Duke Energy®

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

SUBJECT: Duke Energy Carolinas, LLC
McGuire Nuclear Station
Docket No. 50-369
Steam Generator Inservice Inspection Report

Pursuant to ASME Section XI, please find attached the McGuire Unit 1, Fourth Interval Steam Generator Inservice Inspection Plan, Revision 0.

Questions regarding the attached report should be directed to Kay Crane, McGuire Regulatory Affairs at (980) 875-4306.

H D Brewer for

Steven Capps

Attachment

A047
NRR

xc:

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NRC Senior Resident Inspector
McGuire Nuclear Station

FOURTH INTERVAL STEAM GENERATOR INSERVICE INSPECTION PLAN

MCGUIRE NUCLEAR STATION

UNIT 1

REVISION 0

Prepared By: _____ Date 7/2/2012

Reviewed By: _____ Date 7/12/2012

Approved By: P. W. Bunning Date 7/24/2012

ANII Review: Jerome F. Swan Date 9-10-2012

EC Level III Review: _____ Date 7-23-2012

MCGUIRE NUCLEAR STATION

GENERAL INFORMATION

Location: 12700 Hagers Ferry Road, Huntersville, North Carolina 28078-9340

Commercial Service Date: December 1, 1981

Fourth Interval Start Date: December 1, 2011

Owner: Duke Energy Company
526 South Church St.
Mail Code EC07J
Charlotte, N. C. 28201-1006

REVISION SUMMARY

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1.0 Applicable Codes and Standards for Inservice Inspection

"In accordance with the requirements of Paragraph 50.55a(g) of 10CFR Part 50, the inservice inspection of Unit 1's Steam Generators of the McGuire Nuclear Station will be performed in accordance with the ASME Section XI 1998 Edition and the 2000 Addenda, hereafter referred to as Section XI. The inservice inspection examinations will be performed in accordance with Inspection Program B of Section XI. All examinations will be performed to the extent practicable within the limitations of design, geometry and materials of construction of the component."

Note: Per Relief Request 10-MN-01, the NRC granted McGuire approval of a proposed alternative to the American Society of Mechanical Engineers (ASME), *Boiler and Pressure Vessel Code* (the Code) requirements for ISI. The alternative delays the required update of the McGuire 1 Code of Record for the fourth ISI interval until July 15, 2014. Therefore ASME Section XI 1998 Edition and the 2000 Addenda will be the McGuire 1 Code of Record until July14th, 2014.

Note: The steam generators are not included in the McGuire Nuclear Station's 4th interval Inservice Inspection (ISI) plan. As a result, this stand-alone SG ISI plan has been developed for the Fourth Interval which covers 12/1/2011 thru 11/30/2021.

1.1 Additional Codes and Standards Used

Steam Generator tubing will be inspected as required by ASME Section XI and the Technical Specifications for McGuire Nuclear Station. The Steam Generator Maintenance and Engineering (SGME) group of the Corporate Programs and Components Engineering division has overall responsibility for this inspection.

1.2 Code Case Applicable to ASME Boiler & Pressure Vessel Code Section XI

The following code cases will be used for the Fourth Interval Inservice Inspection Program at McGuire Unit 1 for the Steam Generator Tubing inspections:

None

Note: Reference Relief Request 10-MN-01 for all applicable conditions.

1.3 Applicable Duke Power Administrative Procedures

The following Duke Energy Company procedures will be used to control steam generator tubing inservice inspection activities and inservice inspection plans and reports:

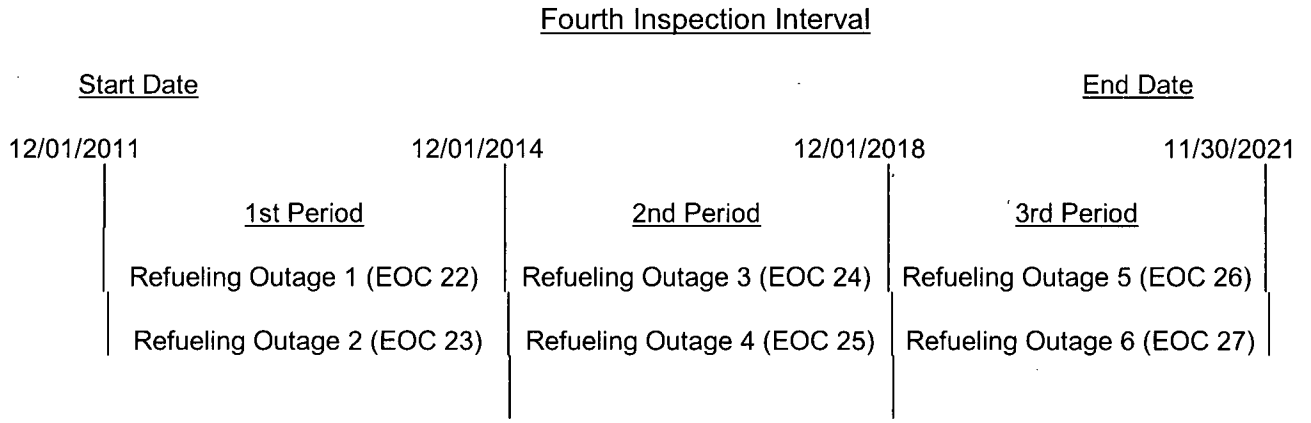
PROCEDURE NUMBER	TITLE
NSD-300	ASME Section XI Program
NSD-701	Records Management

NSD-702	Document Control
NSD-703	Administrative Instructions for Technical Procedures
NSD-704	Technical Procedure Use and Adherence
NSD-800	Software and Data Quality Assurance (SDQA) Program
SGMP	Steam Generator Management Program

2.0 System Boundary Subject to Inspection

The steam generator tubing is part of the pressure boundary for the Class 1 Reactor Coolant System (NC).

2.1 Inspection Interval and Inspection Periods



3.0 Inspection Methods and Procedures to Be Used for Inservice Inspection

Inservice inspection of McGuire Unit 1 will be performed using procedures which comply with the requirements of the applicable codes referenced in Section 1 of this plan. The volumetric method of inspection will be used to inspect the steam generator tubing as required. Each inspection will be performed under the QA Program of the organization performing the inspection.

NSD 703 will be used to review, approve, and control all vendor procedures that are used to perform the steam generator tubing inservice inspection.

3.1 Volumetric Inspection

Steam generator tubing will be examined using a volumetric inspection method to meet the requirements of Section XI and the McGuire Technical Specifications. The Steam Generator Maintenance and Engineering group of the Corporate Programs and Component Engineering division has overall responsibility for implementing and reporting inspections pertaining to steam generator tubing.

4.0 Description of Inservice Inspection Plan for Steam Generator Tubing

The inservice inspection of the steam generator tubing shall be performed in accordance with the requirements of Article IWB-2000 of Section XI.

4.1 Examination Categories and Requirements

The examination category for steam generators is listed in Table IWB-2500-1 of Section XI. The specific examination will be identified by an item number similar to those listed in Table IWB-2500-1 of Section XI, plus an additional number to uniquely identify the steam generator being inspected.

Category B-Q **Steam Generator Tubing**

IWB-2500-1 Item	Component To Be Examined	Comments
B16.10	Steam Generator Tubing in Straight Design	N/A for McGuire Unit 1
B16.20	Steam Generator Tubing in U-Tube Design	S/G Tubing is examined and documented by the Steam Generator Maintenance and Engineering group of the Corporate Programs and Components Engineering division as required by the MNS Technical Specifications Sect. 5.5.9.

4.2 Specific Steam Generator Item Number with Corresponding ID Number, General Arrangement and As-Built Drawings

Steam Generator	Item Number	ID Number	Drawing Number
A	B16.20.001	1NC SG0005	MC 1201.01-0853
B	B16.20.002	1NC SG0006	MC 1201.01-0850
C	B16.20.003	1NC SG0007	MC 1201.01-0852
D	B16.20.004	1NC SG0008	MC 1201.01-0851

Right Hand Vessel General Arrangement (B&D) – MCM 1201.01-0683
Left Hand Vessel General Arrangement (A&C) – MCM 1201.01-0684

4.3 Steam Generator Tubing Material and Dimensions

Tubing Part Number 5158154
- Material SB-163 UNS N06690
- 0.6875" Outside Diameter
- 0.040" Wall Thickness

5.0 Fourth Interval Examination Information

The Fourth Interval Inspection of McGuire Unit 1 Steam Generators will be performed in accordance with ASME Section XI and the McGuire Technical Specifications section 5.5.9.

6.0 Calibration Standards

6.1 Eddy Current Calibration Standards

Calibration standards that will be used include but are not limited to bobbin, array, MRPC, and plug type standards. Eddy current examinations are scheduled and performed in accordance with ASME Section XI and the McGuire Technical Specifications Section 5.5.9.

6.2 Calibration Standard Description

Calibration Standards are precision machined materials of the same type/size as the tubing in the Steam Generators with precision machined flaws used to calibrate Eddy Current.