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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 Power Co. (formerly Indiana & Michigan Ele
 RECIP. NAME RECIPIENT AFFILIATION
 MURLEY, T.E. Document Control Branch (Document Control Desk)

SUBJECT: Supplemental application for amend to Licenses DPR-58 &
 DPR-74 re RCP breaker position trip above P-8. Fee paid.

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AEP:NRC:0895G

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
RCP BREAKER POSITION TRIP ABOVE P-8:
ADDITIONAL INFORMATION

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

Attn: T. E. Murley

December 21, 1988

Dear Dr. Murley:

In AEP:NRC:0895D dated January 27, 1986, we submitted an application for amendment to our Technical Specifications (T/Ss) in which we proposed to change the logic for the reactor coolant pump breaker position (RCPBP) trip above permissive P-8 from one out of four breakers open to two out of four breakers open. Your staff subsequently requested that we provide additional information to support our proposal. Specifically we were to provide (1) a report from Westinghouse Electric Corporation (Westinghouse) stating that the proposed change would not adversely affect public health and safety and (2) an explanation of why the change would be of benefit in light of the fact that it would eliminate some protective system diversity.

In response to the first concern, we requested that Westinghouse review the proposed change. Their review and concurrence are documented in a letter from H. C. Walls (Westinghouse) to M. P. Alexich dated May 9, 1986, which is included as Attachment 1 to this letter. The letter states that Westinghouse has not taken credit for the reactor trip on a single RCP breaker position above P-8 for any accident analysis for the Donald C. Cook Nuclear Plant Units 1 and 2 and that the change would not degrade the performance of the reactor protection system or its conformance to system functional requirements. The conclusion by Westinghouse is that the proposed change is acceptable.

In response to the second NRC concern, we believe that the change would be of benefit since it would reduce the number of spurious trips caused by failure of our Control Room Instrumentation Distribution System (CRID) and reduce challenges to our reactor protection system (RPS).

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ATTACHMENT 1 TO AEP:NRC:0895G
WESTINGHOUSE REVIEW OF THE
PROPOSED TECHNICAL SPECIFICATION CHANGES
REGARDING DELETION OF THE
REACTOR COOLANT PUMP BREAKER POSITION TRIP
ABOVE PERMISSIVE P-8

Despite the extensive hardware modifications implemented to prevent spurious trips and the resulting plant transients, we recently had a reactor trip caused by spurious initiation of the RCPBP trip. We therefore believe that our proposed T/S change is necessary to supplement the hardware modifications and request that your staff proceed with their review of our T/S change request.

It is noted that this change in RPS logic is provided as a retrofit for all Westinghouse PWR units, and all domestic PWR units supplied subsequent to Three Mile Island incorporate this change.

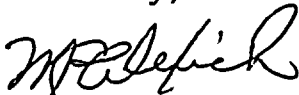
The change in design from one out of four to two out of four logic will be scheduled for implementation after approval of this T/S change is received.

For your convenience, our original submittal (AEP:NRC:0895D) is included as Attachment 2 to this letter. The significant hazards analysis (SHA) included in our original submittal did not separate our analysis for each of the 10 CFR 50.92 criteria; therefore, Attachment 3 provides a more detailed SHA which addresses each of the criteria separately. Finally, changes have been made to the affected pages since our original proposal was submitted, and Attachment 4 therefore contains a revised set of T/S pages.

This submittal supplements our earlier T/S application and the \$150.00 application fee has therefore not been included.

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.

Sincerely,



M. P. Alexich
Vice President

ldp

Attachments

cc: D. H. Williams, Jr.
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis - Region III

Westinghouse
Electric Corporation

Water Reactor
Divisions

Box 355
Pittsburgh Pennsylvania 15230-0355

AEP-86-556

May 9, 1986

NS-OPLS-OPL-I-86-121
AEP P.O. 01882
W G.O. CB-10009

Mr. M. P. Alexich, Vice President
and Director Nuclear Operations
American Electric Power Service Corporation
One Riverside Plaza
Columbus, Ohio 43216

Attention: D. VanDeusen

AMERICAN ELECTRIC POWER SERVICE CORPORATION
D. C. COOK UNITS 1 & 2
DELETION OF RCP BREAKER POSITION
REACTOR TRIP (ABOVE P-8)

Dear Mr. Alexich:

In response to your request, this letter addresses concerns raised about the deletion of the reactor trip on a single reactor coolant pump breaker position above P-8 for D. C. Cook Units 1 and 2. The reactor trip from breaker position is changed from 1 out of 4 RCP breakers open above the P-8 power level setpoint to 2 out of 4 breakers open for all power levels above the P-7 setpoint. The NRC has raised concerns about the effect of this logic change on the diversity and redundancy of the reactor protection system (RPS) for the single loop loss of flow event.

In the event of a single loop loss of flow, the low flow reactor trip is the design protection, and it meets the design requirement of maintaining minimum DNBR above the limit value. If no credit is taken for the low flow reactor trip, DNBR may be less than the limit value at the limiting point in the transient. However, a reactor trip on high Delta-T would terminate the accident before DNB occurs in a significant portion of the core. Westinghouse analysis shows that the hot spot clad temperature (on the inner clad surface) remains well below the melting point.

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NS-OPLS-OPL-I-86-121

Three redundant flow channels are provided for each loop for the low flow reactor trip. Above P-8, loss of flow in any loop, as sensed by two out of three channels, actuates a reactor trip. For the high Delta-T reactor trips, one channel per loop is provided, and high Delta-T sensed by any two channels trips the reactor.

The deletion of reactor trip on a single RCP breaker position above P-8, as described above, affects only the coincidence logic of the RPS and does not degrade either its performance or conformance to system functional requirements. In addition, it should be noted that Westinghouse has not taken credit for reactor trip on a single RCP breaker position above P-8 for any accident analyses for D. C. Cook Units 1 and 2. Also the change provides a reduction of challenges (i.e. spurious trips) to the RPS.

Westinghouse concludes that the deletion of reactor trip on a single reactor coolant pump breaker position above P-8 is acceptable. The diversity and redundancy of the reactor protection system is maintained for the single loop loss of flow event.

If you have any questions or comments regarding the preceding, please call Bill Rinkacs (412) 374-4043, Larry Tomasic (412) 374-4715, or the undersigned.

Very truly yours,



H. C. Walls, Project Manager
Projects Department

LVT:dmr

cc: M. P. Alexich
J. G. Feinstein
V. VanderBurg
J. Markowsky
S. H. Steinhart
D. R. Hafer
J. R. Jensen
R. W. Jurgensen
W. G. Smith
B. Svensson
M. J. Parvin, W

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bcc: H. C. Walls/Letter File
C. C. Swist 7/306
NSID Plant Data Files - 7/109
M. J. Parvin - D. C. Cook
J. Waleko - Columbus
W. T. Comerford - Chicago
R. P. DiPiazza - MNC-414
OPL Letter File - MNC-411 Denise Rohaus
L. V. Tomasic - MNC M.S. 4/08
W. J. Rinkacs, MNC 416
M. P. Osborne, MNC 414

ATTACHMENT 2 TO AEP:NRC:0895G

TECHNICAL SPECIFICATION CHANGE

APPLICATION SUBMITTED ON

JANUARY 27, 1986