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A unit of American Electric Power

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

July 6, 2007

AEP:NRC:7331-02
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. Letter from P. S. Tam, NRC, to M. K. Nazar, I&M, "D. C. Cook Nuclear Plant Unit 2 (DCCNP-2) – Request for Additional Information Regarding Proposed Amendment Involving Turbine Control System Fluid Oil Pressure, (TAC No. MD3161)," dated April 20, 2007 (ML071220081).

In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the Donald C. Cook Nuclear Plant Technical Specification 3.3.1, Table 3.3.1-1, Function 16.a Allowable Value for 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 requests for additional information (RAIs) regarding the license amendment request. The attachment to this letter provides I&M's response to the RAIs.

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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

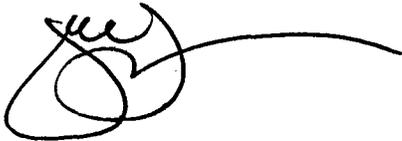
Attachment: Donald C. Cook Nuclear Plant Unit 2, License Amendment Request to Increase Reactor Trip on Low Turbine Control Oil Pressure Allowable Value, Request for Additional Information

c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, 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 document 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

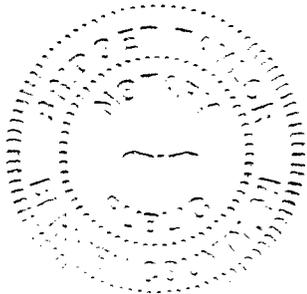
SWORN TO AND SUBSCRIBED BEFORE ME

THIS 6th DAY OF July, 2007



Notary Public

My Commission Expires 6/10/2013



Attachment to AEP:NRC:7331-02

Donald C. Cook Nuclear Plant Unit 2
License Amendment Request to Increase Reactor Trip
on Low Turbine Control Oil Pressure Allowable Value
Request for Additional Information

In Reference 1, Indiana Michigan Power Company (I&M) submitted a license amendment request to revise the Donald C. Cook Nuclear Plant Technical Specification (TS) 3.3.1, Table 3.3.1-1, Function 16.a Allowable Value for 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.

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. 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.

Reference 2 transmitted the Nuclear Regulatory Commission's (NRC's) request for additional information regarding the license amendment request. The requested information is provided below.

NRC Request 1

As indicated in the licensee's submittal, the replacement of the turbine control system will increase the normal control oil fluid operating pressure from 114 psig to 1600 psig and will revise the allowable low fluid oil pressure value for turbine trip from greater than or equal to 57 psig to greater than or equal to 750 psig. Please provide the following information:

Request 1, Item 1

Discuss to what extent this change involves any associated piping design changes that are necessary to accommodate the increased pressure.

I&M Response to Request 1, Item 1

The design will replace all associated hydraulic piping from a new supply skid to all required components with new piping. The design will use schedule 80 stainless steel piping, which is capable of withstanding the 1600 psig system pressure, for supply piping and high pressure hose connections to the hydraulic actuators.

Request 1, Item 2

Discuss whether or not pipe failures associated with this change need to be considered due to the large increase in turbine oil operating pressure.

I&M Response to Request 1, Item 2

The electro hydraulic (EHC) piping contains hydraulic fluid, and a postulated break of these lines has not been assumed. There is no safety-related equipment that would be adversely impacted by a postulated break in the EHC piping. A pipe break in the hydraulic system would result in a hydraulic fluid spill in the turbine building and would trip the main turbine. However, the break would have little impact on the remainder of the facility. The pumping rate of the supply pumps is less than 50 gallons per minute with an open ended pipe at zero psig. The system operating temperature, approximately 120 degrees Fahrenheit, precludes any impacts due to thermal expansion or fluid vaporization.

Request 1, Item 3

[If piping failures need to be considered] Discuss to what extent any safety-related equipment needs to be protected from the effects of these postulated pipe failures.

I&M Response to Request 1, Item 3

No postulated pipe failures are associated with the design change (See response to Request 1, Item 2).

NRC Request 2

There is insufficient information in the application regarding the replacement of the existing mechanical-hydraulic control system for the main turbine and the east and west main feed-pump turbines with a Triconex TS3000 triple modular redundant control system. Please describe:

Request 2, Item 1

The system design and how it operates, and how oil pressure varies with time during normal plant operation and following a turbine trip.

I&M Response to Request 2, Item 1

The Triconex TS3000 system controls the operation of the main feedpump turbines and the main turbine, both of which are located in the turbine building. The hydraulic system, which provides motive force for the main feedpump turbine and main turbine valve actuators and trip blocks, contains three pressure switches that provide inputs to the reactor protection system. The circuitry associated with the pressure switches and the reactor protection system is independent of the control system.

The EHC is pressurized by a pump to a nominal steady state pressure of 1600 psig. There are no significant pressure transients associated with the EHC operation. Following a turbine trip, EHC header drain valves open, and the non-compressible hydraulic oil is drained from the header, and the control oil pressure drops below the proposed allowable value in milliseconds.

Request 2, Item 2

The basis for how the 750 psig trip set point was established to assure that spurious trips will not occur and safety functions will not be challenged, including uncertainty considerations.

I&M Response to Request 2, Item 2

The safety analyses do not credit the operation of this function for core protection. Thus, there is no associated analytical limit for the Low Fluid Oil Pressure allowable value.

The proposed TS Allowable Value (≥ 750 psig) represents a nominal value (approximately one-half of the nominal operating pressure) that ensures the operation of this anticipatory reactor trip function. The chosen TS Allowable Value includes consideration of the minimum required EHC pressure, the expected calibration tolerance and calibration frequency of the pressure switches, and the expected time-based (drift) pressure switch setpoint changes.

- 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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