

INDIANA & MICHIGAN ELECTRIC COMPANY

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April 10, 1986
AEP:NRC:0962C

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos 50-315 and 50-316
License Nos. DPR-58 and DPR-74
UVTA TEST REPORT

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

Dear Mr. Denton:

Please be advised that we have reviewed WCAP-11092, titled "Investigation on Undervoltage Trip Attachments for Cause of Misoperation at D. C. Cook Unit 2 on 10/29/85." Based on our observations of the test and our review of the test data, we believe the failure of mechanism of DB-50 UVTA was as described in the conclusion section of the WCAP.

Pursuant to the request of your staff, additional comments by our engineers are included as an attachment to this letter.

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

Very truly yours,



M. P. Alexich
Vice President

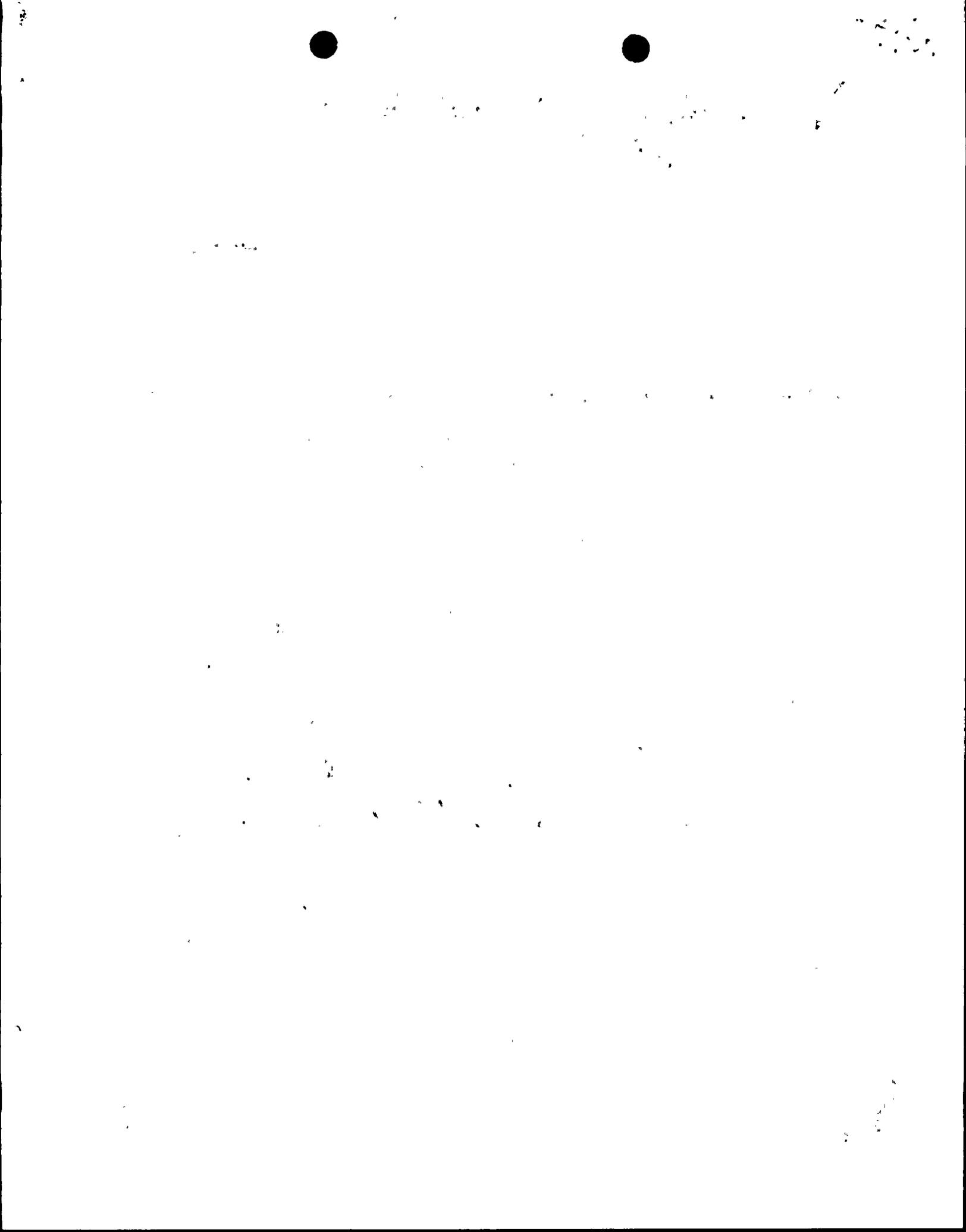
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Attachment
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cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman

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Comments on WCAP-11092 by AEPSC
Engineers A. K. McCabe and R. C. Carruth

Based on our observations and what we read in the WCAP-1092, we are in agreement with the conclusions reached by Westinghouse in the subject WCAP. They are consistent with what we observed while witnessing the testing program.

UVTA-A, the UVTA that actually failed to trip its reactor trip breaker in service, had a manufacturing defect, the presence of which led to accelerated degradation of the device, specifically its lubrication at critical mating areas.

UVTA-B, the UVTA that failed the modified margin test performed by a Westinghouse representative at Cook, was observed to behave normally as judged by the performance of the other UVTAs tested.

We note, however, that Westinghouse has omitted reference to test results documenting the very earliest performance of UVTA-A in its "as-found" condition. Section 5.4.3 of the WCAP characterizes performance of the as-found and as-corrected UVTA as being not substantially different. Data taken at the beginning of the as-found force profile testing, but apparently omitted from the test report, indicated that the failed UVTA-A could develop a force in the range of only 2.3 - 2.5 lbs., whereas the same UVTA, after exercise, displacement of the trip spring and correction of the weld splatter, could develop forces in the order of 4.2 to 4.3. We consider this to be significant.

Further, it was observed that bench testing (via load cell) in the tests referenced by Westinghouse was less reliable than actual trip force margin testing using margin weights on an actual circuit breaker. (WOG testing). Such testing, conducted as part of this testing program, did in fact demonstrate multiple instances where the UVTA-A failed to trip a circuit breaker with zero margin weights applied. This was not mentioned in the WCAP.

We feel that this is not a serious concern insofar as it did not change the final conclusions presented in the WCAP. However, we feel that the observation included in the body of the WCAP relative to the adequacy of the failed UVTA-A's ultimate demonstrated capacity to perform (capacity to trip a reactor trip circuit breaker) is potentially misleading, suggesting that this UVTA's failure at Cook was isolated and not repeatable. The exact opposite is true. UVTA-A demonstrated a consistent weakness and inability to provide sufficient trip force to the breaker trip bar. Only after this device had been handled in testing was the device trip force restored (presumably by the unintentional reintroduction of lubricant into the critical latch-latch spring interface, as was suggested by Westinghouse in Section 6.1.2 of WCAP-11092).