

June 18, 2002

Mr. A. C. Bakken III  
Senior Vice President  
Nuclear Generation Group  
American Electric Power Company  
500 Circle Drive  
Buchanan, MI 49107

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR INDIANA MICHIGAN  
POWER COMPANY REGARDING D.C. COOK, UNITS 1 AND 2  
(NOED-02-3-002)

Dear Mr. Bakken:

By letter dated June 14, 2002, you requested that the NRC exercise discretion not to enforce compliance with the actions required in Technical Specification (TS) 3.0.5 regarding essential service water pump operability. Your letter documented information previously discussed with the NRC in a telephone conference which occurred on June 12, 2002. At the time of the telephone conference, both Units were operating in Mode 1. Unit 1 was operating at about 68 percent power and increasing as a result of completing a routine refueling outage. Unit 2 was at 100 percent power and stable. As a result of an explosion of a current transformer in a 345 kV breaker and fire in the switchyard, an Alert had been declared.

The principal NRC staff members who participated in that telephone conference included: James Caldwell, Deputy Regional Administrator, RIII; Geoffrey Grant, Director, Division of Reactor Projects (DRP), RIII; David Passehl, Acting Chief, Reactor Projects Branch 6, DRP, RIII; Roy Caniano, Deputy Director, Division of Reactor Safety (DRS), RIII; Ronald Gardner, Chief, Electrical Engineering Branch, DRS, RIII; Michael Parker, Senior Reactor Analyst, DRS, RIII; Kevin Coyne, Resident Inspector, D.C. Cook; Singh Bajwa, Director, Project Directorate-III, Division of Licensing Project Management (DLPM), Office of Nuclear Reactor Regulation (NRR); Ledyard (Tad) Marsh, Acting Deputy Director, DLPM, NRR; John Stang, Senior Project Manager, DLPM, NRR; and Om Chopra, Senior Electrical Engineer, Electrical and Instrumentation and Controls Branch, Division of Engineering, NRR.

Your staff requested enforcement discretion to preclude a required entry into Mode 3 (Hot Standby) by 9:45 p.m. for Unit 1 or 9:59 p.m. for Unit 2 on June 12, 2002. (All times discussed in this letter refer to Eastern Daylight Time). To accomplish this, you requested that the 2-hour allowed action time for TS 3.0.5 for both units be extended by approximately 10 hours to 1:45 a.m. on June 13, 2002, to accomplish restoration of the Unit 2 East Essential Service Water (ESW) pump to an operable status. With this extended allowed outage time, Unit 1 and Unit 2 would have been required to enter Mode 3 by 7:45 a.m. and 7:59 a.m. on June 13, 2002, respectively.

Technical Specification 3.0.5 states that “When a system, sub-system, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable LCO [Limiting Condition for Operation], provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), sub-system(s), train(s), component(s), and device(s), are OPERABLE, or likewise satisfy the requirements of this specification.

Unless both conditions (1) and (2) are satisfied, within 2 hours, actions shall be initiated to place the unit in a MODE in which the applicable LCO does not apply by placing it as applicable in:

- 1) At least HOT STANDBY within the next 6 hours,
- 2) At least HOT SHUTDOWN within the following 6 hours, and
- 3) At least COLD SHUTDOWN within the subsequent 24 hours.

This specification is not applicable in MODES 5 and 6.”

The Unit 2 East Essential Service Water (ESW) pump was out of service for planned maintenance to replace the pump beginning on June 11, 2002. Unit 2 TS 3.7.4.1, Action a, states that “When Unit 2 is in Modes 1, 2, 3, and 4: With only one ESW water loop OPERABLE, restore at least two loops to operable status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.” Your schedule reflected that the pump would have been replaced and restored to OPERABLE status within the allowed outage time for the Unit 2 East ESW pump.

Because the ESW crosstie valves were open between the units, the Unit 1 West ESW pump was also inoperable in accordance with Unit 2 TS 3.7.4.1, Action b.1, which states that “When Unit 1 is in MODES 1, 2, 3 and 4: With any Unit 2 essential service water pump not OPERABLE, within 1 hour close at least one crosstie valve on the associated header or have Unit 1 enter ACTION a for Unit 1 Specification 3.7.4.1 for the Unit 1 essential service water pump sharing the same header with the inoperable Unit 2 essential service water pump.” The ESW crosstie valves were maintained open to preclude depressurizing the Unit 2 East ESW header thereby rendering the Unit 1 West ESW train inoperable.

On June 12, 2002, at 1:45 p.m., the “BC” 34.5 kilovolt (kV) circuit breaker opened and a trouble alarm for the TR101CD reserve auxiliary transformer was received in the control room. This was caused by an explosion in the 345 kV switchyard and oil fire in the “L” switchyard output feeder breaker. As a result, the 34.5 kV TR4 reserve feed transformer was rendered inoperable, affecting the CD bus of reserve feed. This resulted in a loss of the preferred offsite power source to the Unit 1 East ESW pump. Since the Unit 1 West ESW Pump had previously been declared inoperable, Unit 1, therefore, entered TS 3.0.5 at 1:45 p.m. Due to the fire, an Alert was declared in accordance with the D. C. Cook Emergency Plan.

Additionally, on June 12, 2002, at 1:59 p.m., protective switching by the system load dispatcher resulted in the 34.5 kV TR5 reserve feed transformer being de-energized, affecting the AB bus

of reserve feed. The load dispatcher directed these actions to protect personnel who had been working in the switchyard. This resulted in a loss of the preferred offsite power source to the Unit 2 West ESW pump. Unit 2, therefore, entered TS 3.0.5 at 1:59 p.m.

On June 12, 2002, at 4:47 p.m., reserve feed power was restored through the 34.5 kV TR5 reserve transformer. However, the voltage output from the TR5 reserve transformer was below the acceptable range required for operability. Additionally, the D.C. Cook switchyard and the local area grids were in a degraded materiel condition because the explosion and oil fire in the switchyard resulted in the opening of five of the six tie-lines in the 345 kV switchyard.

In this degraded condition, taking both Unit 1 and Unit 2 off line could have changed the electrical load flow patterns on the grid and increased the probability of grid instability and the likelihood of a loss of offsite power. Further, taking both units off line would have resulted in the unit loads being transferred to the TR5 reserve transformer, further increasing the probability of a loss of power from this source due to its low voltage.

Compliance with the action time stated in TS 3.0.5 required that Unit 1 and Unit 2 be in Mode 3 by 9:45 p.m. and 9:59 p.m., respectively. Your staff believed that the increased likelihood of a loss of offsite power from a unit shutdown, and the ensuing transient, presented a greater risk to the health and safety of the public than continued plant operation.

Your staff requested that a Notice of Enforcement Discretion (NOED) be issued pursuant to the NRC's policy regarding exercise of discretion for an operating facility, set out in Section VII.C, of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. Your staff requested enforcement discretion to preclude a required entry into Mode 3 by 9:45 p.m. for Unit 1 or 9:59 p.m. for Unit 2 on June 12, 2002. To accomplish this, you requested that the 2-hour allowed action time for TS 3.0.5 for both units be extended by approximately 10 hours to 1:45 a.m. on June 13, 2002, to restore the Unit 2 East Essential Service Water pump to an operable status.

This letter documents our telephone conversation on June 12, 2002. Regional enforcement discretion was verbally granted at 9:15 p.m. on June 12, 2002. Unit 1 exited from TS 3.0.5 at 9:23 p.m., when the ESW crosstie valves between the Unit 2 East ESW header and the Unit 1 West ESW header were closed. Subsequently, at 9:57 p.m. on April 12, 2002, your staff restored the Unit 2 East ESW pump to an operable status and Unit 2 exited from TS 3.0.5 at that time.

Your staff requested this NOED after consideration of the safety significance and potential consequences of such an action. Your staff determined that extending the 2-hour allowed action time for TS 3.0.5 by approximately 10 hours to 1:45 a.m. on June 13, 2002, to restore the Unit 2 East ESW pump to an operable status, would allow for the plant to remain at power and would not result in an undue risk to the health and safety of the public. The conclusion was based on risk insights that qualitatively indicated no net increase in risk related to operating Unit 1 and Unit 2 for an additional 10 hours with the Unit 2 East ESW pump and the preferred reserve feed offsite power inoperable.

As for compensatory measures, during the time that the Unit 2 East ESW pump was inoperable, your staff committed to (1) not energize transformer TR4 until the Unit 2 East ESW pump was returned to service; (2) remain in the Alert status until TS 3.0.5 LCO was exited; (3) guard the Unit 1 and Unit 2 emergency diesel generators and the 69 kV alternate offsite power source; and (4) have present in the switchyard a senior reactor operator for all switchyard recovery actions.

The NRC's basis for this discretion considered: (1) the availability of the redundant ESW Train in both units; (2) the availability of electrical power through the Unit Auxiliary Transformers in both units; (3) the compensatory measures to reduce the probability of a plant transient while ensuring the availability of other safety related equipment; and (4) the qualitative risk assessment of the condition which indicated that the risk associated with increasing the allowed outage time an additional 10 hours for a total of 12 hours was lower than the risk associated with performing a plant shutdown.

Although the NRC does not have a plant specific shutdown risk analysis, we did perform a qualitative evaluation of this issue. The NRC determined that the risk of continued operation with your compensatory measures for the additional 10 hour period of the NOED did not result in an increased risk over shutting down both units with the Unit 1 West and Unit 2 East ESW headers inoperable, with the preferred reserve offsite power source for both units inoperable, and with taking both units' main generators offline. The basis of our decision was that there was no net increase in risk associated with extending the allowed outage time for TS 3.0.5 from 2 hours to a total of 12 hours. Based on this qualitative evaluation the NRC accepted your staff's safety rationale.

Regarding information provided to the NRC during our telephone conversation on June 12, 2002, we understood that the only other safety-related equipment out of service was the power range neutron flux channel N-41 for Unit 1. In your written request dated June 14, 2002, you acknowledge that restoration of power range neutron flux channel N-41 was actually performed at 4:05 p.m. on June 12, 2002, and that this information was not known to your staff's participants of the conversation when the statement was made. We agree that this information does not impact any of the information relied on when the oral NOED was granted. With the exception of this item, the NRC staff determined that your verbal and written NOED requests were consistent.

Based on the above considerations, the NRC staff concluded that Criterion B.2.1.1.a and the applicable criteria in Section C.4 to NRC Manual Chapter 9900, "Technical Guidance, Operations - Notices of Enforcement Discretion" were met. Criterion B.2.1.1.a states that for an operating plant, the NOED is intended to avoid unnecessary transients as a result of compliance with the license condition and, thus, minimize potential safety consequences and operational risks.

On the basis of the NRC staff's evaluation of your request, we have concluded that issuance of this NOED is consistent with the Enforcement Policy and staff guidance, and had no adverse impact on public health and safety. Therefore, we exercised discretion at 9:15 p.m. on June 12, 2002, not to enforce compliance with TS 3.0.5 for entry into Mode 3 by 9:45 p.m. for Unit 1 or 9:59 p.m. for Unit 2 on June 12, 2002, until 1:45 a.m. for both units on June 13, 2002.

As stated in the Enforcement Policy, action may be taken, to the extent that violations were involved, for the root cause that led to the noncompliance for which this NOED was necessary.

Sincerely,

*/RA/*

Geoffrey E. Grant, Director  
Division of Reactor Projects

Docket Nos. 50-315; 50-316  
License Nos. DPR-58; DPR-74

cc: J. Pollock, Site Vice President  
M. Finissi, Plant Manager  
M. Rencheck, Vice President, Strategic Business Improvements  
R. Whale, Michigan Public Service Commission  
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