

July 31, 2015

AEP-NRC-2015-31  
10 CFR 50.55a

Docket Nos.: 50-315  
50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2  
10 CFR 50.55a Requests Associated with the Fifth Ten-Year Inservice  
Testing Interval

References:

1. Letter from D. P. Fadel, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant Units 1 and 2, Fourth 10-Year Interval Pump and Valve Inservice Testing Program," AEP:NRC-5055-14, dated December 28, 2005, Agencywide Documents Access and Management System (ADAMS) Accession No. ML060060110.
2. Letter from L. Raghavan, NRC, to M. K. Nazar, I&M, "D. C. Cook Nuclear Plant, Units 1 and 2 - Relief Requests for the Fourth 10-Year Pump and Valve Inservice Testing Program Interval (TAC Nos. MC9455 and MC9456)," dated June 28, 2006, ADAMS Accession No. ML061730175.

Pursuant to 10 CFR 50.55a(f)(5)(i), Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, requests U. S. Nuclear Regulatory Commission authorization or approval of the enclosed 10 CFR 50.55a requests associated with the Fifth Inservice Testing Interval for CNP.

Relief Request REL-PP1 is being submitted under the provisions of 10 CFR 50.55a(z)(1) as an alternative that provides an acceptable level of quality and safety. Relief Request REL-002 is being submitted under the provisions of 10 CFR 50.55a(f)(6)(i) because complying with the code requirements is impractical. The applicable 10 CFR 50.55a provision is identified in each relief request. Relief Requests REL-002 and REL-PP1 were previously approved for CNP's fourth 10-year test interval (References 1 and 2).

I&M requests approval of the relief requests prior to the start of the fifth 10-year test interval, which will begin July 1, 2016.

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This letter contains no new commitments. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager, at (269) 466-2649.

Sincerely,



Joel P. Gebbie  
Site Vice President

JMT/ams

Enclosures:

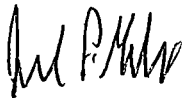
1. Relief Requests for Pump and Valve Inservice Test Program for Donald C. Cook Nuclear Plant Fifth Ten-Year Interval
- c: A. W. Dietrich, NRC Washington, D.C.  
J. T. King, MPSC  
MDEQ – RMD/RPS  
NRC Resident Inspector  
C. D. Pederson, NRC Region III  
A. J. Williamson, AEP Ft. Wayne, w/o enclosures

Enclosure 1 to AEP-NRC-2015-31

AFFIRMATION

I, Joel P. Gebbie, being duly sworn, state that I am the Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the U. S. 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



Joel P. Gebbie  
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 31 DAY OF July, 2015

  
Notary Public

My Commission Expires 04-04-2018

**DANIELLE BURGOYNE**  
Notary Public, State of Michigan  
County of Berrien  
My Commission Expires 04-04-2018  
Acting In the County of Berrien

**Enclosure 2 to AEP-NRC-2015-31**

**Relief Requests for Pump and Valve Inservice Test Program for Donald C. Cook Nuclear  
Plant Fifth Ten-Year Interval**

**REQUEST FOR RELIEF  
REL-PP1**

**Boric Acid Pump Vibration  
Requirements**

**Impractical Inservice Test Requirements in Accordance  
with 10CFR50.55a(z)(1) Granting of Relief Based on the Proposed Alternative  
Would Provide an Acceptable Level of Quality and Safety**

**1. American Society of Mechanical Engineers (ASME) Code Component(s) Affected**

1-PP-46-1	Boric Acid Storage Tanks Transfer Pump #1
1-PP-46-2	Boric Acid Storage Tanks Transfer Pump #2
2-PP-46-3	Boric Acid Storage Tanks Transfer Pump #3
2-PP-46-4	Boric Acid Storage Tanks Transfer Pump #4

**2. Applicable Code Edition and Addenda**

ASME Operation and Maintenance (OM) Code-2004 Edition, with Addenda through OMB Code-2006.

**3. Applicable Code Requirement(s)**

ISTB-3540(a) on centrifugal pumps, except vertical line shaft pumps, measurements shall be taken in a plane approximately perpendicular to the rotating shaft in two approximately orthogonal directions on each accessible pump-bearing housing. Measurement shall also be taken in the axial direction on each accessible pump thrust bearing housing.

**4. Reason for Request**

Two horizontal, centrifugal, two-speed pumps, with mechanical seals are available per unit. Although not required, one pump may be aligned to run continuously at low speed to provide recirculation of the boric acid system and the boric acid tank. The second pump can be aligned with the shared boric acid tank and is considered as a standby pump, with service being transferred as operation requires. This second pump is also used to intermittently circulate fluid through the shared tank. Automatic initiation of the reactor coolant makeup system will align the running pump for high speed operation to provide normal makeup of boric acid solution as required. Manual operation of the boric acid transfer pumps (i.e., starting an inactive pump) can also be used to provide reactor coolant makeup as necessary. For emergency boration, supplying of boric acid solution

to the suction of the charging pump can be accomplished by manually opening emergency boration flow control valves for either or both pumps. The transfer pumps also function to transfer boric acid solution from the batching tank to the boric acid tanks.

By design, the only accessible point for taking axial vibration measurements is the outboard motor bearing. It is unsafe to monitor the axial direction vibration on the inboard pump bearing due to the proximity of the rotating shaft, and there is no position in monitoring the outboard pump bearing housing because of the presence of heat tracing. Modifications to the coupling shield to allow access were attempted. However, the modified shield did not provide sufficient clearance to allow individuals performing the measurement to safely place their hands near the rotating shaft. Relief is requested pursuant to 10 CFR 50.55a(z)(1) based on proposed alternative providing an acceptable level of quality and safety.

**5. Proposed Alternative and Basis for Use**

Axial vibration will be measured at the outboard motor bearing. The vibration limits contained in ASME OM Code Table ISTB-5121-1, will be applied to the vibration levels monitored at the outboard motor bearing during both the Group A and Comprehensive Test.

Although the axial vibration measurement would now include the noise from the motor, that contribution would be minimal considering that the pump is directly coupled to the motor and all significant axial contributors to vibration should originate from the pump. The proposed location to take axial vibration measurements, coupled with continued use of the vibration ranges given in Table ISTB-5121-1 of the ASME OM Code, should provide an acceptable level of quality and safety.

**6. Duration of Proposed Alternative**

The proposed alternative identified in this relief request shall be implemented during the Fifth Ten-Year Inservice Testing (IST) Interval beginning July 1, 2016.

**7. Precedents**

Relief Request Number REL-PP1 (previously approved for the Fourth 10-Year Interval), Donald C. Cook Nuclear Plant, Units 1 and 2 (DCCNP-1 and DCCNP-2) – Relief Requests for the Fourth 10-Year Pump and Valve Inservice Testing Program Interval (TAC NOS. MC9455 and MC9456), Agencywide Documents Access and Management System (ADAMS) Accession No. ML061730715.

**REQUEST FOR RELIEF  
REL-002**

**Seat Leakage Testing for  
Information Notice 91-56  
Valves**

**Impractical Inservice Testing Requirements in Accordance  
with 10CFR50.55a(f)(6)(i) Granting of Relief Based on the Impracticality  
of Performing Testing in Accordance with Code Requirements, and in  
Consideration of the Burden on the Licensee if the Code  
Requirements Were Imposed on the Facility**

**1. ASME Code Component(s) Affected**

1-IMO-261	Refueling Water Storage Tank (RWST) Supply to Safety Injection (SI) Pumps Shutoff Valve, Unit 1
1-IMO-910	RWST to Chemical Volume and Control System (CVCS) Charging Pumps Suction Header Train "A" Shutoff Valve, Unit 1
1-IMO-911	RWST to CVCS Charging Pumps Suction Header Train "B" Shutoff Valve, Unit 1
2-IMO-261	RWST Supply to SI Pumps Shutoff Valve, Unit 2
2-IMO-910	RWST to CVCS Charging Pumps Suction Header Train "A" Shutoff Valve, Unit 2
2-IMO-911	RWST to CVCS Charging Pumps Suction Header Train "B" Shutoff Valve, Unit 2

**2. Applicable Code Edition and Addenda**

ASME OM Code-2004 Edition, with Addenda through OMB Code-2006.

**3. Applicable Code Requirement(s)**

ISTC-3630(b) requires the valve seat leakage tests shall be made with the pressure differential in the same direction as when the valve is performing its function.

**4. Reason for Request**

These valves are classified as Category 'A' valves requiring a seat leakage test due to concerns based on Information Notice 91-56, "Potential Radioactive Leakage to Tank Vented to Atmosphere".

DCCNP-1 and DCCNP-2 were constructed and licensed prior to the concern about back-leakage to the RWST being identified. As a result, the system in which these valves are located is not designed and constructed to allow accident-direction testing.

There are no isolation valves between these valves and the RWST. There is no practical means to measure seat leakage with pressure applied in the accident direction.

System modifications to allow for leakage determination tests that would meet code provisions would involve installing a minimum of one eight-inch isolation valve and test/vent connection in order to test 1[2]-IMO-261 and an eight-inch isolation valve for 1[2]-IMO-910 and 911 leakage tests. Another option would require addition of a 24-inch isolation valve on the RWST outlet header which would shut off flow to all of the Emergency Core Cooling System pump suctions from the RWST.

**5. Proposed Alternative and Basis for Use**

These valves will be tested in a reverse flow direction using the static head from the RWST. The proposed testing of the gate valves, combined with the leakage testing of the check valves in series with them, provides reasonable assurance that the system leakage requirements will be met under accident conditions.

Indiana Michigan Power Company proposes to test the valves in reverse direction (the test pressure differential is opposite to the pressure differential that would exist when the valve is performing its isolation function) using the static head from the RWST. Testing the wedge at low line pressures (12-17 pounds per square inch differential (psid)) using static head of the RWST will mainly test the seal created by the mechanical wedging force alone, thus providing an indication of the degree of degradation of the seating surfaces. The increased line pressure under accident conditions (122 psid for IMO-910 and IMO-911, 195 psid for IMO-261) will act to further seat the sealing face closest to the RWST, so the proposed test at lower pressure in the opposite direction will test this seating surface without the additional service pressure that would tend to diminish leakage by pressing the disk into the seat with greater force. Therefore, the proposed seat leakage test provides reasonable assurance of the operational readiness of the valves to isolate the RWST from back leakage during the loss of coolant accident recirculation phase.

**6. Duration of Proposed Alternative**

The proposed alternative identified in this relief request shall be implemented during the Fifth Ten-Year IST Interval beginning July 1, 2016.

**7. Precedents**

Relief Request Number REL-002, Donald C. Cook Nuclear Plant, Units 1 and 2 (DCCNP-1 and DCCNP-2) – Relief Request REL-002 and REL-021 for the Third and Fourth Interval Inservice Testing Programs (TAC NOS. MD0939, MD0940, MD2498, and MD2499), ADAMS Accession No. ML063340516.