



Indiana Michigan Power
Cook Nuclear Plant
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Bridgman, MI 49106
AEP.com

July 25, 2007

AEP:NRC:7331-04
10 CFR 50.90

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
Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure
Request for Additional Information (TAC No. MD3161)

- References:
1. Letter from J. N. Jensen, Indiana Michigan Power Company (I&M), to Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure," AEP:NRC:6331-02, dated September 15, 2006 (ML062690500).
 2. Electronic Transmission from P. S. Tam, NRC, to M. K. Scarpello, R. G. Vasey, and S. D. Simpson, I&M, "D.C. Cook: Additional Draft RAI re. Proposed Amendment (TAC MD3161)," dated January 11, 2007 (ML070110441).
 3. Letter from J. N. Jensen, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure, Request for Additional Information (TAC No. MD3161)," AEP:NRC:7331, dated April 20, 2007 (ML071220081).
 4. Letter from P. S. Tam, NRC, to M. K. Nazar, "D. C. Cook Nuclear Plant, Unit 2 (DCCNP-2) - Request for Additional Information Re: Proposed Amendment Involving Reactor Trip on Low Turbine Oil Pressure (TAC No. MD3161)," dated June 28, 2007 (ML071720219).


In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the allowable value of the reactor trip on low turbine oil pressure function to greater than or equal to (\geq) 750 pounds per square inch gauge (psig) from its current value of ≥ 57 psig because of a design change that replaces the present turbine control system with a control system that operates at a higher pressure. Reference 2 transmitted the Nuclear Regulatory Commission's (NRC's)

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requests for additional information (RAIs) regarding the license amendment request. In Reference 3, I&M responded to the RAIs. In Reference 4, the NRC transmitted additional RAIs. The attachment to this letter provides I&M's response to the additional RAIs.

There are no new commitments made in this letter. Should you have any questions, please contact Ms. Susan D. Simpson, Regulatory Affairs Manager, at (269) 466-2428.

Sincerely,



Joseph N. Jensen
Site Vice President

RV/rdw

Attachment: Reactor Trip on Low Turbine Control Oil Pressure License Amendment Request,
Request for Additional Information

c: J. L. Caldwell, NRC Region III
K. D. Curry, AEP Ft. Wayne, w/o attachment
J. T. King, MPSC
MDEQ – WHMD/RPMWS
NRC Resident Inspector
P. S. Tam, NRC Washington, DC

AFFIRMATION

I, Joseph N. Jensen, being duly sworn, state that I am Site 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.

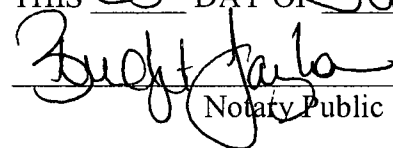
Indiana Michigan Power Company



Joseph N. Jensen
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 25th DAY OF July, 2007



Notary Public

My Commission Expires 6/10/2013

Attachment to AEP:NRC:7331-04

Reactor Trip on Low Turbine Control Oil Pressure License Amendment Request
Request for Additional Information

In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the allowable value of the reactor trip on low turbine oil pressure function to greater than or equal to (\geq) 750 pounds per square inch gauge (psig) from its current value of ≥ 57 psig because of a design change that replaces the present turbine control system with a control system that operates at a higher pressure.

Reference 2 transmitted the Nuclear Regulatory Commission's (NRC's) requests for additional information (RAIs) regarding the license amendment request. In Reference 3, I&M responded to the RAIs. In Reference 4, the NRC transmitted additional RAIs. The RAIs transmitted by Reference 4 are focused on details involved in the calibration of the pressure switches that would initiate a reactor trip on low turbine oil pressure. It should be noted that the turbine control system is a non-safety-related system, and the reactor trip on low turbine oil pressure is not credited in any safety analyses. Thus, there is no safety analysis limit associated with the trip setpoint.

The reactor trip on low turbine oil pressure is an anticipatory trip that actuates shortly after a turbine trip to minimize the reactor pressure/temperature transient for a loss-of-load accident. The allowable value for the reactor trip on low turbine oil pressure has been chosen such that the actual trip setpoint, which is a nominal value, will be approximately one-half the control system's nominal operating pressure (the current Unit 2 allowable value is one-half the nominal operating pressure). The control system does not experience large pressure transients during normal operation, and the selection of an allowable value slightly less than one-half of the nominal operating pressure allows setting the trip setpoint at a value that prevents spurious trips that could result in challenges to safety systems.

I&M's response to the Reference 4 RAIs is provided below.

NRC Request 1

The I&M response to NRC Request 2 states that out-of-tolerance is defined as "exceeding the band established around a desired value..." However, I&M has not defined how this band is established. Provide information that describes the uncertainty elements that are included in the out-of-tolerance band, the basis for their inclusion, and how the tolerance band is calculated.

I&M Response

The as-left tolerance band, or calibration tolerance for the reactor trip on low turbine control pressure (a pressure switch calibration), is typically set equal to the manufacturer's reference accuracy. This is common industry practice and requires that the component is left

consistent with the manufacturer's performance expectation. At the Donald C. Cook Nuclear Plant (CNP), this use of the manufacturer's reference accuracy is controlled by an instrument setpoint uncertainty engineering guide. The as-found tolerance (AFT) band, or the limit at which the pressure switch is determined to be out-of-tolerance, accounts for the expected deviation from the as-left condition with time. The AFT is impacted by drift, maintenance and test equipment (MTE) accuracy, and calibration accuracy.

$$\text{AFT} = \text{square root of } (\text{DR}^2 + (\text{MTE} + \text{CA})^2)$$

where: DR = drift that may include both time dependant and non-time dependent effects
MTE = maintenance and test equipment accuracy
CA = calibration accuracy (tolerance), which typically equals the manufacturer's reference accuracy

NRC Request 2

The I&M response to NRC Request 2 (first paragraph) discusses actions for an as-found condition that exceeds the calibration tolerance. However, I&M has not defined how the calibration tolerance is determined. Provide the information about the uncertainties included in the calibration tolerance band, basis for their inclusion, and how the band is calculated.

I&M Response

The calibration tolerance is typically set equal to the manufacturer's reference accuracy as described in the CNP instrument setpoint uncertainty engineering guide. The manufacturer's reference accuracy represents the manufacturer's expectation of component performance.

NRC Request 3

The I&M response to NRC Request 2 (on page 3 [Reference 3], first full paragraph) provides an example of Unit 1 calibration tolerance, but did not state that the same value has been used for Unit 2 also, and how it was determined. Provide the calibration tolerance band for Unit 2.

I&M Response

The calibration tolerance for the Unit 1 Turbine Low Fluid Oil Pressure switches is based on plus or minus (\pm) 0.5 percent (%) setpoint, which is the CNP generic pressure switch setpoint tolerance when no specific performance criteria are available from the vendor. As the pressure switch manufacturer and model number are expected to be the same for Unit 2 and

the pressure setpoint is also expected to be the same, the calibration tolerance is calculated to be 0.5% of 800 psig, or ± 4 psig.

NRC Request 4

The I&M response to NRC Request 2 (on page 3 [Reference 3], first full paragraph) states that the out-of-tolerance evaluation "may include changes to the acceptance criteria, changes to the switch design or calibration method (including the setpoint value), or the replacement of poorly performing components," but did not provide any detail on how the evaluation results are determined, who makes that determination, and how soon this evaluation is to be completed. Provide the missing information.

I&M Response

These pressure switches have been determined to monitor a "critical parameter" because the allowable value for the control oil pressure is specified in CNP's technical specifications (one of the criteria for being included in the "critical parameters" list). When a component on the "critical parameters" list is to be calibrated, CNP's control of "critical parameters" procedure requires the initiation of a condition report if the device is found damaged or out of tolerance (OOT), i.e., the AFT has been exceeded. This condition report is evaluated in accordance with the control of critical parameters procedure and requires an engineering evaluation using a form provided in the procedure. On the first and any subsequent occurrence of an OOT, the assigned engineer must address potential operability or Maintenance Rule concerns. On two consecutive OOT occurrences, procedural requirements state that the evaluation must also include any explicit disposition by stating one of the following:

- The component needs to be repaired
- The component needs to be replaced
- Explicit justification why nothing is wrong with the component

This evaluation is reviewed and documented in the close-out of the condition report. The time to close the condition report is controlled by CNP's corrective action process.

References

1. Letter from J. N. Jensen, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Unit 2, Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure," AEP:NRC:6331-02, dated September 15, 2006 (ML062690500).
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