

March 31, 2004

Mr. Mano K. Nazar
American Electric Power
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SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - SUMMARY OF
STEAM GENERATOR INSPECTION REPORTS FROM JANUARY 2002 AND
MAY 2002 (TAC NOS. MB8121 AND MB8122)

Dear Mr. Nazar:

By letter dated February 28, 2003, as supplemented September 15, 2003, Indiana Michigan Power Company (I&M, the licensee) submitted reports summarizing the steam generator (SG) tube inspections performed during End of Cycle (EOC) 18 (May 2002) and EOC 13 (January 2002) refueling outages for Donald C. Cook Units 1 and 2, respectively.

The Nuclear Regulatory Commission (NRC) staff's assessment of the licensee's SG tube inspection reports is enclosed. The NRC staff concluded that the licensee provided the required information outlined by their Technical Specifications.

Sincerely,

/RA/

John F. Stang, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosure: NRC Staff Assessment

cc w/encls: See next page

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Donald C. Cook Nuclear Plant, Units 1 and 2

cc:

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SAFETY ASSESSMENT BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO SUMMARY OF STEAM GENERATOR INSPECTION REPORTS FROM
JANUARY 2002 AND MAY 2002
INDIANA MICHIGAN POWER COMPANY
DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By letter dated February 28, 2003, as supplemented September 15, 2003, Indiana Michigan Power Company (I&M, the licensee) submitted reports summarizing the steam generator (SG) tube inspections performed during End of Cycle (EOC) 18 (May 2002) and EOC 13 (January 2002) refueling outages for Donald C. Cook (D. C. Cook) Units 1 and 2, respectively. These reports were submitted in accordance with D. C. Cook Units 1 and 2 technical specification (TS) Sections 4.4.5.5.a, 6.9.1.4, and 6.9.1.5. A summary of the staff's evaluation of the May 2002 and January 2002 refueling outage tube inspection results is provided below.

2.0 ASSESSMENT

D. C. Cook Unit 1

D. C. Cook Unit 1 has 4 SGs which are designated 11, 12, 13, and 14. All four SGs were inspected during the May 2002 refueling outage. In December 2000, the Unit 1 Westinghouse Model 51 SGs were replaced with replacement SGs consisting of Westinghouse steam domes and Babcock and Wilcox lower assembly and moisture separator units. The SGs consist of 3496 thermally-treated Inconel 690 tubes which have an outside diameter of 7/8 inch and a wall thickness of 0.049 inch. The tubes have been hydraulically expanded into the tubesheet and the SA-240-410S-modified stainless steel tube support plates (TSPs) are lattice grid type. The May 2002 refueling outage was the first in-service inspection since SG replacement.

Of particular note during the inspections, the licensee identified five manufacturing burnishing mark indications which had significant increases in the voltage amplitude (1 to 2.5 volts) since the baseline inspection. These locations were inspected with a +Point™ probe and no degradation was reported at these locations. The tubes with these indications were preventively plugged.

D. C. Cook Unit 2

D. C. Cook Unit 2 has 4 SGs which are designated 21, 22, 23, and 24. All four SGs were inspected during the January 2002 refueling outage as discussed below. In 1989, the Unit 2 SGs were replaced with Westinghouse Model 54 SGs. This SG model consists of 3592 total

tubes which have an outside diameter of 7/8 inch and a wall thickness of 0.050 inch. The tubes have been hydraulically expanded into the tubesheet and the stainless steel Type 405 TSPs contain broached quatrefoil holes. The SGs have thermally-treated Inconel 690 tubes.

An eddy current inspection of the Unit 2 SGs was performed in January - February of 2002. The base inspection scope consisted of a 50 percent full-length bobbin coil examination of the tubes in each of the four SGs. Ubends (07H-07C) of Rows 1 and 2 were not examined with the standard 720 bobbin coil probe due to potential difficulty in transversing across the low row ubends. A smaller diameter bobbin coil probe could not be used in this application as such a probe has insufficient fill factor to be qualified for that area of the tubing. As a result, a sample inspection using rotating coils was performed on 100 percent of the Row 1 and 2 in-service tubes in SG 23.

In addition, special interest examinations were performed in areas of interest using rotating probes to better characterize select bobbin coil signals. Rotating inspections were also performed in areas of interest (e.g. hot-leg top of tubesheet and in service Row 1 and 2 tubes in select SGs).

A combined total of 39 dents and 182 dings were reported using a 2-volt criterion during the bobbin coil examination. A 20 percent sample of the reported dent/ding locations was examined with a rotating coil. No degradation was detected at any of the dent/ding locations.

A total of four tubes were reported as not having a hydraulically expanded tubesheet region. SG 22 had two tubes not fully expanded in the cold-leg tubesheet while SG 23 had two tubes not fully expanded in the hot-leg tubesheet. All four tubes were examined for the full length of the tubesheet with a rotating coil. No degradation was detected in any of the non-expanded areas of these tubes.

No tubes were plugged in any of the four SGs during the 2002 Unit 2 inspection.

3.0 CONCLUSION

Based on the NRC staff's review of the information provided by the licensee, the staff concludes that the licensee provided the required information outlined by their TSs and that at this time no additional follow-up is required.

Principal Contributor: Leslie S. Miller

Date: March 31, 2004