



H. B. Barron
Vice President

Duke Energy Corporation

McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-9340
(704) 875-4800 OFFICE
(704) 875-4809 FAX

June 18, 2001

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

SUBJECT: McGuire Nuclear Station - Unit 1
Docket No. 50-369
Steam Generator Inservice Inspection Report

Pursuant to ASME Section XI, Paragraph IWA-6230, Duke Energy Corporation hereby submits the attached Inservice Inspection (ISI) Outage Summary Report for McGuire Unit 1 EOC 14.

Questions regarding the attached report may be directed to Kay L. Crane at (704) 875-4306.

Very truly yours,


H. B. Barron for

A047

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L. A. Reyes, Regional Administrator
U.S. Nuclear Regulatory Commission, Region II
Atlanta Federal Center
61 Forsyth St., SWW, Suite 23T85
Atlanta, GA 30303

Robert E. Martin
U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Mail Code 08G9
Washington, DC 20555-0001

S. M. Shaeffer
NRC Senior Resident Inspector
McGuire Nuclear Station

Steam Generator Outage Summary Report

McGuire Unit 1 2001 Outage EOC 14

Location: Hwy. 73, Cowans Ford, North Carolina 28216

NRC Docket No. 50-369

National Board No. 44

Commercial Service Date: December 1, 1981

Owner: Duke Energy Corporation
526 South Church St.
Charlotte, N.C. 28201-1006

Revision 0

Prepared By: *Sheldan Crisp* Date: *5/23/01*

Reviewed By: *Danny G. Kura* Date: *5.24.01*

Approved By: *Ngus Sample* Date: *5-24-01*

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Duke Engineering & Services

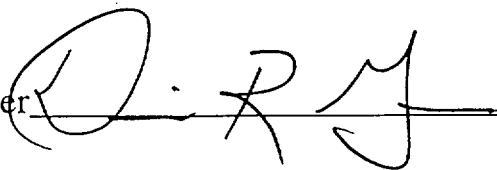
Outage Summary Report

for

McGuire Nuclear Station

Unit 1 EOC 14

Project Manager



Date 5 - 23 - 01

1.0 Introduction

The Inconel 690 tubing in the four Babcock and Wilcox International (BWI) CFR 80 series recirculating steam generators (RSG's) B and C, at Duke Power Company's McGuire Unit 1 were examined with eddy current techniques in March 2001. The tubing in the steam generators measures 0.688" nominal O.D. X 0.040" nominal wall thickness. The eddy current examination was performed by DE&S, Westinghouse and Zetec Inc. personnel during the MNS 1-EOC-14 inservice inspection.

This report documents the bobbin coil and MRPC examination results.

2.0 Summary

The following is a summary of the total tubes examined with eddy current for each steam generator.

Note: All bobbin examinations were performed with a Zetec "tuned" probe in steam generator B whereas tubes in steam generator C were tested with a Westinghouse "mid range" probe. All previous and current indications were reran with a Zetec "tuned" probe in steam generator C.

2.1 RSG B

Bobbin

- 5997 tubes were examined full length
- 634 tubes (rows 1-9) were examined straight length from the cold leg
- 634 tubes (rows 1-9) were examined over the u-bend length from the hot leg

MRPC

- 2 outlet special interest locations
- 13 u-bend special interest locations
- 2 inlet special interest locations
- 2 plug inspections

2.2 RSG C

Bobbin

- 5994 tubes were examined full length
- 634 tubes (rows 1-9) were examined straight length from the cold leg
- 634 tubes (rows 1-9) were examined over the u-bend length from the hot leg
- 110 tubes with indications ran with tuned bobbin probe

MRPC

- 17 outlet special interest locations
- 12 u-bend special interest locations
- 1 inlet special interest location
- 2 plug inspections

3.0 Examination

The examinations, equipment, and personnel were in compliance with the requirements of the DE&S NDE Procedure Manual for Inservice Inspection, the applicable Duke Power Technical Specifications, the ASME Boiler and Pressure Vessel Code Section XI, 1989 Edition, and industry standards. Analysis of the eddy current data was performed in accordance with "Eddy Current Analysis Guidelines for McGuire Unit 1 EOC 14".

The steam generator tubing examinations were performed by technicians qualified to Level II or higher, Level I personnel were under the direct supervision of a qualified Level II or higher. Personnel qualified to a minimum of Level IIA evaluated the data. The examination and evaluation techniques were approved by personnel qualified to Level III.

The bobbin coil examinations were performed with .560 inch diameter probes at frequencies of 650, 320, 170 and 35 kHz operating in differential and absolute modes. The frequencies were generated with a Zetec MIZ-30 and Westinghouse TC 6700 Remote Data Acquisition Unit.

A 650/170 kHz differential tube support plate (TSP) suppression mix was used to enhance the detection of indications at TSP intersections. In addition, a 320/170 kHz absolute mix was used to detect wear indications at support plates and fan bars.

A 650/320/170/35 differential turbo mix was also used to enhance the detection of indications at tubesheet transitions and NQI indications. Additional process channels were used for automated analysis to enhance detection.

The MRPC examination was used as a supplemental examination to detect and characterize indications reported by bobbin.

The MRPC examination was performed with .540 or .520 inch diameter probes at frequencies of 400, 300, 200, 100 and 15 kHz. A 300/100 kHz absolute mix was used to improve the detection of indications at TSP locations.

Official results of the data analysis were recorded on optical disks and then loaded into the "Eddy current Inspection Management System" (EIMS) and the "Framatome Data Management System" (FDMS) data management systems. These systems were used to check the data for invalid analysis entries, perform data sorting routines, ensure that the required extents of all tubes in the inspection plan were examined, and to print out final data sheets.

Note: A list of all three-digit codes and acronyms used throughout this report can be found in "Attachment 3A" of the Bobbin Analysis Guidelines and "Attachment 1B" of the Rotating Coil Analysis Guidelines.

4.0 Results

The McGuire Unit 1 CFR 80 series generators have minimal manufacturing discontinuities, however the eddy current results did indicate a number of manufacturing burnish marks (MBM).

The "Absolute Drift Indications" (ADI) code was used for reporting absolute signals for indications where an adequate differential response was not present and the absolute signal was indicative of degradation.

The "Non-Quantifiable Indications" (NQI) code was used for reporting signals of interests where two differential channels did not correlate within 10% or an accurate percent throughwall could not be assigned.

The following are results from the Bobbin and MRPC examinations:

4.1 RSG B:

4.1.1 Bobbin Coil Examination

2 tubes with 2 ADI indications
2 tubes with 2 DNT indications
14 tubes with 15 NQI indications
13 tubes with 14 Wear indications

4.1.2 All MRPC Examinations

2 plugs with no indications
No tubes with Volumetric indications
No I code indications
10 tubes with 11 Wear indications
No tubes required repair

4.2 RSG C:

4.2.1 Bobbin Coil Examination

35 tubes with 40 ADI indications
2 tubes with 2 DNT indications
21 tubes with 42 NQI indications
7 tubes with 7 PLP indications
13 tubes with 13 Wear indications

4.2.2 MRPC Examination

2 plugs with no indications
8 tubes with 15 Volumetric indications
No I code indications
13 tubes with 13 Wear indications
No tubes required repair

5.0 Documentation

All optical disks (working copies) and row/column examination results will be retained by DE&S.

FORM NIS-1 OWNER'S DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Power Company, 526 S. Church St., Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: McGuire Nuclear Station, 12700 Hagers Ferry Rd., Huntersville, NC 28078
(Name and Address of Plant)
3. Plant Unit: 1 4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date December 1, 1981 6. National Board Number for Unit 44
7. Components Inspected:

<u>Component or Appurtenance</u>	<u>Manufacturer or Installer</u>	<u>Manufacturer or Installer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
1B Steam Generator	B&W Canada	7693-01	N/A	146
1C Steam Generator	B&W Canada	7701-03	N/A	155

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-1 (Back)

8. Examination Dates 3/20/01 to 3/29/01
9. Inspection Period Identification: 3rd Period of the 2nd Interval
10. Inspection Interval Identification: 2nd Interval
11. Applicable Edition of Section XI 1989 Addenda None
12. Date/Revision of Inspection Plan: 2/07/01 Rev.0
13. Abstract of Examinations and Test. Refer to Attached Steam Generator Outage Summary Report
14. Abstract of Results of Examination and Tests. Refer to Attached Steam Generator Outage Summary Report
15. Abstract of Corrective Measures. Refer to Attached Steam Generator Outage Summary Report

We certify that a) the statements made in this report are correct b) the examinations and tests meet the Inspection Plan as required by the ASME Code, Section XI, and c) corrective measures taken conform to the rules of the ASME Code, Section XI.

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

Date 5-2 20 01 Signed Duke Power Co. By Mous Sample
Owner

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State of Province of North Carolina employed by * The HSBI&I Co. of 11-5-99 to 5-24-01, and state that to the best of my knowledge and belief, the Owner has performed examinations and tests and taken corrective measures described in the Owners' Report in accordance with the Inspection Plan and as required by the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations, test, and corrective measures described in this Owners' Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection

[Signature] Commissions NB7728, NC853, N-I
Inspector's Signature National Board, State, Province, and Endorsements

Date 5-24 20 01

* The Hartford Steam Boiler Inspection & Insurance Co.
200 Ashford Center North
Suite 300
Atlanta, GA. 30338