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AEP:NRC:6055-15  
10 CFR 50.55a

Docket Nos.: 50-315  
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 Units 1 and 2  
INSERVICE TEST PROGRAM – RELIEF REQUESTS REL-002 AND REL-021  
REQUEST FOR ADDITIONAL INFORMATION  
(TAC NOS. MD2498, MD2499, MD0939, MD0940)

- References:
1. Letter from Daniel P. Fadel, Indiana Michigan Power Company (I&M), to Nuclear Regulatory Commission (NRC) Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Fourth 10-Year Interval Pump and Valve Inservice Testing Program," AEP:NRC:5055-14, Accession Number ML060060110, dated December 28, 2005.
  2. Letter from Joseph N. Jensen, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Request for Relief from the Provisions of the American Society of Mechanical Engineers Code for Inservice Test Requirements," AEP:NRC:6055-02, Accession Number ML061020055, dated March 31, 2006.
  3. Electronic Communication from Peter Tam, NRC, to Michael Scarpello, I&M, "Cook: Draft RAI on Relief Requests REL-002 and REL-021 (TAC MD2498, 99, MD0939, 40)," Accession Number ML061920110, dated July 7, 2006.

In References 1 and 2, I&M requested relief from the provisions of the American Society of Mechanical Engineers OM Code for Unit 1 and Unit 2 motor operated valves IMO-261, IMO-910, and IMO-911.

In Reference 3, the NRC requested additional information from I&M regarding the relief request. The attachment to this letter provides the requested information.

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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,

A handwritten signature in black ink, appearing to read "Jensen", with a large circular flourish underneath.

Joseph N. Jensen  
Site Support Services Vice President

RGV/jen

Attachment: Inservice Test Program – Relief Requests REL-002 and REL-021 Request for Additional Information

c: R. Aben – Department of Labor and Economic Growth  
J. L. Caldwell – NRC Region III  
K. D. Curry – AEP Ft. Wayne, w/o attachments  
J. T. King – MPSC, w/o attachments  
MDEQ – WHMD/RPMWS, w/o attachments  
NRC Resident Inspector  
P. S. Tam – NRC Washington DC

INSERVICE TEST PROGRAM – RELIEF REQUESTS REL-002 AND REL-021  
REQUEST FOR ADDITIONAL INFORMATION

In References 1 and 2, Indiana Michigan Power Company (I&M) requested relief from the provisions of the American Society of Mechanical Engineers (ASME) OM Code for Unit 1 and Unit 2 motor operated valves (MOVs) IMO-261, IMO-910, and IMO-911. During the recirculation phase of a loss-of-coolant accident (LOCA), these valves, which are shown in Figure 1, are closed and isolate the refueling water storage tank (RWST) from the high head safety pump suction (IMO-261) and the centrifugal charging pump suction (IMO-910 and IMO-911). These valves are categorized as Class A valves and cannot be leak-tested in the accident direction as required by the ASME OM Code.

In Reference 3, the Nuclear Regulatory Commission (NRC) requested additional information from I&M regarding the relief request. I&M's response to the NRC request is provided below.

**NRC Request Number 1**

What is/are the specific failure scenario(s) leading to classification of the subject valves as Category A? Describe the rationale for re-categorizing the valves as Category A, including specific postulated failures of the check valve and gate valve pairs.

**I&M Response**

I&M has not assumed any specific failures of these MOVs. Rather, leakage past the check valves down stream of these valves has been postulated. This leakage would allow the residual heat removal pump recirculation phase pressure to be applied to the upstream MOV disc seats, and any leakage past the MOV seats would flow back into the RWST. Leakage into the RWST could potentially impact the off-site dose and control room habitability limits. Based on the allowed overall limit for leakage into the RWST, these valves were re-categorized as Category A (valves for which seat leakage is limited to a specific maximum amount).

**NRC Request Number 2**

The proposed alternative is to test the subject valves in the direction opposite the direction in which the leakage function applies using the head of RWST water. What is the expected differential pressure for this test and how does it compare with the accident condition where leakage is a concern? Describe how this test provides assurance that the disc face needed for isolation of accident leakage will fulfill its safety function.

**I&M Response**

The differential pressure during the leak testing of the valves is the static head of the RWST, and is estimated to be between 12 and 17 pounds per square inch differential (psid).

These valves are included in I&M's Generic Letter (GL) 89-10 (Reference 4) program and are adjusted to close against the estimated differential pressure that would exist during the transition from the LOCA injection phase to the LOCA recirculation phase. The seat load on the MOVs is specifically designed to ensure that both seats of the flex wedge are fully seated with sufficient pressure to remain leak tight under the postulated system conditions. The IMO-910 and IMO-911 adjustment is based on a calculated differential pressure of 122 psid at a line pressure of 134 pounds per square inch gauge (psig). The IMO-261 adjustment is based on the pressure differential when the RHR pump is operating at minimum flow. Under this condition, the differential pressure is estimated to be 195 psid at a line pressure of 201 psig (Note: This is a conservative value that exceeds the expected conditions).

Although the accident conditions have a higher differential pressure than that used for the leakage measurement test, the leakage measured during the leakage test is corrected to the higher pressure.

### **NRC Request Number 3**

In discussing the burden caused by compliance with the Code, I&M stated that a system modification would be required to allow isolation of the RWST (REL-021). Describe what modifications were considered and the extent of burden that would be caused by their implementation.

### **I&M Response**

A modification would be needed to install a minimum of one 8-inch isolation valve and a test/vent connection for IMO-261. IMO-910 and IMO-911 would require installation of an 8-inch isolation valve. The only other option involves addition of a 24-inch valve on the RWST outlet header which would shut off flow to all of the ECCS pump suctions from the RWST.

### **NRC Request Number 4**

If system configuration allows for accident direction testing of check valves (SI-101 and SI-185) in series with the motor-operated gate valves (IMO-261, IMO-910, IMO-911) that meets Code requirements for Category A leak testing, has consideration been given to using this test path to test MOV (IMO-261, IMO-910, IMO-911) with the associated check valve internals removed? Are these check valves disassembled and inspected on a regular frequency that would allow a window of opportunity to establish accident direction test conditions for the valves for which relief is requested?

**I&M Response**

It was not considered prudent to disassemble two 8-inch check valves (SI-101, SI-185) every outage solely to facilitate leak testing. The check valves are not disassembled and inspected. Open exercising and leak testing of the check valves confirms their ability to perform their safety functions. Even if this were attempted, leakage past the valve seat(s) could not be measured. The leakage would have to be based on test volume makeup that would include the boundary valves in the identified leakage, which would be less accurate to quantify postulated leakage than the method that is currently being used.

**NRC Request Number 5**

I&M stated that at line pressures below 100 psi, the pressure force alone is not sufficient to create a seal and the mechanical force resulting from the disc being wedged between the seat rings provides the additional force necessary to provide a seal. Describe how normal valve operation in the closed direction gives assurance that a leak tight seal is achieved, while still preserving the ability to reopen the valve.

**I&M Response**

The valves are included in the GL 89-10 (96-05) MOV Program. See response to Question 2 for details of the setup.

**References**

1. Letter from Daniel P. Fadel, I&M, to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Fourth 10-Year Interval Pump and Valve Inservice Testing Program," AEP:NRC:5055-14, Accession Number ML060060110, dated December 28, 2005.
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3. Electronic Communication from Peter Tam, NRC, to Michael Scarpello, I&M, "Cook: Draft RAI on Relief Requests REL-002 and REL-021 (TAC MD2498, 99, MD0939, 40)," Accession Number ML061920110, dated July 7, 2006.
4. Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," dated June 28, 1989.

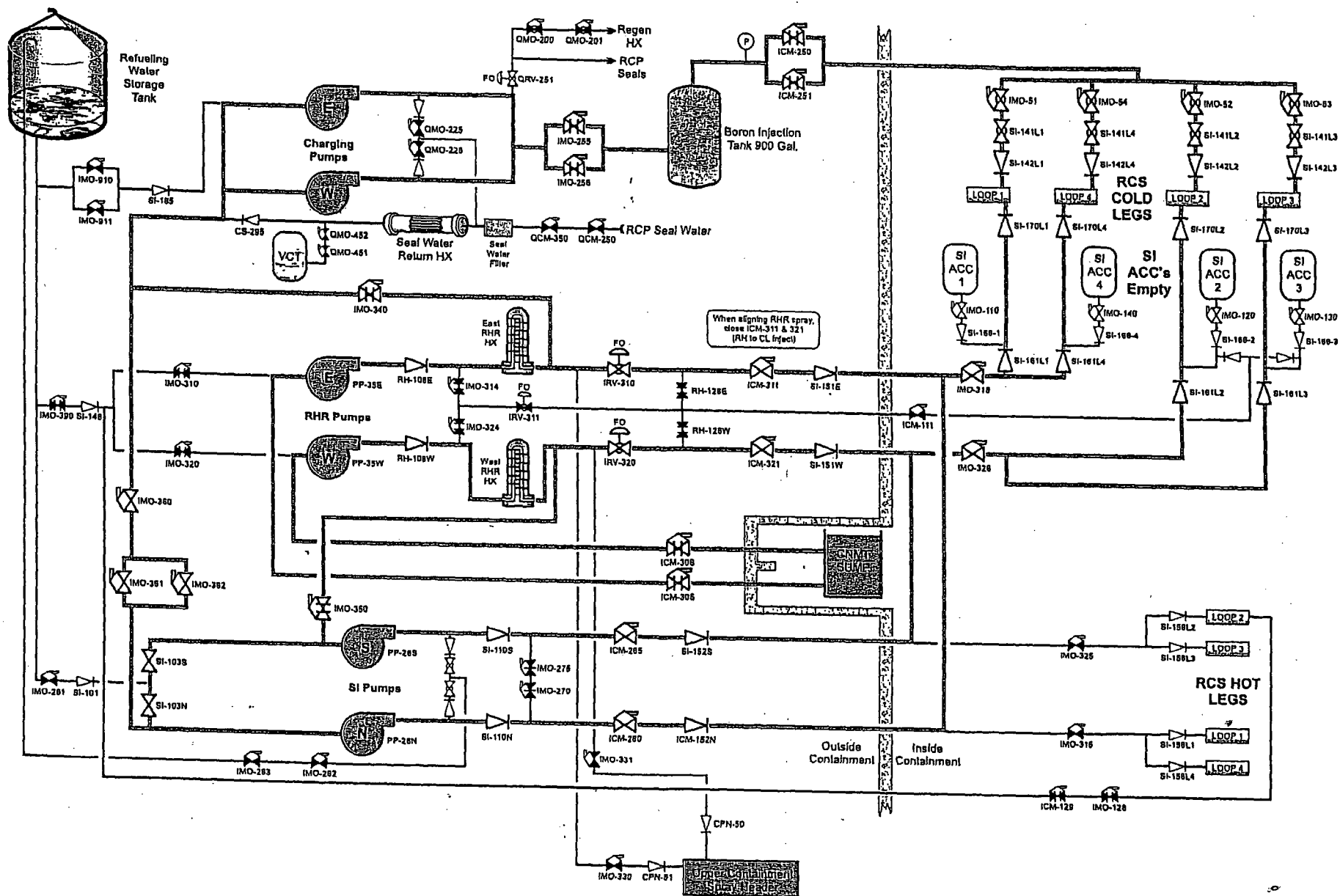


Figure 1  
Emergency Core Cooling System – Recirculation Phase