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 FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
 50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
 AUTH.NAME AUTHOR AFFILIATION
 ALEXICH,M,P. Indiana & Michigan Electric Co.
 RECIP.NAME RECIPIENT AFFILIATION
 DENTON,H,R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Informs of temporary procedural change to ensure that plant operations consistent w/FSAR analysis assumptions for interim period until proposed Tech Spec change re reactor coolant pump operability at hot zero power approved.

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THE
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D. C.

TO THE SECRETARY OF THE INTERIOR
FROM THE DIRECTOR OF THE BUREAU OF LAND MANAGEMENT
SUBJECT: [Illegible]

RE: [Illegible]

1. [Illegible]

2. [Illegible]

INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
COLUMBUS, OHIO 43216

July 30, 1984
AEP:NRC:0895

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
NUMBER OF REACTOR COOLANT PUMPS OPERATIONAL IN MODE 3

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

By letter dated June 6, 1984, Indiana & Michigan Electric Company (IMECo) was notified by Westinghouse Electric Corporation (W) that several Final Safety Analysis Report (FSAR) analyses performed at Hot Zero Power (HWP) assumed the operation of two (2) Reactor Coolant Pumps (RCPs). The limiting analyses at HWP, i.e., steam line break, rod ejection, and bank withdrawal from subcritical conditions, are assumed to bound postulated Operational Mode 3 accidents and transients. The Donald C. Cook Nuclear Plant Unit Nos. 1 and 2 Appendix "A" Technical Specification (T/S) 3.4.1.2, however, requires that only one (1) RCP be operating during Operational Mode 3, and that at least one (1) additional RCP be available to meet single failure criteria.

The attachment to this letter contains a copy of the notification which we received from W. As noted in this letter, W has determined that the inconsistency between the FSAR and the T/S will not impact the FSAR conclusions for the steam line break accident and the rod ejection transient. For the bank withdrawal from subcritical conditions transient, W calculations indicate that the departure from nucleate boiling (DNB) design basis may not be met when only one (1) RCP is running. On a best estimate basis, however, W believes that "... the DNB design basis can be met. The FSAR licensing basis analysis includes conservatism (such as high reactivity insertions rates) which when removed, show that [departure from nucleate boiling ratio] DNBR is above the limit value. Thus, no significant safety hazard exists. . . ."


We are currently preparing a proposed amendment to the T/S to deal with this situation. In the interim period until the modified T/S is approved by your staff, we have instituted a temporary procedural change to ensure that plant operations are consistent with the FSAR analysis assumptions. That instruction requires that we operate with at least two (2) reactor coolant pumps while in Mode 3 unless the reactor trip breakers are disconnected.

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We are notifying you consistent with 10CFR50.36. This matter was discussed with your staff upon notification from W.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.


M. P. Alexich
Vice President
PBK
7/30/84

MPA/dam
Attachment

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Charnoff
E. R. Swanson - NRC Resident Inspector, Bridgman

ATTACHMENT TO AEP:NRC:0895
WESTINGHOUSE LETTER REGARDING NUMBER OF
REACTOR COOLANT PUMPS IN OPERATIONAL MODE 3
DONALD C. COOK NUCLEAR PLANT UNIT NOS. 1 AND 2



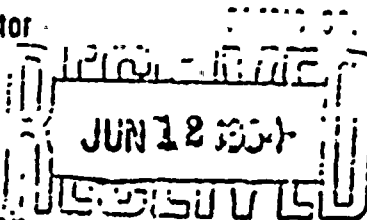
Westinghouse
Electric Corporation

Water Reactor
Divisions

Nuclear Services
Integration Division

Box 2728
Pittsburgh, Pennsylvania 15230-2728

June 6, 1984
AEP-84-612



Mr. W. G. Smith, Plant Manager
D. C. Cook Nuclear Plant
Indiana and Michigan Power Company
P. O. Box 458
Bridgman, Michigan 49106

Dear Mr. Smith:

American Electric Power Service Corporation
D. C. Cook Unit 1

CONSISTENCY BETWEEN SAFETY ANALYSIS AND TECHNICAL SPECIFICATIONS
CONCERNING NUMBER OF REACTOR COOLANT PUMPS IN OPERATION

This letter is to notify you of a potential unreviewed safety question concerning the consistency between the safety analysis and the Technical Specifications. According to 10CFR50.36, the assumptions in the safety analysis and the plant Tech Specs must be consistent. This ensures that the plant is operated in a manner such that it is bounded by the FSAR accident analysis.

As part of an informal review of a utility's Tech Specs in the NRC Reactor Systems Branch, the staff asked what the safety analysis assumptions were concerning the number of operating reactor coolant pumps, particularly at or near zero power. This information is stated in the FSAR for the zero power accidents. Although the question was never formally asked, Westinghouse reviewed the analysis assumption with respect to the Tech Specs.

The issue in question concerns the number of operating reactor coolant pumps when in Mode 3, which is defined in the Tech Specs as between 350°F and the no-load temperature (either 547 or 557°F). The reactor is also subcritical as required by the Shutdown Margin Spec, Standard Tech Spec 3.1.1.1. The STS Spec number (which should correspond to your Spec number) which contains the requirement for the number of operating loops is Spec 3.4.1.2. This Tech Spec states that in Mode 3, there must be two loops operable (which means that the reactor coolant pump must be operable), but only one loop must be actually operating.

However, the safety analysis in the FSAR assumes that either two or all of the reactor coolant pumps are actually operating, not just one. In the FSAR, analyses performed at Hot Zero Power (HZIP) are assumed to bound Mode 3 operation. The accidents which are limiting at HZIP are steamline break, rod

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ejection and bank withdrawal from subcritical. Westinghouse has reviewed these accidents under the reduced flow conditions of one pump. For the rod ejection and steamline break events, Westinghouse has determined that the inconsistency between the safety analysis and the Tech Spec will not impact the conclusions presented in the FSAR. However, for the bank withdrawal from subcritical accident, Westinghouse has performed calculations which show that the DNB design basis for this Condition II event may not be met when only one pump is in operation. Thus, the margin for safety as defined in the basis for the Tech Specs is reduced and this may be an unreviewed safety question according to 10CFR50.59.

Note that on a best estimate basis, the DNB design basis can be met. The FSAR licensing basis analysis includes conservatisms (such as high reactivity insertions rates) which when removed, show that the DNBR is above the limit value. Thus, no significant safety hazard exists.

Westinghouse recommends that you review your FSAR analysis for the bank withdrawal from subcritical event for consistency with your Tech Specs. Furthermore, Westinghouse recommends that you require the number of operating pumps in Mode 3 to be consistent with the analysis. Alternatively, you should ensure that rod withdrawal will not occur when in Mode 3 if the requirement for pump operation cannot be met in Mode 3. This will ensure that the safety analysis is consistent with plant operation.

If you have any questions, please contact me.

Very truly yours,


W. J. Johnson, Manager
Projects Department
Central Area

HT/387L

cc: M. P. Alexich
W. G. Smith
J. Waleko W