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U. S. Nuclear Regulatory Commission  
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Donald C. Cook Nuclear Plant Unit 2  
SPECIAL REPORT  
UNIT 2 REACTOR COOLANT INVENTORY TRACKING SYSTEM

The attached special report is submitted in accordance with Donald C. Cook Nuclear Plant Improved Technical Specification 3.3.3. The report is required due to the inoperability of Unit 2 Reactor Coolant Inventory Tracking System, Channel B, for a period in excess of 30 days.

There are no regulatory commitments included in this submittal.

Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Supervisor, at (269) 466-2649.

Sincerely,

Joseph N. Jensen  
Site Vice President

RAJ/jen

Attachment

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

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## **REACTOR COOLANT INVENTORY TRACKING SYSTEM SPECIAL REPORT**

Indiana Michigan Power Company, the licensee for Donald C. Cook Nuclear Plant (CNP), is submitting this special report concerning an inoperable period exceeding 30 days for a channel of the Unit 2 Reactor Coolant Inventory Tracking System (RCITS). This special report is required by Improved Technical Specification (ITS) 3.3.3, Condition B, under required Action B.1.

### **ACTION TAKEN**

On July 31, 2005, at approximately 1315 hours, 2-NLI-131, reactor vessel train B wide range water level indicating instrument, was declared inoperable due to a failed channel check. The Unit 2 Technical Specification (TS) in effect at the time, TS 3.3.3.6, "Post-Accident Instrumentation," Table 3.3-10, Item 16, "Reactor Coolant Inventory Tracking System," required only one of two trains of RCITS to be operable. No additional action requirements were specified. Under the TS, a complete RCITS train required 3 channels: upper plenum level, narrow range, and wide range. With the wide range indication unreliable, train B RCITS was declared inoperable.

Implementation of the ITS at CNP occurred September 25, 2005. RCITS train B (designated as channel B in ITS) was still inoperable. ITS 3.3.3, Condition B, Action B.1, requires action per ITS 5.6.6, "Post Accident Monitoring Report," to be taken if ITS 3.3.3, Condition A.1, restore channel to operable status, is not completed within 30 days of channel inoperability. The channel was returned to service September 29, 2005, following replacement of the circuit card for the 2-NLI-131 wide range instrument.

This information satisfies the requirement to submit a report within 14 days following 30 days of channel inoperability, per ITS 5.6.6.

### **PRE-PLANNED ALTERNATE METHOD OF MONITORING**

The RCITS is post-accident monitoring instrumentation. It provides plant operators with the information needed to assess void formation in the reactor vessel head region and the trend of liquid level in the reactor vessel plenum.

The RCITS consists of two redundant channels, each consisting of upper plenum level, narrow range level, and wide range (dynamic range) level. During the period of inoperability of RCITS channel B, the redundant channel A has been operable, and available for indication, as well as the narrow range and upper plenum level of channel B.

The removal of channel B from operable status eliminated a means of redundant indication for the wide range monitoring. The wide range indication is called upon to determine void content, and is used to support decision making within the emergency operating procedures while the reactor coolant pumps (RCPs) are operating. The narrow range indication, used with no RCPs operating, and the upper plenum indication were still available.

The alternate method of monitoring is the redundant channel A. For the purpose of determining degraded core cooling status, other indications are used to corroborate excessive voiding in the reactor coolant system. They are RCS subcooling and core exit thermocouple temperature.

These diverse indications are used in conjunction with RCITS wide range level in plant emergency operating procedures to support recovery from emergency conditions.

### **CAUSE OF INOPERABILITY**

Replacement of the printed circuit card in the instrument rack restored the correct indication. The channel was monitored for several days, and remained stable. It was concluded that a bad contact between the circuit card and the chassis was the likely mode of failure.

### **PLANS AND SCHEDULES FOR RESTORING THE SYSTEM TO OPERABLE STATUS**

RCITS channel B was declared operable on September 29, 2005.

RCITS channel B was again declared inoperable on October 3, 2005. Due to current plant conditions, the entire instrument loop cannot be tested to conclusively identify the failure. If the troubleshooting currently under way identifies components which cannot be replaced or repaired with the unit on line, it will be restored at the first planned outage of sufficient duration, but not later than restart from the Unit 2 Cycle 16 refueling outage scheduled for April 2006.