ACCELERATED DOCUMENT DISTRIBUTION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9309210219 DOC.DATE: 93/09/17 NOTARIZED: YES DOCKET #
FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana M 05000315
50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana M 05000316

AUTH.NAME AUTHOR AFFILIATION
FITZPATRICK,E. American Electric Power Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
MURLEY,T.E. Document Control Branch (Document Control Desk)

SUBJECT: Responds to GL 93-04, "Rod Control Sys Failure & Withdrawal of Rod Control Cluster Assemblies."

DISTRIBUTION CODE: A030D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: Generic Ltr-93-04-Rod Control System Failure & Withdrawal of Rod Cont

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	NRR/PRPW/PDIV-1	2	2	WETZEL,B	1	1
INTERNAL:	NRR/DRCH/HICB	1	1	NRR/DSSA/SRXB	1	1
	REG FILE 01	1	1			
EXTERNAL:	NRC PDR	1	1			

R I D S / A D D S

R I D S / A D D S

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 7 ENCL 7

MA-4 dkp

American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, OH 43215
614 223 1000

AEP
AMERICAN ELECTRIC POWER

AEP:NRC:1190A
GL 93-04

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
RESPONSE TO GENERIC LETTER 93-04, "ROD CONTROL SYSTEM FAILURE AND WITHDRAWAL OF ROD CONTROL CLUSTER ASSEMBLIES"

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

September 17, 1993

Dear Dr. Murley:

Pursuant to the requirements of 10 CFR 50.54(f), the NRC issued Generic Letter 93-04 on June 21, 1993. Generic Letter 93-04 was addressed to all licensees with the Westinghouse Rod Control System (except Haddam Neck) for action, and to all other licensees for information.

In our letter AEP:NRC:1190, dated August 5, 1993, we provided Indiana Michigan Power Company's (I&M) 45-day Required Response to 1.(b), part two, of Generic Letter 93-04 as it applied to Donald C. Cook Nuclear Plant Units 1 and 2 (Cook Nuclear Plant). The response summarized the compensatory actions taken by I&M in response to the Salem rod control system failure event. It also provided a summary of the results of the generic safety analysis program conducted by the Westinghouse Owners Group (WOG) and its applicability to Cook Nuclear Plant. By using three-dimensional neutronic models for the safety analysis, it was concluded that there is no safety significance for any asymmetric rod control cluster assembly (RCCA) withdrawal event.

The Attachment to this letter is our 90-day Required Response to 1.(a) of Generic Letter 93-04 as it applies to Cook Nuclear Plant. The response concludes that the licensing basis is satisfied for General Design Criteria (GDC) 25. Based on the results of 1.(a), responses to questions 1.(b), part one, and 2 are not required.

20:100

A030 1/1

This letter is submitted pursuant to 10 CFR 50.54(f) and, as such, an oath statement is attached.

Sincerely,

E. E. Fitzpatrick
Vice President

dr

Attachment

cc: A. A. Blind
G. Charnoff
J. B. Martin - Region III
NFEM Section Chief
NRC Resident Inspector - Bridgman
J. R. Padgett

STATE OF OHIO)
COUNTY OF FRANKLIN)

E. E. Fitzpatrick, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the forgoing Response to GENERIC LETTER 93-04 and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

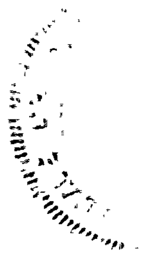
E E Fitzpatrick

Subscribed and sworn to before me this 17th

day of September, 19 93.

Rita D. Hill
NOTARY PUBLIC

RITA D. HILL
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES 6-28-94



ATTACHMENT TO AEP:NRC:1190A

RESPONSE TO NRC GL 93-04

Assessment of Licensing Basis Compliance [Required Response 1.(a)]

The WOG undertook the following initiatives to support the response to NRC Generic Letter 93-04: conducting Rod Control System testing in the Salem training center, examining the existing Rod Control System Failure Modes and Effects Analysis (FMEA), analyzing the worst-case asymmetric RCCA withdrawal combinations with three-dimensional analytical neutronic methods, and performing an equipment survey of Westinghouse plants to determine the frequency and significance of control system circuit card failures.

After this extensive investigation, it was concluded that GDC 25 continues to be satisfied. However, it is recognized that there are questions as to the interpretation of not only the intent of GDC 25, but also the appropriate definition of the specified acceptable fuel design limit.

The NRC has interpreted the GDC 25 fuel design limit to be the departure from nucleate boiling (DNB) design basis. This is believed to be a conservative definition if applied to all events. The equipment survey conducted by the WOG demonstrated that the failure rate of card failures that could result in the movement of less than a whole group is on the order of 4×10^{-8}/critical reactor hours. This indicates that the likelihood of a Salem-type event is extremely remote. With this in mind, it is apparent that a Condition III (or IV) specified acceptable fuel design limit would be applicable.

Based on the current understanding of GDC 25, the purpose of this criterion is to ensure that the appropriate limits (commensurate with the probability of occurrence) are not violated for a "worst-case" stand-alone single failure. The test program conducted at the Salem training center demonstrated that all the RCCAs within a given group receive the same signals. The corrupted current orders generated by the logic cabinet failures at Salem were transmitted identically to all 8 RCCAs in Shutdown Bank A (SBA). The fact that only one RCCA withdrew in the plant was due to a second unrelated effect. If all the RCCAs in SBA responded as predicted in the existing FMEA, they would have withdrawn uniformly, thus being enveloped by the existing FSAR accident analyses. In addition, existing RCCA motion surveillance requirements would detect the type of RCCA motion failure observed at Salem. Thus, the requirement that one single failure not result in a specified acceptable fuel design limit being exceeded, in this case the DNB design basis, remains satisfied.

Long-term Enhancements

While the assessment indicates that the licensing basis is currently satisfied, the WOG recommended that the utilities choose one of two actions that could be taken by utilities to enhance compliance with GDC 25. One recommended action includes making 'current order timing' adjustments in the Rod Control System logic cabinets and performing an additional plant surveillance to verify the timing is correct. The other recommended action consists of adding a safety analysis to the FSAR covering asymmetric RCCA withdrawal events and again, adding a plant surveillance to verify correct 'current order timing.'

Upon successful demonstration of the 'current order timing' adjustments at an operating plant and receipt of the technical bulletin from Westinghouse, we will evaluate which recommendation is appropriate for Cook Nuclear Plant, and implement it in a timely manner.