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INDIANA MICHIGAN POWER

April 8, 2002

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Docket No: 50-316

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Unit 2
REQUEST FOR NOTICE OF ENFORCEMENT DISCRETION
FOR THE UNIT 2 AB STATION BATTERY

Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant Unit 2 (DPR-74), requests Regional Enforcement Discretion from compliance with Limiting Condition for Operation (LCO) Action "b" in Technical Specification (TS) 3.8.2.3, "Electrical Power Systems – D.C. Distribution." TS 3.8.2.3, LCO Action "b" requires that with one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

On April 3, 2002, during the performance of the Unit 2 AB station battery weekly TS surveillance, cracks were discovered on the top covers of three cells. A subsequent review of the surveillance test results on April 4, 2002, determined the cracks to be "abnormal deterioration" in accordance with TS 4.8.2.3.2.c.1. The TS states that no visual indications of physical damage or abnormal deterioration shall be present on the battery cells, cell plates and battery rack. As such, the Unit 2 AB battery was declared inoperable on April 4, 2002, at 1812 hours. Although the cracking is considered abnormal deterioration, it does not impact the functionality of the Unit 2 AB station battery.

I&M requested an extension of the allowed outage time by an additional 11 hours to replace the three affected Unit 2 AB station battery cells, and complete all necessary post maintenance testing activities by 0712 hours on April 5, 2002. This request was verbally transmitted to members of the Nuclear Regulatory

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Commission (NRC) staff on April 4, 2002, at 2235 hours, with subsequent approval being verbally granted at 0020 hours on April 5, 2002.

The replacement and post-maintenance testing were completed and the Unit 2 AB station battery was declared operable at 0755 hours on April 5, 2002.

The attachment to this letter provides the information included in NRC Inspection Manual Chapter 9900, "Technical Guidance, Operations, Notices Of Enforcement Discretion," dated November 2, 2001.

Copies of this letter and its attachments are being transmitted to the Michigan Public Service Commission and Michigan Department of Environmental Quality, in accordance with the requirements of 10 CFR 50.91.

There are no new commitments made in this submittal. Should you have any questions, please contact Mr. Gordon P Arent, Manager of Regulatory Affairs, at (616) 697-5553.

Sincerely,

J. E. Pollock
Site Vice President

/dmb

Attachment

c: K. D. Curry
J. E. Dyer
MDEQ - DW & RPD
NRC Resident Inspector
R. Whale

AFFIRMATION

I, J. E. Pollock, being duly sworn, state that I am Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

American Electric Power Service Corporation

J. E. Pollock
Site Vice President

DANIELLE M. SCHRADER
Notary Public, Berrien County, MI
My Commission Expires Apr 4, 2004

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 8 DAY OF April, 2002

Danielle M. Schrader
Notary Public

My Commission Expires Apr. 4, 2004

bc: G. P. Arent
P. B. Cowan, w/o attachment
R. W. Gaston, w/o attachment
S. A. Greenlee
S. B. Haggerty
D. W. Jenkins, w/o attachment
M. W. Rencheck, w/o attachment
J. F. Stang, Jr., - NRC Washington, DC
T. R. Stephens

WRITTEN REQUEST FOR A NOTICE OF ENFORCEMENT DISCRETION

1. TECHNICAL SPECIFICATION OR OTHER LICENSE CONDITION THAT WILL BE VIOLATED

Technical Specification (TS) 3.8.2.3, Limiting Condition for Operation (LCO) Action "b," will be violated for Unit 2.

TS 3.8.2.3, LCO Action "b," requires that with one 250-volt D.C. battery and/or charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

2. CIRCUMSTANCES SURROUNDING THE SITUATION, INCLUDING APPARENT ROOT CAUSES, THE NEED FOR PROMPT ACTION AND RELEVANT HISTORICAL EVENTS

TS Surveillance 4.8.2.3.2.c.1 states at least once per 18 months, verify that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

On December 13, 2001, during performance of the 92-day TS 4.8.2.3.2 surveillance requirement for the Unit 2 AB station battery, it was noted that the sealing material was breaking away from the positive post on the inside of 23 of 116 battery cells. Discussions with the battery vendor concluded that the breaking away of the seal ring was caused by corrosion of the sacrificial lead ring, to which the positive battery post is bonded. At the time, the condition was not considered abnormal deterioration because the lead ring is designed to corrode in order to protect the positive post from corrosion.

Destructive testing of one of the affected battery cells was performed by the vendor in February 2002. The failure analysis report published in March 2002 concluded that the accelerated corrosion was caused by the failure of the coating between the lead ring and the rubber sealing ring. The coating failure was attributed to a misapplication of the coating, and/or damage to the coating during the burning of the lead ring to the positive post. The report also concluded that the corrosion could build up, potentially causing the battery covers to crack. However, the vendor concluded that this condition was considered a maintenance issue rather than a battery performance issue, and that a long-term solution would be to replace those cells affected by the coating failure.

On April 3, 2002, during the performance of the weekly TS surveillance, cracks were discovered on the top cover of three cells (of the 23 previously identified in December 2001) on the Unit 2 AB station battery. These cracks were considered "abnormal deterioration" in accordance with

TS 4.8.2.3.2.c.1, and the Unit 2 AB battery was declared inoperable at 1812 hours on April 4, 2002. This cracking is consistent with the results of the March 2002 failure analysis report which stated that cracking of the top cover was likely in those cells displaying coating failure. The battery vendor confirmed that the cracking was abnormal degradation, but stated that it would not impact the functionality of the affected cells. The plastic battery cell cover does not support the battery plates, and is not responsible for the separation of the positive form from the negative plates. In addition, the noted cracks were small enough that existing plant hydrogen safety controls were considered adequate.

A review of current TS surveillance test results for the Unit 2 AB station battery found no indication of degrading electrical performance.

3. SAFETY BASIS FOR THE REQUEST, INCLUDING AN EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED COURSE OF ACTION, INCLUDING AT LEAST A QUALITATIVE RISK ASSESSMENT USING BOTH RISK INSIGHTS AND INFORMED JUDGEMENTS AS APPROPRIATE

The 250-volt AB and CD station battery systems provide a reliable source of continuous direct current (dc) power for supply and control of plant loads such as switchgear and annunciator control circuits, static inverters, valve control centers, emergency lighting and motor control centers. The battery system consists of two separately located sets of 116 lead acid cells. Each cell is of the sealed type, assembled in a shock absorbing, clear plastic container, with covers bonded in place to form a leak-proof seal. The design duty cycles of these batteries are composite load profiles resulting from the combination of the three-hour loss of coolant accident/loss of offsite power battery load profiles and the four-hour station blackout (SBO) battery load profiles.

Safety Basis/Risk Impact:

This Notice of Enforcement Discretion (NOED) request has been evaluated from a probabilistic risk perspective. This evaluation determined that the risk associated with maintaining the plant at power for a total of 13 hours with the Unit 2 AB station battery inoperable is lower than the risk associated with performing a reactor shutdown.

An evaluation has been performed using the updated 2001 version of the Donald C. Cook Nuclear Plant probabilistic risk assessment (PRA) model using Safety Monitor™. The evaluation was performed using a zero test and maintenance base case version of the PRA model and assumed that the Unit 2 AB station battery was unavailable. No other equipment that would have an effect on risk was out of service.

The results of the PRA model indicate an increase in the core damage frequency (CDF) of 1.39E-06 per day, and an increase in large early release frequency (LERF) of 1.74E-07 per day over the Safety Monitor™ base case model results (CDF and LERF for the base case are 3.82E-05 and 4.32E-06, respectively). The change in CDF and the change in LERF were then used to estimate an allowed outage time (AOT) in accordance with Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis." The AOT for the Unit 2 AB station battery was determined to be 17 hours based on the change in CDF. However, the AOT based on the change in LERF was determined to be slightly greater than 13 hours. As such, I&M's request for extending the AOT to 13 hours is appropriate.

The increase in CDF was also compared to the increase in the conditional core damage probability (CCDP) associated with a reactor shutdown. The increase in the CCDP associated with a reactor shutdown was determined to be 5.13E-06 (based on a Unit 2 CDF of 4.87E-05 per year, a percent contribution from transients with and without power conversion of 13.7 percent, and a transient event frequency of 1.3 transients per year). The results concluded that there is no net increase in risk associated with maintaining Unit 2 at power for a total of 13 hours with the Unit 2 AB station battery inoperable (1.39E-06 versus 5.13E-06 for a reactor shutdown).

The increase in CDF is dominated by the risk from events initiated by a loss of the Unit 2 250-volt dc train, accompanied by a successful cooldown of the reactor coolant system after an SBO and a common cause failure, leading to the 4,160-volt alternating current bus failing. However, the assumption that the Unit 2 AB station battery had failed is conservative since the functionality of the battery is not affected by the cracked cell covers. To facilitate replacement of the affected cell, three temporary cells are jumpered across the cell being replaced. The configuration and number of cells used during this process maintains the overall battery bank capacity and terminal voltage. However, the Unit 2 AB station battery will be declared inoperable while the three cells are being replaced since the temporary configuration is not seismically qualified.

Based on the analysis above, there is not net increase in risk associated with extending the AOT of the Unit 2 AB station battery from 2 hours to a total of 13 hours.

4. JUSTIFICATION FOR THE DURATION OF THE NONCOMPLIANCE

Indiana Michigan Power Company (I&M) proposed to extend the 2-hour AOT for the Unit 2 AB station battery by 11 hours. With enforcement discretion granted at 0020 hours on April 5, 2002, Unit 2 avoided the unnecessary transient of a reactor shutdown. The replacement and post-maintenance testing was completed and the Unit 2 AB station battery was declared operable at 0755 hours on April 5, 2002.

5. BASIS FOR CONCLUSION THAT THE NONCOMPLIANCE WILL NOT BE OF POTENTIAL DETRIMENT TO THE PUBLIC HEALTH AND SAFETY AND THAT NO SIGNIFICANT HAZARD CONSIDERATION IS INVOLVED

I&M has evaluated this request for enforcement discretion against the criteria set forth in 10 CFR 50.92 and concludes that the request involves no significant hazards consideration. The evaluation is provided below.

1. Does the change involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated?

The requested action does not physically alter any plant structures, systems, or components and does not affect or create new accident initiators or precursors. The AOT for a component is not an accident initiator; therefore, there is no effect on probability of accidents previously evaluated.

Extending the allowed 2-hour AOT by 11 hours does not significantly increase the consequences of an accident since the redundant Unit 2 CD station battery and both battery chargers will remain operable and capable of supplying the required DC bus loads. In addition, although the Unit 2 AB station battery will be slightly degraded during cell replacement, it remains functional. To facilitate replacement of the affected cells, three temporary cells were jumpered across the cell being replaced. This temporary configuration maintains the overall battery bank capacity and terminal voltage. However, the temporary configuration is not seismically qualified.

Therefore, the probability of occurrence or the consequences of accidents related to or dependent upon the station battery will remain unaffected.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The requested action does not physically alter any structures, systems, or components, and does not affect or create new accident initiators or precursors. The accident analysis assumptions and results are unchanged. No new failures or interactions have been created.

Extending the 2-hour AOT by 11 hours does not introduce new failure modes or mechanisms associated with plant operation for an extended period because adequate battery capacity will exist with adequate margin to supply the loads on the DC bus if required. Furthermore, the additional 11-hour period associated with the restoration to operability of the Unit 2 AB station battery would not create a new accident type. Therefore, the requested action does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the change involve a significant reduction in a margin of safety?

The applicable margin of safety is the period of time that the Unit 2 AB station battery is inoperable. I&M has determined that the risk resulting from extending the 2-hour AOT by 11 hours is minimal. Although the proposed action deviates from a requirement in TS 3.8.2.3, it does not affect any safety limits, other operational parameters, or setpoints in the TS, nor does it affect any margins assumed in the accident analyses. The redundant Unit 2 CD station battery continues to be operable to perform its required design function. Therefore, the proposed action does not significantly reduce the margin of safety.

6. BASIS FOR CONCLUSION THAT THE NONCOMPLIANCE WILL NOT INVOLVE ADVERSE CONSEQUENCES TO THE ENVIRONMENT

I&M has evaluated the requested enforcement discretion request against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. I&M has determined that the requested action meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9). This determination is based on the fact that the proposed action is being requested as enforcement discretion to a license issued pursuant to 10 CFR 50, and that the change involves no significant hazards considerations.

Although the proposed action involves noncompliance with the requirements of an LCO:

(i) The proposed action involves no significant hazards consideration.

(ii) There is no significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, since the proposed action does not affect the generation of any radioactive effluent nor does it affect any of the permitted release paths.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure. The action proposed in this request for enforcement discretion will not significantly affect plant radiation levels, and, therefore, does not significantly affect dose rates and occupational exposure.

Accordingly, the proposed action meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

7. PROPOSED COMPENSATORY MEASURES

During the period that the Unit 2 AB station battery is inoperable for replacement of the three affected cells, safety-related or other important secondary equipment will not be removed from service until the Unit 2 AB station battery is operable.

8. PLANT OPERATIONS REVIEW COMMITTEE APPROVAL

This request has been reviewed and approved by the Plant Operations Review Committee.

9. BASIS FOR CONCLUDING THAT THE NOED CRITERIA OF MANUAL CHAPTER 9900 ARE SATISFIED

I&M has evaluated the requested enforcement discretion against the criteria specified in Section B.2.1.1.a of NRC Inspection Manual Chapter 9900. This section states that 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.

I&M considers that the current condition satisfies this criterion. Compliance with Unit 2 TS 3.8.2.3, LCO Action "b," could initiate an undesirable transient by requiring Unit 2 to shut down on April 5, 2002. Extending the AOT from 2 hours to 13 hours would allow continued Unit 2 operation for only that additional time needed to perform the required battery cell replacement and testing of the Unit 2 AB station battery. Approval of the NOED will preclude the potential to challenge the reactor protection system if an unanticipated transient occurred during the shutdown. No corresponding health and safety benefit is gained by requiring a plant shutdown. Based on the above, the criteria are satisfied.

10. MARKED-UP T/S PAGES IDENTIFYING PROPOSED CHANGES (IF APPLICABLE)

No TS changes are required. A license amendment is not practical because the plant will return to compliance with the existing license in a short period of time.

11. DISCUSSION OF CIRCUMSTANCES INVOLVING SEVERE WEATHER OR OTHER NATURAL EVENTS

The proposed enforcement discretion does not involve severe weather or other natural events.