INDIANA MICHIGAN POWER
A unit of American Electric Power

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

September 15, 2006

AEP:NRC:6331-02
10 CFR 50.90

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

Subject: Donald C. Cook Nuclear Plant Unit 2
Docket No. 50-316
Technical Specification Change for Reactor Trip on Low Turbine Oil Pressure

Reference: Letter from Joseph N. Jensen, Indiana Michigan Power Company, to Nuclear Regulatory Commission Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Docket Nos. 50-315 and 50-316, Technical Specification Change of Interlock for a Reactor Trip on Turbine Trip," AEP:NRC:6331, ML060760532, dated March 7, 2006.

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant Unit 2 proposes to amend Facility Operating License DPR-74. I&M proposes to modify Technical Specification (TS) 3.3.1, Table 3.3.1-1, Function 16.a, "Low Fluid Oil Pressure," to reflect a modification to the Unit 2 turbine control system that will be implemented during the Fall 2007 refueling outage. The change to the turbine control system will replace the current control system and it will increase the nominal control fluid oil operating pressure from 114 pounds per square inch gauge (psig) to 1600 psig. The control fluid oil pressure provides an input to the reactor protection system via three pressure switches connected to the control fluid header. Due to the change in the operating pressure, I&M is proposing a revision to the allowable low fluid oil pressure value from greater than or equal to ($\geq$) 57 psig to $\geq$ 750 psig.

Enclosure 1 provides an affirmation statement pertaining to this letter. Enclosure 2 provides I&M's evaluation of the proposed change. Attachment 1 provides the TS page marked to show the proposed change, and Attachment 2 provides the revised TS page with the proposed change incorporated.

The referenced letter impacts pages that are included in this submittal. I&M will coordinate changes to the pages with the Nuclear Regulatory Commission Project Manager to ensure proper TS page control when the associated license amendment requests are approved.

A001

I&M requests approval of the proposed amendment prior to September 1, 2007, to support the installation of the turbine control system change scheduled for the Unit 2 Cycle 17 (Fall 2007) refueling outage. Implementation of the amendment will be completed prior to entering Mode 1 following the Unit 2 Cycle 17 outage.

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 letter. Should you have any questions, please contact Ms. Susan D. Simpson, Regulatory Affairs Manager, at (269) 466-2428.

Sincerely,

Mark A. Peifer
Site Vice President

RV/rdw

Enclosures:

1. Affirmation
2. Indiana Michigan Power Company's Evaluation

Attachments:

1. Donald C. Cook Nuclear Plant Unit 2 Technical Specification Page Marked To Show Change
2. Donald C. Cook Nuclear Plant Unit 2 Technical Specification Page With the Proposed Change Incorporated

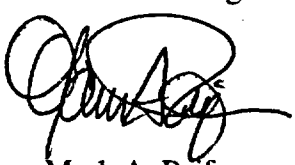
c: J. L. Caldwell, NRC Region III
K. D. Curry, Ft. Wayne AEP, w/o enclosures/attachments
J. T. King, MPSC
MDEQ – WHMD/RPMWS
NRC Resident Inspector
P. S. Tam, NRC Washington, DC

Enclosure 1 to AEP:NRC:6331-02

AFFIRMATION

I, Mark A. Peifer, 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



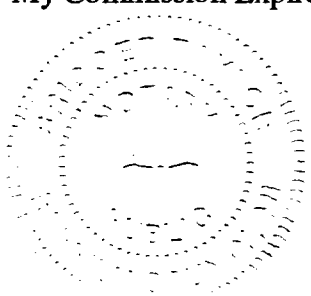
Mark A. Peifer
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 15 DAY OF September, 2006

Notary Public

My Commission Expires 6/10/2007



Enclosure 2 to AEP:NRC:6331-02

INDIANA MICHIGAN POWER COMPANY'S EVALUATION

1.0 DESCRIPTION

This letter is a request by Indiana Michigan Power Company (I&M) to amend Facility Operating License DPR-74 for Donald C. Cook Nuclear Plant (CNP) Unit 2. The proposed change would modify the Technical Specification (TS) allowable value for the low fluid oil pressure initiation of a reactor trip on turbine trip.

2.0 PROPOSED CHANGE

The proposed change would modify Unit 2 Technical Specification 3.3.1, Reactor Trip System Instrumentation, Table 3.3.1-1, Function 16.a, Turbine Trip - Low Fluid Oil Pressure, by increasing the allowable low fluid oil pressure from greater than or equal to ($\geq$) 57 pounds per square inch gauge (psig) to $\geq$ 750 psig.

No changes to TS Bases 3.3.1 are required to support the proposed change.

3.0 BACKGROUND

3.1 System Description

The CNP reactor protection system includes a reactor trip initiated by the turbine generator control system following a turbine generator trip. The Turbine Trip – Low Fluid Oil Pressure Reactor Trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip function acts to minimize the pressure/temperature transient on the reactor.

The Unit 2 turbine generator control system is a mechanical-hydraulic system containing three pressure switches that monitor the control fluid oil pressure. Following a turbine trip, header drain valves open, and the turbine control fluid header is rapidly depressurized. When the low pressure condition is sensed by two out of the three pressure switches a reactor trip is initiated.

The reactor trip on turbine generator trip is an anticipatory trip and the accident analyses do not credit this trip for any core protection function. Unit 2 is designed to withstand a complete loss of load and not sustain core damage or challenge the reactor coolant system (RCS) pressure limitations. Core protection is provided by the Pressurizer Pressure – High trip function, and RCS integrity is ensured by the pressurizer safety valves.

3.2 Reason for Requesting Amendment

During the Unit 2 Cycle 17 refueling outage, I&M will be replacing the entire Unit 2 mechanical-hydraulic control system for the main turbine and the east and west main feedpump turbines with a Triconex TS3000 Triple Modular Redundant Control System. The new control

system is a computer based programmable logic controller that will provide control and monitoring capabilities for the main turbine and the east and west main feedpump turbines. The turbine control replacement includes replacing the current control fluid system that has a nominal operating pressure of 114 psig with a new fluid system having a nominal operating pressure of 1600 psig. The proposed Unit 2 allowable value is based on the Unit 1 allowable value as the Unit 1 control fluid system currently has a nominal 1600 psig operating pressure.

4.0 TECHNICAL ANALYSIS

The present Unit 2 turbine control system is to be replaced with a new electronically controlled programmable logic control manufactured by Triconex. The turbine control system controls the speed of the turbine when the generator is not synchronized with the grid and controls the output of the unit when the turbine generator is synchronized with the grid.

The control fluid for the turbine control system will be provided by a skid-mounted hydraulic pump unit operating at 1600 psig pressure. Following a turbine trip, drain valves connected to the control fluid header open, the control fluid is drained from the piping, and the pressure rapidly decreases. The decreased control fluid pressure is sensed by pressure switches located in the control oil header, and when the decreased pressure is sensed by two out of three switches, a reactor trip is initiated. The reactor trip on turbine trip function is an anticipatory trip and, as identified in the referenced letter, the CNP Unit 2 Updated Final Safety Analysis Report analyses of record do not credit the direct reactor trip from turbine trip for the protection of fission product barriers.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed change reflects a design change to the turbine control system that increases the control oil pressure, necessitating a change to the value at which a low fluid oil pressure initiates a reactor trip. The turbine control oil pressure is an input to the reactor trip instrumentation, and the reactor trip is a response to an event that trips the turbine. A change in the nominal control oil pressure does not introduce any mechanisms that would increase the probability of an accident previously analyzed. The reactor trip on turbine trip function is

an anticipatory trip, and the safety analysis does not credit this trip for protecting the reactor core. Thus, the consequences of previously analyzed accidents are not impacted.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No.

   The control fluid oil pressure decreases in response to a turbine trip. The value at which the low control fluid oil initiates a reactor trip is not an accident initiator. The change in the value reflects the higher pressure of the turbine control system that will be installed during the Unit 2 Cycle 17 refueling outage.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

   Response: No.

   The change involves a parameter that initiates an anticipatory reactor trip following a turbine trip. The safety analyses do not credit this anticipatory trip for reactor core protection.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

10 CFR 50.36 (c) (2) (ii), stipulates that a technical specification limiting condition for operation must be established for each item meeting one or more of the following criteria:

1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The change to the allowable value for a reactor trip on turbine trip continues to meet this regulation. That is, the reactor trip function remains available as an anticipatory trip following the loss of heat removal capability of the secondary system to minimize the pressure/temperature transient on the reactor.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Nuclear Regulatory Commission's (NRC) regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health or safety of the public.

6.0 ENVIRONMENTAL CONSIDERATIONS

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 Reference

Letter from Joseph N. Jensen, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Docket Nos. 50-315 and 50-316, Technical Specification Change of Interlock for a Reactor Trip on Turbine Trip," AEP:NRC:6331, ML060760532, dated March 7, 2006.

Attachment 1 to AEP:NRC:6331-02

DONALD C. COOK NUCLEAR PLANT UNIT 2 TECHNICAL SPECIFICATION PAGE MARKED TO SHOW CHANGE

3.3.1-13

Table 3.3.1-1 (page 3 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
15. SG Water Level – Low (per SG)	1,2	2	D[f]	SR 3.3.1.1 SR 3.3.1.11 SR 3.3.1.13	≥ 25.0%
Coincident with Steam Flow/Feedwater Flow Mismatch (per SG)	1,2	2	D[f]	SR 3.3.1.1 SR 3.3.1.11 SR 3.3.1.13	≤ 1.56E6 lb/hr steam flow at RTP
16. Turbine Trip					
a. Low Fluid Oil Pressure	1[e]	3	D	SR 3.3.1.13 SR 3.3.1.18	≥ ~~57~~ 50 psig
b. Turbine Stop Valve Closure (per train)	1[e]	4	D	SR 3.3.1.13 SR 3.3.1.18	≥ 1% open
17. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	J	SR 3.3.1.6 SR 3.3.1.19	NA
18. Reactor Trip System Interlocks					
a. Intermediate Range Neutron Flux, P-6	2[d], 3[a], 4[a], 5[a]	2	L	SR 3.3.1.14 SR 3.3.1.16	≥ 6E-11 amp
b. Low Power Reactor Trips Block, P-7	1	1 per train	L	SR 3.3.1.5	NA
c. Power Range Neutron Flux, P-8	1	4	L	SR 3.3.1.14 SR 3.3.1.16	≤ 31% RTP
d. Power Range Neutron Flux, P-10	1,2	4	L	SR 3.3.1.14 SR 3.3.1.16	≥ 9% RTP and ≤ 11% RTP
e. Turbine First Stage Pressure, P-13	1	2	L	SR 3.3.1.1 SR 3.3.1.13 SR 3.3.1.16	≤ 51 psig

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Separate condition entry is allowed per SG for only 1 of the 4 total Reactor Trip System Instrumentation Function 15 channels inoperable on each SG (i.e., for only 1 of 2 SG Water Level – Low channels or 1 of 2 Steam Flow/Feedwater Flow Mismatch channels inoperable on each SG). Any combination of 2 or more inoperable Reactor Trip System Instrumentation Function 15 channels on any SG requires immediate entry into LCO 3.0.3.

Attachment 2 to AEP:NRC:6331-02

DONALD C. COOK NUCLEAR PLANT UNIT 2 TECHNICAL SPECIFICATION PAGE WITH THE PROPOSED CHANGE INCORPORATED

3.3.1-13

Table 3.3.1-1 (page 3 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
15. SG Water Level – Low (per SG)	1,2	2	D[f]	SR 3.3.1.1 SR 3.3.1.11 SR 3.3.1.13	≥ 25.0%
Coincident with Steam Flow/Feedwater Flow Mismatch (per SG)	1,2	2	D[f]	SR 3.3.1.1 SR 3.3.1.11 SR 3.3.1.13	≤ 1.56E6 lb/hr steam flow at RTP
16. Turbine Trip					
a. Low Fluid Oil Pressure	1[e]	3	D	SR 3.3.1.13 SR 3.3.1.18	≥ 750 psig
b. Turbine Stop Valve Closure (per train)	1[e]	4	D	SR 3.3.1.13 SR 3.3.1.18	≥ 1% open
17. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	J	SR 3.3.1.6 SR 3.3.1.19	NA
18. Reactor Trip System Interlocks					
a. Intermediate Range Neutron Flux, P-6	2[d], 3[a], 4[a], 5[a]	2	L	SR 3.3.1.14 SR 3.3.1.16	≥ 6E-11 amp
b. Low Power Reactor Trips Block, P-7	1	1 per train	L	SR 3.3.1.5	NA
c. Power Range Neutron Flux, P-8	1	4	L	SR 3.3.1.14 SR 3.3.1.16	≤ 31% RTP
d. Power Range Neutron Flux, P-10	1,2	4	L	SR 3.3.1.14 SR 3.3.1.16	≥ 9% RTP and ≤ 11% RTP
e. Turbine First Stage Pressure, P-13	1	2	L	SR 3.3.1.1 SR 3.3.1.13 SR 3.3.1.16	≤ 51 psig

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Separate condition entry is allowed per SG for only 1 of the 4 total Reactor Trip System Instrumentation Function 15 channels inoperable on each SG (i.e., for only 1 of 2 SG Water Level – Low channels or 1 of 2 Steam Flow/Feedwater Flow Mismatch channels inoperable on each SG). Any combination of 2 or more inoperable Reactor Trip System Instrumentation Function 15 channels on any SG requires immediate entry into LCO 3.0.3.