

September 29, 2000

MEMORANDUM TO: John A. Grobe, Director
Division of Reactor Safety
Region III

FROM: Suzanne C. Black, Deputy Director */RA/*
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: DONALD C. COOK (D. C. COOK), UNITS 1 AND 2 - TASK INTERFACE AGREEMENT (TIA) 2000-09 - EVALUATION OF THE REQUIREMENT FOR ON-LINE TESTING OF SLAVE RELAYS IN THE ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (TAC NOS. MA9323 AND MA9324)

By memorandum dated May 25, 2000, Region III requested technical assistance from the Office of Nuclear Reactor Regulation (NRR) in evaluating whether the licensee of D. C. Cook Nuclear Power Plants was at any time, or currently, required to perform on-line testing of Engineered Safety Feature Actuation System (ESFAS) slave relays. In addition, Region III requested NRR to determine whether this testing was required to be addressed in the licensee's response to Generic Letter (GL) 96-01 and whether sufficient safety benefit warranted backfitting on-line testing of the ESFAS slave relays.

Specifically, Region III requested resolution of the following issues:

Region III requests that NRR formally review the licensing basis, determine the accuracy of our conclusion, and determine whether or not there would be sufficient safety benefit to warrant imposing this testing on D. C. Cook, in accordance with 10 CFR 50.109. Region III further requests that NRR determine whether or not the concerned individual's interpretation of GL 96-01 is correct and if the licensee's original submittal should have discussed this issue.

Attached is the NRR staff safety evaluation. Based on the staff's review, the staff finds that the D. C. Cook ESFAS slave relays are not required to be tested on-line because the D. C. Cook Technical Specifications require testing of slave relays on a refueling interval. The staff has previously approved a Westinghouse topical report justifying refueling interval testing of slave relays. Our safety evaluation also found that GL 96-01 required the licensees to ensure that the plant surveillance test procedures assure testing of all portions of ESFAS actuation logic circuitry, including slave relays, per the plant Technical Specification test interval. The staff recently reviewed the licensee's responses to GL 96-01 and by letter dated September 6, 2000, concluded that the actions taken by the licensee were sufficient. The letter is available in ADAMS under accession number ML003747565.

J. Grobe

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This completes NRR's review and evaluation efforts under TIA 2000-09 and TAC Nos. MA9323 and MA9824. If you have any questions regarding this issue, please contact J. Stang of my staff at (301) 415-1345.

Docket No. 50-316

Attachment: Safety Evaluation

cc w/att: W. Lanning, Region I
C. Casto, Region II
A. Howell, Region IV

CONTACT: J. Stang, NRR
(301) 415-1345

J. Grobe

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REQUIREMENT FOR ON-LINE TESTING OF SLAVE RELAYS IN THE ENGINEERED
SAFETY FEATURE ACTUATION SYSTEM
INDIANA MICHIGAN POWER COMPANY
DONALD C. COOK NUCLEAR PLANT, UNITS 1 & 2
DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By memorandum dated May 25, 2000, (Reference 1), Region III requested the Office of Nuclear Reactor Regulation (NRR) to determine whether the licensee, Indiana Michigan Power Company (IMPC), of D. C. Cook Nuclear Power Plant was at any time or currently, required to perform on-line testing of the Engineered Safety Feature Actuation System (ESFAS) slave relays. In addition, Region III requested NRR to determine whether this testing was required to be addressed in the licensee's response to Generic Letter (GL) 96-01 and whether sufficient safety benefit warranted backfitting on-line testing of the ESFAS slave relays.

2.0 BACKGROUND

Region III received an allegation in September 1999, that IMPC never conducted monthly at-power testing of the ESFAS slave relays, as required. The allegation cited a 1973 staff Safety Evaluation Report (SER) on D. C. Cook power plant Final Safety Analysis Report (FSAR) where the licensee provided a complete description of the Safeguard Test Cabinet (STC) design capability for on-line testing of the ESFAS slave relays and quoted the SER statement that this testing would be included in the plant technical specifications (TS). The allegation found the plant TS inadequate because it did not require on-line testing of the ESFAS slave relays and that the consequential failure to perform this testing should have been identified in the licensee's response to GL 96-01. D. C. Cook TS requires refueling outage testing of the slave relays.

A Region III inspection concluded that, although the capability to conduct monthly on-line testing of the ESFAS slave relays was included in the licensing basis, the test was never performed because the plant TS did not require monthly tests. Therefore, since this testing was not included in the TS, the licensee did not violate any requirement and the safety benefit gained through the performance of this test would not be sufficient to justify its imposition. Region III further concluded that GL 96-01 only addresses the TS required surveillance testing and does not require the licensees to evaluate their TS and correct

inadequacies. In Reference 1, Region III requested NRR to determine the accuracy of their conclusions.

3.0 EVALUATION

3.1 Requirement for On-Line Testing of ESFAS Slave Relays

The FSAR of a nuclear power plant describes the design features of a component or system, whereas the plant TS are a licensing requirement for operating the power plant which includes the surveillance testing of the components and systems to demonstrate their operability.

The 1982 revision of D. C. Cook FSAR (referenced and included in the allegation package), as well as the current revision, indicate that the testing capability is provided for each slave relay. Both revisions of the FSAR indicate that separate STCs provide the capability to check the ESFAS actuation logic circuitry, including slave relays, for both trains of ESFAS instrumentation. The 1982 revision of the FSAR did not specify the plant operating condition for this test, whereas the current revision states that the ESFAS circuitry from the slave relays to the final elements is primarily tested when the unit is not at power operation.

The D. C. Cook TS require testing of the slave relays during a refueling outage (TS Table 4.3-2, Trip Actuating Device Operational Test). In addition, the staff approved Westinghouse Owners Group Topical Reports WCAP-13877 and WCAP-13900, "ESFAS Subgroup Relay Test Interval Extension" that justify extending the surveillance test interval of Westinghouse type AR relays which are used as slave relays in the ESFAS instrumentation. The Region III contact (Martin J. Farber) confirmed that D. C. Cook ESFAS slave relays are Westinghouse type AR relays and, therefore, are approved for a refueling outage test. The staff, therefore, concludes that while the plant design includes the capability of on-line testing of the ESFAS slave relays at D. C. Cook, there has never been a regulatory requirement to test the slave relays on-line. The NRR staff's approval of the Westinghouse topical reports justifying refueling outage testing of the slave relays has established the limited safety benefit of on-line testing of the ESFAS slave relays. The NRR staff agrees with the Region III conclusion that the licensee did not violate any requirement and that the safety benefit gained through performing on-line testing of the ESFAS slave relays would not be sufficient to justify its imposition.

3.2 GL 96-01 Response Addressing On-line Testing of The ESFAS Slave Relays

GL 96-01 requested licensees to compare schematic drawings and logic diagrams of ESFAS actuation logic against the plant surveillance test procedures to ensure that all portions of the logic circuitry, including the slave relays, are adequately covered by the plant surveillance test procedures to fulfill the plant TS requirements. The licensees were requested to modify their plant surveillance procedures, if necessary, to accomplish a complete testing of the ESFAS logic circuits to comply with the plant TS requirements. Licensees were provided an option to request an amendment to the TS if relief from certain testing requirements was justifiable. These requests were further clarified in Reference 2 where the staff responded to the industry concerns regarding GL 96-01. The staff response stated that the GL 96-01 review was limited to the tests specified in the plant TS

for safety-related logic circuits (answer to Questions 1 and 16) and this GL does not change the current TS surveillance test intervals (answer to Question 14). However, if a licensee determines that the TS required surveillance testing cannot be performed during power-operation or shutdown without risk to plant safety, the licensee should request an appropriate TS change. As such, it is evident that the GL 96-01 did not request licensees to address requirements that are outside the plant TS. Therefore, the NRR staff agrees with Region III conclusion that GL 96-01 addresses only the plant TS required surveillance testing.

4.0 CONCLUSION

Based on the above evaluation, the NRR staff concludes that: (1) there has been no requirement for the D. C. Cook power plant licensee to perform on-line testing of the ESFAS slave relays and sufficient safety benefit is not established to warrant backfitting of this test at D. C. Cook; and (2) GL 96-01 was issued to ensure that the plant surveillance test procedures adequately test all portions of the ESFAS actuation logic circuitry to fulfill the plant TS requirements, rather than those which are beyond plant TS.

5.0 REFERENCES

1. John A. Grobe (Region III) memorandum to Suzanne C. Black (NRR), dated May 25, 2000, "TIA-2000-09, Requirement for On-Line Testing of ESFAS Slave Relays at D. C. Cook."
2. Bruce A. Boger (NRC) letter to Alexander Marion (NEI), dated March 27, 1996, "Results of March 19, 1999 Workshop Regarding GL 96-01."

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Date: September 29, 2000