adverse economic impact on Combustion Engineering's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.

J. M. West
Vice President
Nuclear Power Systems

Sworn to before me
this 18th day of August, 1983

Theresa M. Regan
Notary Public

THERESA M. REGAN, NOTARY PUBLIC
STATE OF CONNECTICUT NO. 66097
COMMISSION EXPIRES MARCH 31, 1988