



W. R. McCollum, Jr.
Vice President

Duke Power

Oconee Nuclear Site
7800 Rochester Highway
Seneca, SC 29672
(864) 885-3107 OFFICE
(864) 885-3564 FAX

January 24, 2001

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station, Units 1, 2 and 3
Docket Numbers 50-269, 50-270, and 50-287
Steam Generator Inservice Inspections -
ASME XI Reports

The American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI (ASME XI), Article IWA-6230, specifies a summary report of inservice inspections conducted during refueling outages be submitted to the NRC within 90 days of inspection completion. Although the 90-day report of Steam Generator (SG) inspections required by Technical Specification were submitted, a number of the summary reports required by ASME were not transmitted due to an oversight. This letter transmits a copy of the missing summary steam generator (SG) tube inservice inspection summary reports per the above requirements of ASME XI for the Oconee (ONS) refueling and SG tube leak repair outages listed below:

Outage Identifier	Outage End Date (Month/Year)
ONS-1 EOC-15 Refueling Outage	6/94
ONS-1 EOC-16 Refueling Outage	12/95
ONS-1 EOC-17 Refueling Outage	12/97
ONS-1A SG Tube Leak Outage	1/98
ONS-1 August 1998 Forced Outage	8/98
ONS-1 EOC-18 Refueling Outage	7/99
ONS-1 EOC-19 Refueling Outage	12/01
ONS-2 EOC-13 Refueling Outage	6/93
ONS-2A SG Tube Leak Outage	8/94
ONS-2 EOC-14 Refueling Outage	11/94
ONS-2 EOC-15 Refueling Outage	5/96
ONS-2 EOC-16 Refueling Outage	5/98
ONS-2 EOC-17 Refueling Outage	12/99
ONS-2 EOC-18 Refueling Outage	5/01
ONS-3 EOC-14 Refueling Outage	2/94
ONS-3A SG Tube Leak Outage	3/94
ONS-3 EOC-15 Refueling Outage	7/95
ONS-3 EOC-16 Refueling Outage	4/97
ONS-3 EOC-17 Refueling Outage	12/98

A047

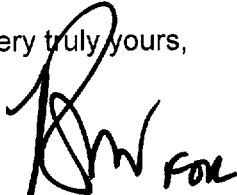
U. S. Nuclear Regulatory Commission
January 24, 2001

Page 2

Although the attached summary reports refer to the referenced letter and report as "attached," the referenced letters are not being retransmitted to avoid duplication of submittals.

If there are any questions you may contact R. C. Douglas at (864) 885-3073.

Very truly yours,

A handwritten signature in black ink, appearing to read "W. R. McCollum, Jr." with a stylized "FOX" written below it.

W. R. McCollum, Jr.
Site Vice President

Attachments (18)

xc w/attachment:

Mr. Luis A. Reyes
Regional Administrator, Region II

Mr. M. C. Shannon
NRC Senior Resident Inspector

Mr. L. N. Olshan
ONRR, Senior Project Manager

Mr. Virgil R. Autry
DHEC

Steam Generator Outage Summary Report

Oconee Unit 1 1994 Outage EOC 15

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: Ald J. Cump Date: 6/29/00

Reviewed By: James H. Batton Date: 6/30/00

Approved By: W. Langlois Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: April 28, 1994 TO June 27, 1994
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 2/9/94 Revision

13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 6/16/94.

14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 6/16/94.

15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 6/16/94.

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 7/10 20 00 Signed Duke Energy Corp. By W. Ryfante
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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 4-28-94 to 6-27-94, 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 Owner's 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 Owner's 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

MB Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-4 20 00

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

Duke Power Company
Oconee Nuclear Generation Department
P.O. Box 1439
Seneca, SC 29679

I.W. HAMPTON
Vice President
(803)885-3499 Office
(704)373-5222 Fax



DUKE POWER

June 16, 1994

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-269
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by our Technical Specifications 4.17.6(a) & (b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 1 EOC 15 refueling outage.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	9327	Bobbin
A	958	MRPC
B	9333	Bobbin
B	1528	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
A	2	MRPC
B	3	Bobbin
B	4	MRPC

U. S. Nuclear Regulatory Commission
Page 2

3. The following information identifies the tubes removed from service by plugging. (The tubes are identified in the attachments). There were no tubes repaired by sleeving in either Steam Generator.

<u>Steam Generator</u>	<u>Number of Tubes Plugged</u>	<u>Attachment</u>
A	43	5
B	125 (for ECT Reasons)	6
B	3 (for Other Reasons)	7

If there are any questions you may contact D. A. Nix at (803) 885-3634.

Very truly yours,


J. W. Hampton
Site Vice-President

Attachment

xc w/attachment: Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

bxc w/o att: Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Virgil R. Autry
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Steam Generator Outage Summary Report

Oconee Unit 1 1995 Outage EOC 16

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: Gerald A. Cump Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: W. J. Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: November 2, 1995 TO December 10, 1995
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 8/15/95 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 12/5/95.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 12/5/95.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 12/5/95.

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 7/10 20 00 Signed Duke Energy Corp. By Wong Samuels
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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 11-2-95 to 12-10-95, 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 Owner's 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 Owner's 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

MBC Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-4 20 00

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

Duke Power Company
Oconee Nuclear Generation Department
P.O. Box 1439
Seneca, SC 29679

W. HAMPTON
Vice President
(803) 885-3499 Office
(803) 885-3564 Fax



DUKE POWER

December 5, 1995

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 1
Docket No. 50-269
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (a) and (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 1 End of Cycle 16 refueling outage are submitted for review.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	15197	Bobbin
A	1196	MRPC
B	14354	Bobbin
B	2063	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

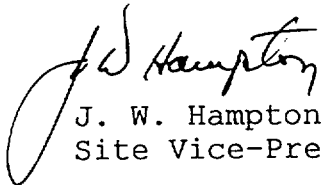
<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC
B	4	MRPC

3. The following information identifies the quantity of tubes removed from service by plugging. (The tubes are identified in the attachments). There were no tubes repaired by sleeving in either steam generator.

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	65	5
B	148	6

If there are any questions you may contact D. A. Nix at (803) 885-3634.

Very truly yours,



J. W. Hampton
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 1 1997 Outage EOC 17

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: *Gerald W. Camp* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/30/00*

Approved By: *W. R. Kump* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: September 18, 1997 TO December 24, 1997
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 9/16/97 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 2/9/98.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 2/9/98.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 2/9/98.

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 7/10 20 00 Signed Duke Energy Corp. By W. J. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 9-18-97 to 12-24-97, 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 Owner's 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 Owner's 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

M. B. Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-7 20 00

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



Duke Power Company
A Duke Energy Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

W. R. McCollum, Jr.
Vice President

(864) 885-3107 OFFICE
(864) 885-3564 FAX

February 9, 1998

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Duke Energy Corporation
Oconee Nuclear Station, Unit 1
Docket No. 50-269
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 1 End of Cycle 17 refueling outage are submitted for review.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators.

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	15132	Bobbin
A	15132	MRPC
B	14206	Bobbin
B	14206	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC/Plus Point
B	4	MRPC/Plus Point

3. The following information identifies the quantity of tubes removed from service by plugging. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	52	5
B	128	6

4. The following quantities of tubes were repaired in the upper tubesheet by rerolling.

<u>Steam Generator</u>	<u>Number of Tubes Repaired by Rerolling</u>	<u>Attachment</u>
A	39	7
B	1956*	8

* 1929 of these tubes remained in service, 27 were plugged and are included in the total of 128 plugged tubes.

5. There were samples, of the following tubes, removed in the lower tubesheet in steam generator A and the upper tubesheet of steam generator B.

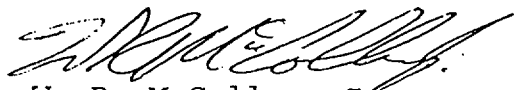
<u>Steam Generator</u>	<u>Number of Tubes Having Samples Removed</u>	<u>Attachment</u>
A	5	9
B	5	10

6. There were no tubes repaired by sleeving in either steam generator during this outage.

Attachment 11 contains a summary of the steam generator inspection results from the Oconee Unit 1 end of cycle 17 refueling outage.

If there are any questions you may contact Michael Bailey at (864) 885-4390.

Very truly yours,


W. R. McCollum, Jr.
Site Vice President

Steam Generator Outage Summary Report

Oconee Unit 1 December 1997 Tube Leak Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: Michael W. Cump Date: 6/29/00

Reviewed By: James H. Batten Date: 6/29/00

Approved By: Wyn Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: December 28, 1997 TO January 27, 1998
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 11/21/97 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 2/5/98.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 2/5/98.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 2/5/98.

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 7/10 20 00 Signed Duke Energy Corp. By Wynfance
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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 12-28-97 to 1-27-98, 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 Owner's 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 Owner's 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

MB Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-4 20 00

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



Duke Power Company
A Duke Energy Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

W. R. McCollum, Jr.
Vice President

(864) 885-3107 OFFICE
(864) 885-3564 FAX

February 5, 1998

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Duke Energy Corporation
Oconee Nuclear Station, Unit 1
Docket No. 50-269
Forced Outage Steam Generator Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (b), the results of the Steam Generator Tube Inspection performed during the Unit 1 forced outage which began on December 28, 1997, are submitted.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators. The inspections using MRPC only reviewed the roll transition and reroll area and did not review the entire tube.

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	16	Bobbin
A	2232	MRPC
B	0	Bobbin
B	0	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
A	2	MRPC/Plus Point

3. The following information identifies the quantity of tubes removed from service by plugging. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	40	3
B	0	4

4. The following quantities of tubes were repaired in the upper tubesheet by rerolling.

<u>Steam Generator</u>	<u>Number of Tubes Repaired by Rerolling</u>	<u>Attachment</u>
A	2232*	5
B	0	6

* 2192 of these tubes remained in service, 40 were plugged and are included in the total of 40 plugged tubes.

5. There were no tubes repaired by sleeving in either steam generator during this outage.

If there are any questions you may contact Michael Bailey at (864) 885-4390.

Very truly yours,



W. R. McCollum, Jr.
Site Vice President

Attachments (6)

Steam Generator Outage Summary Report

Oconee Unit 1 August 1998 Forced Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: *Donald D. Cump* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/29/00*

Approved By: *Wynfanz* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: August 8, 1998 TO August 26, 1998
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 8/7/98 Revision

13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 9/16/98.

14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 9/16/98.

15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 9/16/98.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 8-8-98 to 8-26-98, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC 914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-4 20 00

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



W. R. McCollum, Jr.
Vice President

Duke Energy Corporation
Oconee Nuclear Station
P.O. Box 1439
Seneca, SC 29679
(864) 885-3107 OFFICE
(864) 885-3564 FAX

September 16, 1998

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 1
Docket No. 50-269
Unit 1 Forced Outage, August ,1998
Steam Generator Repair 30 Day Report
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (a) and 4.17.6 (b), the results of the Steam Generator Tube Repairs and Inspections performed during the Unit 1 Forced Outage, August, 1998 are submitted for your review. These repaired tubes were those previously mis-classified as Tube End Anomalies as reported in LER 269/98-08, submitted July 2, 1998.

1. The following quantities of tubes were repaired by rerolling in the upper tubes sheet.

<u>Steam Generator</u>	<u>No. of Tubes Rerolled</u>	<u>Attachment</u>
A	319	1
B	53	2

2. There were no tubes repaired by sleeving nor plugging in either steam generator.

September 16, 1998
U. S. Nuclear Regulatory Commission
Page 2

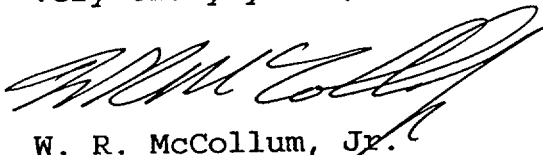
3. The following quantity of tubes were inspected from the inlet of the steam generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	319	MRPC
B	53	MRPC

4. No imperfections were detected on the tubes examined.
5. No tubes were removed from service as a result of this examination.

If there are any questions you may contact R. P. Todd at
(864) 885-3418.

Very truly yours,



W. R. McCollum, Jr.
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 1 1999 Outage EOC 18

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: Guadalupe Cump Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: Wyn Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: May 20, 1999 TO July 8, 1999
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 5.5.10 Steam Generator, 4/28/99 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 9/20/99.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 9/20/99.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 9/20/99.

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 7/10 20 00 Signed Duke Energy Corp. By Wery 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 5-20-99 to 7-8-99, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC917
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-4 20 00

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



W. R. McCollum, Jr.
Vice President

Duke Power

Oconee Nuclear Site
7800 Rochester Highway
Seneca, SC 29672
(864) 885-3107 OFFICE
(864) 885-3564 FAX

September 20, 1999

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station
Unit 1 EOC-18 Refueling Outage, May, 1999
Steam Generator Inservice Inspection
Steam Generator Three Month Report

As required by Technical Specification 5.6.8.b, the results of the Steam Generator Tube Inservice Inspection performed during the Unit 1 End of Cycle 18 refueling outage are submitted as Attachment A for your review.

Also included as Attachment B is a supplemental Inspection Assessment which we believe will be helpful in reviewing the overall results of our steam generator inspections.

If there are any questions you may contact R. C. Douglas at (864) 885-3073.

Very truly yours,

W. R. McCollum, Jr.
Site Vice President

Attachments

***Steam Generator
In-service Inspection Summary Report***

***Oconee Unit 1 2000
Outage EOC 19***

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-269

National Board No. N/A

Commercial Service Date: July 15, 1973

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

Revision 0

Prepared By: James H. Patton Date: 3/1/01

Reviewed By: BB Smyth Date: 3-5-01

Approved By: W. Sample Date: 3-5-01

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Oconee Unit 1 2000
Outage EOC 19***

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 1
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: July 15, 1973
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0003-55-1	N/A	N-103
Steam Generator B	Babcock & Wilcox	620-0003-55-2	N/A	N-104

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: November 26, 2000 TO December 15, 2000
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 5.5.10 Steam Generator, 1/18/00 Revision
13. Abstract of Examinations and Test. Reference attached Steam Generator In-service Inspection Summary Report
14. Abstract of Results of Examination and Tests. Reference attached Steam Generator In-service Inspection Summary Report
15. Abstract of Corrective Measures. Reference attached Steam Generator In-service Inspection 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 3-5- 20 01 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period November 26, 2000 to December 15, 2000, 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 Owner's 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 Owner's 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

C. G. Smith Commissions LA 360 NIC
Inspector's Signature National Board, State, Province, and Endorsements

Date 4-9 20 01

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

Attachment to Form NIS-1 Steam Generator In-service Inspection Summary Report

**Oconee Nuclear Station Unit 1 – 2000
Outage EOC-19**

Steam Generator Tubing Surveillance

1.0 Introduction

Eddy current examinations were performed on the 0.625" OD x 0.037" wall thickness Inconel 600 tubing, Inconel 600 plugs and the sleeved portion of the tubes in steam generators "A" and "B" at the Oconee Nuclear Station Unit 1 during the November –December 2000 refueling outage, ONS-1 EOC19.

2.0 Technical Summary

This section provides a technical summary of the eddy current examinations performed at Duke Energy's Oconee Nuclear Station Unit 1 during the end of cycle (EOC) 19 refueling outage.

The Inconel 600 tubing in the two Babcock and Wilcox once through steam generators (OTSG's) "A" and "B" were examined by various eddy current techniques. The tubing in the generators measures 0.625 inch nominal outside diameter with a 0.037 inch nominal wall thickness. Personnel from Duke Engineering & Services, Framatome Technologies (FTI), Rockridge Technologies (RTI), CoreStar, MoreTech, and ANATEC performed the examinations during the 19th refueling outage.

A magnetic-bias bobbin coil examination was performed on 14,974 tubes in steam generator "A" and 13,889 tubes in steam generator "B". This represented all in-service tubes in both steam generators. All in-service sleeves were examined with a bobbin coil probe. A "Plus-point" motorized rotating coil MRPC® probe was used to examine sleeve upper and lower rolls. Special Interest locations and upper tubesheet rolls and lower tubesheets were examined with two-coil MRPC® probe. A motorized rotating pancake coil was used on all Thimble Tube Plugs and roll plugs that were examined.

2.1 Summary

The following is summary of the results of the eddy current examinations for each of the steam generators.

OTSG A:

- Eddy current examinations began on 11/26/00 and were completed on 12/15/00.
- 76 tubes were removed from service by plugging.
- 14,974 tubes were examined with a bobbin coil probe.
- 3 tubes were reported to have indications of 40% thru-wall TW or greater with the bobbin coil probe examination.
- 20 tubes were reported to have indications of 20-39% TW with the bobbin coil probe examination.
- 247 sleeves were examined with a bobbin coil probe.
- 247 sleeves were examined with the Plus-point coil MRPC® probe at the upper and lower rolls.
- 209 tubes in the lane/wedge region were examined at the 15th tube support plate (TSP) and upper tubesheet secondary face (UTS) intersections with a 2-coil MRPC® probe.
- 14,741 Hot Leg Roll Transition HLRT rolls were examined with the Plus-point 2-coil MRPC® probe.
- 2,145 Lower Tube Sheets (LTS) were examined with the Plus-point 2-coil MRPC® probe.
- 5 Lower Tubesheet Rerolls were examined.
- 3,230 tubes were examined for special interest using the 2-coil MRPC® probe.
- 70 rolled plugs were examined with a motorized rotating pancake coil (24 Hot Leg and 46 Cold Leg)
- 63 Thimble Tube Plugs were examined with a motorized rotating pancake coil.

OTSG B:

- Eddy current examinations began on 11/26/00 and were completed on 12/15/00.
- 154 tubes were removed from service by plugging.
- 13,889 tubes were examined with a bobbin coil probe.
- 23 tubes were reported to have indications of 40% or greater with the bobbin coil probe examination.
- 90 tubes were reported to have indications of 20-39% TW with the bobbin coil probe examination.
- 180 tubes with sleeves were examined with a bobbin coil probe.
- 180 tubes with sleeves were examined with the Plus-point coil MRPC® probe at the upper and lower rolls.
- 193 tubes in the lane/wedge region were examined at the 15th TSP and UTS intersections with the 2-coil MRPC® probe.
- 13,711 HLRT rolls were examined with the Plus-point 2-coil MRPC® probe.
- 2074 LTS were examined with the Plus-point 2-coil MRPC® probe.
- 92 Lower Tubesheet Rerolls were examined.
- 3,256 tubes were examined for special interest using the 2-coil MRPC® probe.
- 155 Rolled plugs were examined with a motorized rotating pancake coil (49 Hot Leg and 106 Cold Leg).
- 64 Thimble Tube Plugs were examined with a motorized rotating pancake coil.

2.2 Examinations

The examination, equipment and personnel were in compliance with the requirements of the Duke Engineering & Services NDE Program Manual for In-service Inspection, the applicable Duke Power Co. 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 the "Eddy Current Analysis Guidelines for Oconee Nuclear Station Unit 1, EOC-19.

The steam generator tubing examinations were performed by technicians qualified to Level II, or Level I under direct supervision of personnel qualified to Level II in accordance with Duke Engineering & Services procedure NDE-B. The data was evaluated by personnel qualified to a minimum of Level IIA in accordance with Duke Engineering & Services procedure NDE-B. The examination and evaluation procedures used during the eddy current examinations were approved by personnel qualified to Level III in accordance with Duke Engineering & Services procedure NDE-B.

All inspection frequencies were generated using a Zetec MIZ®-30 remote data acquisition unit.

The bobbin coil examinations were performed with 0.510 inch, 0.500 inch, and 0.480 inch diameter probes. The inspection frequencies used were 600, 400, 200 and 35 kHz operating in both differential and absolute modes. A 400/200 kHz differential tube support plate suppression mix was used to enhance the detection of indications occurring at TSP intersections.

The sleeve examinations were performed with a 0.400 inch diameter bobbin coil probe. The inspection frequencies used were 400, 250, 150 and 75 kHz operating in the differential and absolute mode. A 400/150 kHz differential tube support plate suppression mix was used to enhance the detection of indications occurring at TSP intersections. Sleeve roll expansions were inspected using a .400 inch diameter plus-point coil MRPC® probe. The inspection frequencies used were 200, 120, 75 and 50 kHz operating in the differential mode.

The Roll Plug examinations were performed with a 0.410 inch diameter MRPC® pancake coil probe with the inspection frequencies of 300, 200, 100 and 15 kHz.

The Thimble Tube Plug examinations were performed with a 0.450 inch diameter MRPC® plus point coil probe with the inspection frequencies of 250, 150, 75 and 25 kHz.

The lane & wedge and special interest examinations were performed with 0.520 and 0.460 inch diameter 2-coil MRPC® probes. The inspection frequencies used were 300, 200, 100 and 15 kHz. A 300/100 kHz TSP suppression mix on the pancake coil was used to enhance the detection of indications occurring at TSP intersections.

Official results of the data analysis were recorded on optical disks and verified by two Eddy Current Data Management systems, Framatome Data Management System, (FDMS) and EddyNet® Inspection Management System, (EIMS). These systems are used to check the data for invalid analysis entries, perform data sorting routines, ensure all the proper tubes were examined and to printout final data sheets.

Note: Table I contains a list of all three-letter codes and acronyms used throughout this report.

2.3 Areas of Concern

In OTSG's, certain modes of degradation have been identified in specific regions of the generator.

Eddy current examinations cannot, in all cases, determine the actual cause of damage. The signal recorded during the eddy current examination can be used to estimate the physical size of any tube damage detected (i.e., penetration into the wall, axial extent), however, the actual type of degradation and its cause can only be determined by tube removal and metallurgical studies.

- a) Impingement Erosion – An erosion/corrosion type of discontinuity occurring from the flow of secondary side water with contaminants or debris entrapped in the secondary side fluid stream.
- b) High Cycle Fatigue - OD circumferential cracking normally occurring in the vicinity of the 15th TSP or upper tubesheet secondary face UTS in the open lane & wedge region. The initiating mechanism for high-cycle fatigue is believed to be a combination of surface damage from corrosion, fretting and high crossflow velocities.
- c) Wear - Wear fretting occurs at TSP intersections in tubes near the periphery or outermost rows in the generator. This damage mechanism is caused by flow-induced mechanical vibrations, which are influenced by design parameters, environmental and operating conditions.
- d) Inter-granular Stress Corrosion Cracking (IGSCC) – Tube pull results have confirmed the presence of axially oriented inter-granular stress corrosion cracking. IGSCC has been primarily confirmed at locations from the 7th TSP and higher. This problem is not associated with a particular region of the steam generator. Indications are characterized as axial and may display a multiple intermittent response over several inches. IGSCC has been confirmed in the sludge pile on the lower tubesheet and noted at the upper tubesheet and dented TSP locations.
- e) Inside Diameter Inter-granular Attack (ID IGA) – Numerous indications indicative of ID IGA have been reported in the upper tubesheet of Oconee Unit 1, SG B. This mechanism is not believed to be active and is believed to have been initiated as a result of the manufacturing process and unique to SG B of Unit 1.
- f) Primary Water Stress Corrosion Cracking (PWSCC) – PWSCC has been confirmed through tube pulls in the upper tube end (Hot Leg) roll expansion. Indications are generally axially oriented and located in the transition or the expanded region. Plugs and sleeves are also susceptible to this type of damage mechanism.

- g) Inter-granular Attack (IGA) – OD initiated IGA has been detected at the upper spans and within the upper tubesheet crevice, lower tubesheet crevice and first span pit-like IGA.

2.4 Results - OTSG A:

The following paragraphs detail the results of the various eddy current examinations performed in OTSG A. A total of seventy-six (76) tubes were removed from service by plugging based on the results of the following eddy current examinations.

2.4.1 Bobbin Coil Examination

Fourteen thousand nine hundred seventy-four (14,974) tubes were examined during the bobbin inspection. Of those tubes examined, Three (3) tubes were reported to have indications measuring 40% TW or greater. Twenty (20) tubes were reported to have indications measuring 20-39% TW. Fourteen (14) tubes were reported to have indications measuring less than 20% TW. One thousand ninety-seven (1,097) tubes were reported to have non-quantifiable indications that were designated as ADI, NQI or DWI.

2.4.2 Bobbin Coil Sleeve Examination

Two hundred forty-seven (247) tubes, which contained sleeves, were examined with a bobbin coil probe. Two (2) sleeves were reported to have DNT.

2.4.3 Lane and Wedge Examination

Two hundred nine (209) tubes in the lane & wedge region were examined at the 15th TSP and the UTS with a 2-coil MRPC® probe. No indications were reported.

2.4.4 Special Interest Examinations

Three thousand two hundred thirty (3,230) tubes were examined at various locations (utilizing the bobbin results) with a 2-coil MRPC® probe. No tube was reported to have a wear indication of 40% TW or greater. Sixty-four (64) tubes were reported to have indications of WAR 20-39% TW. Four hundred fourteen (414) tubes were reported to have wear indications of less than 20% TW. Two hundred thirty-two (232) tubes were reported to have VOL calls. Twelve (12) tubes were reported to have single axial indications

(SAI). No tubes were reported to have NQI, MAI, SCI, MCI, SVI, MVI or MMI.

2.4.5 MRPC® of Sleeve Rolls

Two hundred forty seven (247) sleeves were examined at the upper and lower rolls with a 2-coil MRPC® probe. One hundred seventy two (172) sleeves were reported to have a Distorted Roll Signal (DRS). Eight (8) sleeves were reported to have a VOL call. One (1) sleeve was reported to have SVI. No sleeves were reported to have NQI, MAI, SCI, or MCI, MMI, SAI, or MVI.

2.4.6 HLRT Roll Examination

Fourteen thousand seven hundred forty-one (14,741), tube rolls were examined with a 2-coil MRPC® probe. Five (5) tubes were reported to have VOL calls. Nineteen (19) tubes were reported to have MAI. Fifty-five (55) tubes were reported to have SAI. Four (4) tubes were reported to have SCI. One (1) tube was reported MCI. No tubes were reported to have NQI, TEA, SVI, MVI or MMI.

2.4.7 Lower Tubesheet Kidney Region

Two thousand one hundred forty five (2145) tubes were examined at the LTS interface with a 2-coil MRPC® probe. One (1) tube was reported to have a SAI. No tubes were reported to have NQI, MAI, SCI, MCI, MMI, VOL, SVI or MVI.

2.4.8 Lower Tubesheet Re-rolls

Five (5) tubes lower tubesheet re-rolls were examined with a 2-coil MRPC® probe. No indications were reported.

2.4.9 Plugs

Twenty-four (24) Hot Leg (H/L) and forty-six (46) Cold Leg (C/L) plugs were examined with a single coil MRPC® probe. These mechanically rolled plugs were all I-600 material. One (1) C/L plug was reported to have a SAI. Two H/L plugs were reported to have MAI. No other indications were reported.

2.4.10 Thimble Plugs

Sixty-three (63) Thimble plugs were examined with a single Plus-point coil MRPC® probe. One (1) plug was reported to have VOL, One (1) plug was reported to have DNT.

2.5 Results - OTSG B

The following paragraphs detail the results of the various eddy current examinations performed in OTSG B. A total of one hundred fifty-four (154) tubes were removed from service by plugging based on the results of the following eddy current examinations.

2.5.1 Bobbin Coil Examination

Thirteen thousand eight hundred eighty nine (13,889) tubes were examined during the bobbin inspection. Of those tubes examined, twenty-three (23) tubes were reported to have indications measuring 40% TW or greater. Ninety (90) tubes were reported to have indications measuring 20-39% TW. Seventy-four (74) tubes were reported to have indications measuring less than 20% TW. Two thousand forty (2040) tubes were reported to have non-quantifiable indications that were designated as ADI, NQI or DWI.

2.5.2 Bobbin Sleeve Examination

One hundred eighty (180) tubes, which contained sleeves, were examined with a bobbin probe. Seven (7) tubes were reported to have indications of degradation in the sleeved portion of the tube.

2.5.3 Lane and Wedge Examination

One hundred ninety three (193) tubes in the lane & wedge region were examined at the 15th TSP and the UTS with a 2-coil MRPC® probe. Two (2) tubes were reported to have WAR. No other tubes were reported to have indications of degradation in the area of interest.

2.5.4 Special Interest Examination

Three thousand two hundred fifty six (3256) tubes were examined at various locations (utilizing the bobbin results) with a 2-coil MRPC® probe. No tubes were reported to have indications of WAR

40% TW and greater. One hundred two (102) tubes were reported to have indications of WAR 20-39% TW. One thousand ten (1010) tubes were reported to have indications of WAR less than 20% TW. Seven hundred twenty (720) tubes were reported to have VOL calls. Twenty-six (26) tubes were reported to have SAI. Eighteen (18) tubes were reported to have SVI. No tubes were reported to have NQI, MAI, MCI, SCI, MVI, or MMI.

2.5.5 MRPC® of Sleeve Rolls

One hundred eighty (180) upper and lower rolls in sleeves were examined with a plus point coil MRPC® probe. Ninety-three (93) sleeves were reported to have a DRS. Eight (8) sleeves were reported to have VOL calls. One (1) sleeve was reported to have SVI. No sleeves were reported to have NQI, MAI, SAI, SCI, MCI, MMI, PVN, or MVI.

2.5.6 HLRT Roll Examination

Thirteen thousand seven hundred eleven (13,711), tube rolls were examined with a 2-coil MRPC® probe. Eighteen (18) tubes were reported to have VOL calls. Six (6) tubes were reported to have MAI. Thirty-three (33) tubes were reported to have SAI. Sixty-three (63) tubes were reported to have SCI. Nine (9) tubes were reported to have MCI. Forty-four (44) tubes was reported to have SVI. Four (4) tubes was reported to have MVI. Four thousand four hundred fifty-six (4456) tubes were reported to have TEA. No tubes were reported to have NQI, or MMI.

2.5.7 Lower Tubesheet Kidney Region

Two thousand seventy four (2074) tubes were examined at the LTS interface. Eight (8) tubes were reported to have VOL calls. No tubes were reported to have NQI, SAI, MAI, SCI, MCI, MMI, SVI, or MVI.

2.5.8 Lower Tubesheet Rerolls

Ninety-two (92) tubes lower tubesheet re-rolls were examined with a 2-coil MRPC® probe. One (1) tube was reported to have VOL. One (1) tube was reported to have DNT. One (1) tube was reported to have TEA. No tubes were reported to have NQI, SAI, MAI, SCI, MCI, MMI, SVI, or MVI.

2.5.9 Plugs

Forty-nine (49) H/L and one hundred six (106) C/L plugs were examined with a single-coil MRPC® probe. These mechanically rolled plugs were all I-600 material. Five (5) H/L plugs were reported to have indications. Two (2) were reported to have MAI. Three (3) were reported to have SAI. No other indications were reported.

2.5.10 Thimble Plugs

Sixty-four (64) Thimble plugs were examined with a single Plus-point coil MRPC® probe. One (1) plug was reported to have a VOL indication.

2.6 Documentation

All original data including analyst report and resolution results are stored on optical discs and will be retained by Duke Power Company. The eddy current results for all tubes examined, which includes, lists of tubes containing indications 0-100% TW, ADI, NQI and all tubes removed from service are contained in the FDMS and Zetec, Data Management data bases.

TABLE I
DESCRIPTIONS

<u>CODE</u>	<u>DESCRIPTION</u>
ADI	Absolute Drift Indication
AXI	Axial Indication
FTI	Framatome Technologies
DRS	Distorted Roll Signal
DWI	Dent With Indication
HLRT	Hot Leg Roll Transition
IDI	Inside Diameter Indication
LTP	Lower Tubesheet Primary face
LTS	Lower Tubesheet Secondary face
MAI	Multiple Axial Indication
MCI	Multiple Circumferential Indication
MMI	Mix Mode Indication
MVI	Multiple Volumetric Indication
MRPC	Motorized Rotating Pancake Coil
NDD	No Degradation Detected
NQI	Non-Quantifiable Indication
OD	Outside Diameter
ODI	Outside Diameter Indication
OTSG	Once-Through Steam Generator
PVN	Permeability
PWSCC	Primary Water Stress-Corrosion Cracking
QA	Quality Assurance
RBD	Retest - Bad Data
RIC	Retest - Incomplete
RNC	Retest - Number Check
SAI	Single Axial Indication
SCI	Single Circumferential Indication
SVI	Single Volumetric Indication
TEA	Tube End Anomalies
TSP	Tube Support Plate
TW	Through Wall
TWD	Through Wall Depth
UTP	Upper Tubesheet Primary face
UTS	Upper Tubesheet Secondary face
VOL	Volumetric indication



W. R. McCollum, Jr.
Vice President

Duke Power

Oconee Nuclear Site
7800 Rochester Highway
Seneca, SC 29672
(864) 885-3107 OFFICE
(864) 885-3564 FAX

March 21, 2001

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555


Subject: Oconee Nuclear Station
Docket No. 50-269
Unit 1 EOC-19 Refueling Outage, November 2000
Steam Generator Inservice Inspection
Steam Generator Three Month Report

As required by Technical Specification 5.6.8.b, the results of the Steam Generator (SG) Tube Inservice Inspection performed during the Unit 1 End of Cycle 19 refueling outage are submitted as Enclosure A for your review.

Enclosure B provides a supplemental Inspection Assessment we believe will be helpful in reviewing the overall results of our steam generator inspections. Enclosure B also provides a summary of estimated primary-to-secondary leakage from the SGs in their as-found condition following a postulated Loss of Coolant Accident. This summary is required by License Condition 6 described in the letter from D. E. LaBarge to Duke Energy Corporation, dated December 15, 2000.

If there are any questions you may contact R. C. Douglas at (864) 885-3073.

Very truly yours,



W. R. McCollum, Jr.
Site Vice President

Attachments

U. S. Nuclear Regulatory Commission
March 21, 2001

Page 2

xc w/attachments: Mr. Luis A. Reyes
 Regional Administrator, Region II

xc w/o attachments: Mr. M. C. Shannon
 NRC Senior Resident Inspector

 Mr. D. E. LaBarge
 ONRR, Senior Project Manager

 Mr. Virgil R. Autry
 DHEC

Steam Generator Outage Summary Report

Oconee Unit 2 1993 EOC 13 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: Sheldon W. Camp Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: Wm. Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: April 29, 1993 TO June 24, 1993
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 4/8/93 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 8/23/93.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 8/23/93.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 8/23/93.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 3-29-93 to 6-24-93, 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 Owner's 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 Owner's 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

M. B. Chapman Commissions NC 914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax



DUKE POWER

August 23, 1993

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-270
Steam Generator Inservice Inspection
Unit 2 Three (3) Month Report

As required by our Technical Specification 4.17.6(b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 EOC 13 refueling outage.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>
A	9,544
B	10,085

2. The following information identifies the location and percent of wall-thickness penetration for each indication of a degraded tube:

<u>Steam Generator</u>	<u>Attachment</u>
A	1
B	2

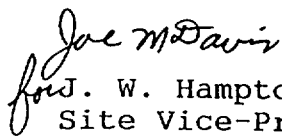
3. The following information identifies the tubes removed from service by plugging. There were no tubes repaired by sleeving in either Steam Generator:

<u>Steam Generator</u>	<u>Number of Tubes Plugged</u>	<u>Attachment</u>
A	35	3
B	79	4

U. S. Nuclear Regulatory Commission
Page 2

If there are any questions you may contact M. E. Patrick at (803)
885-3292.

Very truly yours,


J. W. Hampton
Site Vice-President

Attachment

xc: Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Heyward G. Shealy
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Steam Generator Outage Summary Report

Oconee Unit 2 July 1994 Tube Leak Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: Donald W. Camp Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: W. M. Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: July 27, 1994 TO August 8, 1994
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 6/8/94 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 8/16/94.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 8/16/94.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 8/16/94.

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 7/10 20 00 Signed Duke Energy Corp. By WY 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 7-27-94 to 8-8-94, 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 Owner's 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 Owner's 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

MB Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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

Duke Power Company
Oconee Nuclear Generation Department
P.O. Box 1439
Seneca, SC 29679

J.W. HAMPTON
Vice President
(803)885-3499 Office
(704)373-5222 FAX



DUKE POWER

August 16, 1994

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-270
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by our Technical Specifications 4.17.6(a) & (b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 Tube Leak outage.

1. The following quantity of tubes were inspected from the inlet or outlet of Steam Generator A, with previous Eddy Current data being reviewed for Steam Generator B:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	5	Bobbin
A	220	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
A	2	MRPC

U. S. Nuclear Regulatory Commission
Page 2

3. The following information identifies the tubes removed from service by plugging. (The tubes are identified in the attachments). There were no tubes repaired by sleeving in either Steam Generator. Only Steam Generator A was inspected.

<u>Steam Generator</u>	<u>Number of Tubes Plugged</u>	<u>Attachment</u>
A	10	3
B	2	4

If there are any questions you may contact D. A. Nix at (803) 885-3634.

Very truly yours,

for Joe M. Davis
J. W. Hampton
Site Vice-President

Attachment

xc w/attachment: Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

bxc w/o att: Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Virgil R. Autry
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Steam Generator Outage Summary Report

Oconee Unit 2 1994 EOC 14 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: *Gerald W. Crump* Date: *6/29/00*

Reviewed By: *James H. Batton* Date: *6/30/00*

Approved By: *Wyn Sample* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: October 6, 1994 TO November 18, 1994
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 6/8/94 Revision

13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 11/17/94.

14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 11/17/94.

15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 11/17/94.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 10-6-94 to 11-18-94, 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 Owner's 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 Owner's 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

MB Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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

November 17, 1994

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 2
Docket No. 50-270
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by our Technical Specifications 4.17.6(a) & (b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 EOC 14 refueling outage.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	9431	Bobbin
A	556	MRPC
B	9764	Bobbin
B	803	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC
B	4	MRPC

3. The following information identifies the tubes removed from service by plugging. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	35	5
B	40	6

4. The following information identifies the tubes repaired by sleeving. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Repaired by Sleeving</u>	<u>Attachment</u>
A	157	7
B	143	8

If there are any questions you may contact D. A. Nix at (803) 885-3634.

Very truly yours,

J. W. Hampton
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 2 1996 EOC 15 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: *Gerald W. Camp* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/30/00*

Approved By: *W. Sample* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: March 28, 1996 TO May 7, 1996
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 2/7/96 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 6/5/96.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 6/5/96.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 6/5/96.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 3-28-96 to 5-7-96, 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 Owner's 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 Owner's 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

M. B. Chapman Commissions NC 914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(864)885-3499 Office
(864)885-3564 Fax



DUKE POWER

June 5, 1996

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 2
Docket No. 50-270
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (a) and (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 End of Cycle 15 refueling outage are submitted for review.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	15393	Bobbin
A	1213	MRPC
B	15263	Bobbin
B	2124	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC
B	4	MRPC


3. The following information identifies the quantity of tubes removed from service by plugging. (The tubes are identified in the attachments). There were no tubes repaired by sleeving in either steam generator.

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	199	5
B	213	6

Duke will provide additional information regarding indications observed in the steam generator tubes inspected by eddy current. Duke will also provide additional information regarding eddy current testing performed on tube samples removed from the steam generators. Currently the test results are being reviewed and compiled. This additional information will be submitted as soon as possible as an addendum to the 3 month steam generator inspection report.

If there are any questions you may contact D. A. Nix at (864) 885-3634.

Very truly yours,


J. W. Hampton for
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 2 1998 EOC 16 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: *Gerald W. Cump* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/30/00*

Approved By: *W. M. Kangle* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: March 13, 1998 TO May 24, 1998
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 2/26/98 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 8/19/98.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 8/19/98.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 8/19/98.

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 7/10 20 00 Signed Duke Energy Corp. By W. J. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 3-13-98 to 5-24-98, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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



W. R. McCollum, Jr.
Vice President

Duke Energy Corporation

Oconee Nuclear Station
P.O. Box 1439
Seneca, SC 29679
(864) 885-3107 OFFICE
(864) 885-3564 FAX

August 19, 1998

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 2
Docket No. 50-27)
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 End of Cycle 16 refueling outage are submitted as Attachment B for your review.

Also included as Attachment A is a supplementary Inspection Assessment which we believe will be helpful in reviewing the overall results of our steam generator inspections.

If there are any questions you may contact R. P. Todd at (864) 885-3418.

Very truly yours,

A handwritten signature in black ink, appearing to read 'WR McCollum, Jr.', written over a horizontal line.

W. R. McCollum, Jr.
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 2 1999 EOC 17 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: Mald W. Camp Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: Wry Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: November 4, 1999 TO December 16, 1999
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 5.5.10 Steam Generator, 10/1/99 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 3/2/00.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 3/2/00.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 3/2/00.

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 7/10 20 00 Signed Duke Energy Corp. By [Signature]
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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 11-4-99 to 12-16-99, 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 Owner's 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 Owner's 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 NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 8-11 20 00

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



W. R. McCollum, Jr.
Vice President

Duke Power

Oconee Nuclear Site
7800 Rochester Highway
Seneca, SC 29672
(864) 885-3107 OFFICE
(864) 885-3564 FAX

March 2, 2000

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555


Subject: Oconee Nuclear Station
Unit 2 EOC-17 Refueling Outage, December 1999
Steam Generator Inservice Inspection
Steam Generator Three Month Report

As required by Technical Specification 5.6.8.b, the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 End of Cycle 17 refueling outage are submitted as Attachment A for your review.

Also included as Attachment B is a supplemental Inspection Assessment which we believe will be helpful in reviewing the overall results of our steam generator inspections.

If there are any questions you may contact R. C. Douglas at
(864) 885-3073.

Very truly yours,



W. R. McCollum, Jr.
Site Vice President

Attachments

***Steam Generator
In-service Inspection Summary Report***

***Oconee Unit 2 2001
Outage EOC 18***

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-270

National Board No. N/A

Commercial Service Date: September 9, 1974

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

Revision 0

Prepared By: James H. Patton Date: 7/10/01

Reviewed By: Daniel B. Mayes Date: 7/16/01

Approved By: Thomas Sample Date: 7/16/01

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In-service Inspection Summary Report
Oconee Unit 2 2001
Outage EOC 18***

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Attachment to Form NIS-1 Steam Generator In-service Inspection Summary Report

**Oconee Nuclear Station Unit 2 – 2001
Outage EOC-18**

Steam Generator Tubing Surveillance

1.0 Introduction

Eddy current examinations were performed on the 0.625" OD x 0.037" wall Inconel 600 tubing, Inconel 600 and 690 plugs and the sleeved portion of the tubes in steam generators "A" and "B" at the Oconee Nuclear Station Unit 2 during the April 2001 refueling outage ONS#2 EOC18.

Duke Engineering and Services prepared this report as a summary of the eddy current results.

2.0 Technical Summary

This section provides a technical summary of the eddy current examinations performed at Duke Energy's, Oconee Nuclear Station, Unit 2 EOC18.

The Inconel 600 tubing in the two Babcock and Wilcox once through steam generators (OTSG's) "A" and "B" were examined by various eddy current techniques. The tubing in the generators measures 0.625 inch nominal outside diameter with a 0.037 inch nominal wall thickness. Personnel from Duke Engineering & Services, Framatome ANP (FTI/ANP), Zetec, MoreTech, and ANATEC performed the examinations during the 18th refueling outage.

A magnetic-bias bobbin coil examination was performed on 14638 tubes in steam generator "A" and 14854 tubes in steam generator "B". All in-service sleeves were examined with a bobbin coil probe. A "plus-point" motorized rotating coil MRPC[®] probe was used to examine sleeve upper and lower rolls. Special Interest locations, upper tubesheet rolls and lower tubesheets were examined with two-coil MRPC[®] probe.

2.1 Summary

The following is summary of the results of the eddy current examinations for each generator.

OTSG A:

- Eddy current examinations began on 05/01/01 @ 0832 and were completed on 05/12/01 @ 1819.
- 193 tubes were removed from service by plugging.
- 11 tubes were repaired using FTI/ANP "Re-rolling" process
- 14854 tubes were examined with a bobbin coil probe.
- 3 tubes were reported to have indications of 40% thru-wall, (TW) or greater with the bobbin coil probe examination.
- 28 tubes were reported to have indications of 20-39% TW with the bobbin coil probe examination.
- 275 sleeves were examined with a bobbin coil probe.
- 275 sleeves were examined with the plus point coil MRPC® probe at the upper and lower rolls.
- 213 tubes in the lane/wedge region were examined at the 015-tube support plate, (TSP) and upper tubesheet secondary face, (UTS) intersections with a 2-coil MRPC® probe.
- 14579 Hot Leg Roll Transition, (HLRT) rolls were examined with the plus point 2-coil MRPC® probe.
- 2095 Lower Tube Sheets, (LTS) were examined with the plus point 2-coil MRPC® probe.
- 2 Lower Tubesheet Manufacture Re-rolls were examined.
- 1562 tubes were examined for special interest, (SI) using the 2-coil MRPC® probe.

OTSG B:

- Eddy current examinations began on 04/31/01 @ 1655 and were completed on 05/13/01 @ 1830.
- 235 tubes were removed from service by plugging.
- 60 tubes were repaired using FTI/ANP "Re-rolling" process
- 14638 tubes were examined with a bobbin coil probe.
- 4 tubes were reported to have indications of 40% or greater with the bobbin coil probe examination.
- 51 tubes were reported to have indications of 20-39% TW with the bobbin coil probe examination.
- 252 tubes with sleeves were examined with a bobbin coil probe.
- 252 tubes with sleeves were examined with the plus-point coil MRPC[®] probe at the upper and lower rolls.
- 204 tubes in the lane/wedge region were examined at the 015 TSP and UTS intersections with the 2-coil MRPC[®] probe.
- 14386 HLRT rolls were examined with the plus point 2-coil MRPC[®] probe.
- 2110 LTS were examined with the plus point 2-coil MRPC[®] probe.
- 1 Lower Tubesheet Manufacture Re-roll was examined.
- 2570 tubes were examined for special interest using the 2-coil MRPC[®] probe.

2.2 Examinations

The examination, equipment and personnel were in compliance with the requirements of the Duke Engineering & Services NDE Program Manual for In-service Inspection, the applicable Duke Power Co. 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 the "Eddy Current Analysis Guidelines for Oconee Nuclear Station Unit 2, EOC-18.

The steam generator tubing examinations were performed by technicians qualified to Level II, or Level I under direct supervision of personnel qualified to Level II in accordance with Duke Engineering & Services procedure NDE-B. The data was evaluated by personnel qualified to a minimum of Level IIA in accordance with Duke Engineering & Services procedure NDE-B. The examination and evaluation procedures used during the eddy current examinations were approved by personnel qualified to Level III in accordance with Duke Engineering & Services procedure NDE-B.

All inspection frequencies were generated using a Zetec MIZ[®]-30 remote data acquisition unit.

The bobbin coil examinations were performed with 0.510 inch, 0.500 inch, and .480 inch diameter probes. The inspection frequencies used were 600, 400, 200 and 35 kHz operating in both differential and absolute modes. A 400/200 kHz differential tube support plate suppression mix was used to enhance the detection of indications occurring at TSP intersections.

The sleeve examinations were performed with a 0.400 inch diameter bobbin coil probe. The inspection frequencies used were 400, 250, 150 and 75 kHz operating in the differential and absolute mode. A 400/150 kHz differential tube support plate suppression mix was used to enhance the detection of indications occurring at TSP intersections. Sleeve roll expansions were inspected using a 0.400 inch diameter plus-point coil MRPC[®] probe. The inspection frequencies used were 200, 120, 75 and 50 kHz operating in the differential mode.

The lane & wedge and special interest examinations were performed with 0.460 inch diameter 2-coil MRPC[®] probes. The inspection frequencies used were 300, 200, 100 and 15 kHz. A 300/100 kHz TSP suppression mix on the pancake coil was used to enhance the detection of indications occurring at TSP intersections.

Official results of the data analysis were recorded on optical disks and verified by two Eddy Current Data Management systems, Framatome Data Management System (FDMS) and EddyNet[®] Inspection Management System (EIMS). These systems are used to check the data for invalid analysis entries, perform data sorting routines, ensure all the proper tubes were examined and to printout final data sheets.

Note: Table I contains a list of all three-letter codes and acronyms used throughout this report.

2.3 Areas of Concern

In OTSG's, certain modes of degradation have been identified in specific regions of the generator.

Eddy current examinations cannot, in all cases, determine the actual cause of damage. The signal recorded during the eddy current examination can be used to estimate the physical size of any tube damage detected (i.e., penetration into the wall, axial extent), however, the actual type of degradation and its cause can only be determined by tube removal and metallurgical studies.

- a) Impingement Erosion – An erosion/corrosion type of discontinuity occurring from the flow of secondary side water with contaminants or debris entrapped in the secondary side fluid stream.
- b) High Cycle Fatigue - OD circumferential cracking normally occurring in the vicinity of the 15th TSP or upper tubesheet secondary face UTS in the open lane & wedge region. The initiating mechanism for high-cycle fatigue is believed to be a combination of surface damage from corrosion, fretting and high crossflow velocities.
- c) Wear - Wear fretting occurs at TSP intersections in tubes near the periphery or outermost rows in the generator. This damage mechanism is caused by flow-induced mechanical vibrations, which are influenced by design parameters, environmental and operating conditions.
- d) Inter-granular Stress Corrosion Cracking (IGSCC) – Tube pull results have confirmed the presence of axially oriented inter-granular stress corrosion cracking. IGSCC has been primarily confirmed at locations from the 007TSP and higher. This problem is not associated with a particular region of the steam generator. Indications are characterized as axial and may display a multiple intermittent response over several inches. IGSCC has been confirmed in the sludge pile on the lower tubesheet and noted at the upper tubesheet and dented TSP locations.
- e) Inside Diameter Inter-granular Attack (ID IGA) – Numerous indications indicative of ID IGA have been reported in the upper tubesheet of Oconee Unit 1, SG B. This mechanism is not believed to be active and is believed to have been initiated as a result of the manufacturing process and unique to SG B of Unit 1.

- f) Primary Water Stress Corrosion Cracking (PWSCC) – PWSCC has been confirmed through tube pulls in the upper tube end (Hot Leg) roll expansion. Indications are generally axially oriented and located in the transition or the expanded region. Plugs and sleeves are also susceptible to this type of damage mechanism.
- g) Inter-granular Attack (IGA) – OD initiated IGA has been detected at the upper spans and within the upper tubesheet crevice, lower tubesheet crevice and first span pit-like IGA.

2.4 Results

A number of indications within both generators were given a non-quantifiable (NQL) code in the percent through-wall column. This code was used during the bobbin examinations for indications where an accurate depth determination could not be made.

Additionally, a number of indications within both generators were reported as an Absolute Drift Indication (ADI) in the percent through-wall column. These are indications of degradation that could not be accurately quantified on differential channels.

2.5 OTSG A:

The following paragraphs detail the results of the various eddy current examinations performed in OTSG A. A total of one hundred and ninety three (193) tubes were removed from service based on the results of the following eddy current examinations. Refer to Data Management Report for results and specific tube numbers for tubes plugged during the outage. Eleven (11) tubes were repaired by the FTI/ANP re-roll process and remain in service.

2.5.1 Bobbin Coil Examination

Fourteen thousand eight hundred and eighty-four (14854) tubes were examined during the bobbin inspection. Of those tubes examined, three (3) tubes were reported to have indications measuring 40% TW or greater. Twenty-eight (28) tubes were reported to have indications measuring 20-39% TW. Twenty-six (26) tubes were reported to have indications measuring less than 20% TW. One thousand one hundred and twenty-seven (1127) tubes were reported to have non-quantifiable indications that were designated as ADI, NQL or DWI.

2.5.2 Bobbin Coil Sleeve Examination

Two hundred and seventy five (275) tubes, which contained sleeves, were examined with a bobbin coil probe. No indications were reported.

2.5.3 Lane and Wedge Examination

Two hundred and thirteen (213) tubes in the lane & wedge region were examined at the 015-TSP and the UTS with a 2-coil MRPC® probe. Two (2) tubes were reported to have a VOL. No tubes were reported to have MAI, SCI, MCI, SVI, MVI or MMI.

2.5.4 Special Interest Examinations

One thousand five hundred and sixty two (1562) tubes were examined at various locations (utilizing the bobbin results) with a 2-coil MRPC® probe. No tubes were reported to have a wear indication of 40% TW or greater. Thirty-six (36) tubes were reported to have indications of WAR 20-39% TW. Three hundred and eighty-nine (389) tubes were reported to have wear indications of less than 20% TW. One hundred and forty-four (144) tubes were reported to have (VOL). One hundred and sixty-four (164) tubes were reported to have (SAI). No tubes were reported to have NQI, MAI, SCI, MCI, SVI, MVI or MMI.

2.5.5 MRPC® of Sleeve Rolls

Two hundred seventy-five (275) sleeves were examined at the upper and lower rolls with a 2-coil MRPC® probe. Three (3) sleeves were reported to have a VOL. No sleeves were reported to have DRS, NQI, MAI, SCI, MCI, MMI, SAI, SVI, or MVI.

2.5.6 HLRT Roll Examination

Fourteen thousand five hundred and seventy-nine (14579), tube rolls were examined with a 2-coil MRPC® probe. One (1) tube was reported to have MAI. Eleven (11) tubes were reported to have SAI. Sixteen (16) tubes were reported to have SCI. One (1) tube was reported MMI. One (1) tube was reported as PVN in the reroll. Six Hundred forty-six (646) tubes were reported to have Tube End Anomalies, (TEA). No tubes were reported to have NQI, SVI, MVI, MCI, MMI, or VOL.

2.5.7 Lower Tubesheet Kidney Region

Two thousand and ninety-five (2095) tubes were examined at the LTS interface with a 2-coil MRPC[®] probe. One (1) tube was reported to have a VOL. No tubes were reported to have NQI, MAI, SCI, MCI, MMI, SAI, SVI or MVI.

2.5.8 Lower Tubesheet Re-rolls

Two (2) tubes with lower tubesheet manufacture re-rolls were examined with a 2-coil MRPC[®] probe. No indications were reported.

2.5.9 Plug Visual Examination

Six hundred and seventy-seven (677) plugs in each leg were examined with remote video. No plugs required repair.

2.6 OTSG B

The following paragraphs detail the results of the various eddy current examinations performed in OTSG B. A total of one hundred fifty-four (154) tubes were removed from service by plugging based on the results of the following eddy current examinations. Refer to Data Management Report for detailed results and specific tube numbers for tubes plugged during the outage. Sixty (60) tubes were repaired by the FTI/ANP re-roll process and remain in service.

2.6.1 Bobbin Coil Examination

Fourteen thousand six hundred and thirty-eight (14638) tubes were examined during the bobbin inspection. Of those tubes examined, four (4) tubes were reported to have indications measuring 40% TW or greater. Fifty-one (51) tubes were reported to have indications measuring 20-39% TW. One hundred and two (102) tubes were reported to have indications measuring less than 20% TW. One thousand and seventy-four (1734) tubes were reported to have non-quantifiable indications that were designated as ADI, NQI or DWI.

2.6.2 Bobbin Sleeve Examination

Two hundred and fifty-two (252) tubes, which contained sleeves, were examined with a bobbin probe. No indications were reported.

2.6.3 Lane and Wedge Examination

Two hundred and four (204) tubes in the lane & wedge region were examined at the 015-TSP and the UTS with a 2-coil MRPC[®] probe. No indications were reported.

2.6.4 Special Interest Examination

Two Thousand five hundred and seventy (2570) tubes were examined at various locations (utilizing the bobbin results) with a 2-coil MRPC[®] probe. No tubes were reported to have indications of WAR 40% TW and greater. Three (3) tubes were reported to have indications of WAR 20-39% TW. Five hundred and thirty-five (535) tubes were reported to have indications of WAR less than 20% TW. Two hundred and thirty-eight (238) tubes were reported to have VOL. One hundred and eighty-one (181) tubes were reported to have SAI. Four (4) tubes were reported to have SVI. No tubes were reported to have NQI, MAI, MCI, SCI, MVI, or MMI.

2.6.5 MRPC[®] of Sleeve Rolls

Two hundred and fifty-two (252) upper and lower rolls in sleeves were examined with a plus point coil MRPC[®] probe. One (1) sleeves was reported to have VOL. No sleeves were reported to have DRS, NQI, MAI, SAI, SCI, MCI, MMI, PVN, SVI, or MVI.

2.6.6 HLRT Roll Examination

Fourteen thousand three hundred and eighty-six (14386), tube rolls were examined with a 2-coil MRPC[®] probe. Three (3) tubes were reported to have VOL. Three (3) tubes were reported to have MAI. Twenty-nine (29) tubes were reported to have SAI. One hundred and eight (108) tubes were reported to have SCI. Ten (10) tubes were reported to have MCI. Two (2) tubes was reported to have SVI. Two (2) tubes was reported to have MMI. Two thousand six hundred and four (2604) tubes were reported to have TEA. No tubes were reported to have NQI, or MVI.

2.6.7 Lower Tubesheet Kidney Region

Two thousand one hundred and ten (2110) tubes were examined at the LTS interface. Two (2) tubes were reported to have VOL. Three (3) tubes were reported to have SAI. Two (1) tubes was reported to have PVN. No tubes were reported to have NQI, MAI, SCI, MCI, MMI, SVI, or MVI.

2.6.8 Lower Tubesheet Rerolls

One (1) tube with lower tubesheet manufacture re-roll was examined with a 2-coil MRPC[®] probe. No indications were reported.

2.6.9 Plug Visual Examination

Eight hundred and ninety-three (893) plugs in each leg were examined with remote video. No plugs required repair.

2.7 Documentation

All original data including analyst report and resolution results are stored on optical disks and will be retained by Duke Power Company. The eddy current results for all tubes examined, which includes, lists of tubes containing indications 0-100% TW, ADI, NQI and all tubes removed from service are contained in the FDMS and Zetec, Data Management data bases.

TABLE I
DESCRIPTION

<u>CODE</u>	<u>DESCRIPTION</u>
ADI	Absolute Drift Indication
AXI	Axial Indication
FTI	Framatome Technologies
DRS	Distorted Roll Signal
DWI	Dent With Indication
HLRT	Hot Leg Roll Transition
IDI	Inside Diameter Indication
LTP	Lower Tubesheet Primary face
LTS	Lower Tubesheet Secondary face
MAI	Multiple Axial Indication
MCI	Multiple Circumferential Indication
MMI	Mix Mode Indication
MVI	Multiple Volumetric Indication
MRPC	Motorized Rotating Pancake Coil
NDD	No Degradation Detected
NQI	Non-Quantifiable Indication
OD	Outside Diameter
ODI	Outside Diameter Indication
OTSG	Once-Through Steam Generator
PVN	Permeability
PWSCC	Primary Water Stress-Corrosion Cracking
QA	Quality Assurance
RBD	Retest - Bad Data
RIC	Retest - Incomplete
RNC	Retest - Number Check
SAI	Single Axial Indication
SCI	Single Circumferential Indication
SVI	Single Volumetric Indication
TEA	Tube End Anomalies
TSP	Tube Support Plate
TW	Through Wall
TWD	Through Wall Depth
UTP	Upper Tubesheet Primary face
UTS	Upper Tubesheet Secondary face
VOL	Volumetric indication

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 2
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: September 9, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0004-55-2	N/A	N-108
Steam Generator B	Babcock & Wilcox	620-0004-55-1	N/A	N-107

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: April 30, 2001 TO May 13, 2001
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 5.5.10 Steam Generator, 12/15/00 Revision
13. Abstract of Examinations and Test. Reference attached Steam Generator In-service Inspection Summary Report
14. Abstract of Results of Examination and Tests. Reference attached Steam Generator In-service Inspection Summary Report
15. Abstract of Corrective Measures. Reference attached Steam Generator In-service Inspection 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 7/16/ 20 01 Signed Duke Energy Corp. By Mous Samy
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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 4-30-2001 to 5-13-2001, 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 Owner's 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 Owner's 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

C. J. S. Smith Commissions GA 360 N1C
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-31 20 01

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



W. R. McCollum, Jr.
Vice President

Duke Energy

Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

(864) 885-3107 OFFICE
(864) 885-3564 FAX

August 20, 2001

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555


Subject: Oconee Nuclear Station
Unit 2 EOC-18 Refueling Outage, May 2001
Steam Generator Inservice Inspection
Steam Generator Three Month Report

As required by Technical Specification 5.6.8.b, the results of the Steam Generator Tube Inservice Inspection performed during the Unit 2 End of Cycle 18 refueling outage are submitted as Attachment A for your review.

Enclosure B provides a supplemental Inspection Assessment we believe will be helpful in reviewing the overall results of our steam generator inspections. Enclosure B also provides a summary of estimated primary-to-secondary leakage from the SGs in their as-found condition following a postulated Loss of Coolant Accident. This summary is required by License Condition 6 described in the letter from D. E. LaBarge to Duke Energy Corporation, dated December 15, 2000.

If there are any questions you may contact R. P. Todd at (864) 885-3418.

Very truly yours,



W. R. McCollum, Jr.
Site Vice President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 3 1993 EOC 14 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-287

National Board No. N/A

Commercial Service Date: December 16, 1974

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

Revision 0

Prepared By: *Malden Crump* Date: 6/29/00

Reviewed By: *James H. Patton* Date: 6/30/00

Approved By: *Wyn Sample* Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 3
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: December 16, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0009-55-1	N/A	N-127
Steam Generator B	Babcock & Wilcox	620-0009-55-2	N/A	N-128

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: December 28, 1993 TO February 26, 1994
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 9/24/93 Revision

13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 2/10/94.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 2/10/94.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 2/10/94.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 12-28-93 to 2-26-94, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-21 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax



DUKE POWER

February 10, 1994

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-287
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by our Technical Specifications 4.17.6(a) & (b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 EOC 14 refueling outage.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>
A	9331
B	9330

2. The following information identifies the location and percent of wall-thickness penetration for each indication of a degraded tube:

<u>Steam Generator</u>	<u>Attachment</u>
A	1
B	2

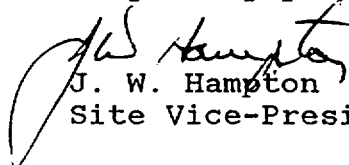
3. The following information identifies the tubes removed from service by plugging. There were no tubes repaired by sleeving in either Steam Generator:

<u>Steam Generator</u>	<u>Number of Tubes Plugged</u>	<u>Attachment</u>
A	61	3
B	74	4

U. S. Nuclear Regulatory Commission
Page 2

If there are any questions you may contact D. W. Dalton at (803)
885-3372.

-Very truly yours,


J. W. Hampton
Site Vice-President

Attachment

xc w/attachment: Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

bxc w/o att: Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Virgil R. Autry
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Steam Generator Outage Summary Report

Oconee Unit 3 March 1994 Tube Leak Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-287

National Board No. N/A

Commercial Service Date: December 16, 1974

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

Revision 0

Prepared By: *Gualdo W. Cump* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/30/00*

Approved By: *Wm Sample* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 3
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: December 16, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0009-55-1	N/A	N-127

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: March 19, 1994 TO March 28, 1994
9. Inspection Period Identification: Third Period
10. Inspection Interval Identification: Second Interval
11. Applicable Edition of Section XI: 1980 Addenda Winter 1980
12. Date/Revision of Inspection Plan: Tech Specs 4.17.6 Steam Generator, 2/9/94 Revision

13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 4/14/94.

14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 4/14/94.

15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 4/14/94.

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 7/10 20 00 Signed Duke Energy Corp. By W. R. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 3-19-94 to 3-28-94, 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 Owner's 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 Owner's 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

M. B. Chapman Commissions NC 914
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-21 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax



DUKE POWER

April 14, 1994

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 3
Docket No. 50-287
Steam Generator Inservice Inspection
"A" Steam Generator Tube Leak Outage
March 1994

For your information we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 "A" Steam Generator Tube Leakage outage in March 1994.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generator:

<u>Steam Generator</u>	<u>Method</u>	<u>Quantity</u>
A	Bobbin	22
A	MRPC	303

2. The following information identifies the location and percent of wall-thickness penetration for each indication of a degraded tube:

<u>Steam Generator</u>	<u>Method</u>	<u>Attachment</u>
A	Bobbin	1
A	MRPC	2

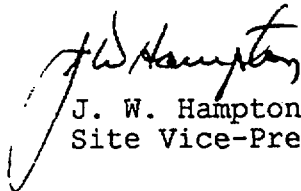
3. The following information identifies the tubes removed from service by plugging. There were no tubes repaired by sleeving :

<u>Steam Generator</u>	<u>Number of Tubes Plugged</u>	<u>Attachment</u>
A	3	3

U. S. Nuclear Regulatory Commission
Page 2

If there are any questions you may contact D. W. Dalton at (803)
885-3372.

Very truly yours,


J. W. Hampton
Site Vice-President

Attachment

xc : Mr. L. A. Wiens
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Virgil R. Autry
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Steam Generator Outage Summary Report

Oconee Unit 3 1995 EOC 15 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-287

National Board No. N/A

Commercial Service Date: December 16, 1974

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

Revision 0

Prepared By: Donald W. Crump Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: W. H. Lang Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 3
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: December 16, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0009-55-1	N/A	N-127
Steam Generator B	Babcock & Wilcox	620-0009-55-2	N/A	N-128

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: June 6, 1995 TO July 23, 1995
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 5/3/95 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 7/27/95.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 7/27/95.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 7/27/95.

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 7/10 20 00 Signed Duke Energy Corp. By Wong 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 6-6-95 to 7-23-95, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-28 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax



DUKE POWER

July 27, 1995

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 3
Docket No. 50-287
Steam Generator Inservice Inspection
Steam Generator Tube Plugging and Repair 30 Day Report
Steam Generator Three (3) Month Report

As required by our Technical Specifications 4.17.6(a) & (b) we are submitting the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 EOC 15 refueling outage.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	15162	Bobbin
A	1529	MRPC
B	15276	Bobbin
B	1342	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC
B	4	MRPC

3. The following information identifies the tubes removed from service by plugging. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	158	5
B	118	6

4. The following information identifies the tubes repaired by sleeving. (The tubes are identified in the attachments).

<u>Steam Generator</u>	<u>Number of Tubes Repaired by Sleeving</u>	<u>Attachment</u>
A	148	7
B	163	8

If there are any questions you may contact D. A. Nix at (803) 885-3634.

Very truly yours,

Bentley ← *for J.W. Hampton*
J. W. Hampton
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 3 1996 EOC 16 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-287

National Board No. N/A

Commercial Service Date: December 16, 1974

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

Revision 0

Prepared By: Malden J. Gump Date: 6/29/00

Reviewed By: James H. Patton Date: 6/30/00

Approved By: Wyn Sample Date: 7/10/00

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 3
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: December 16, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0009-55-1	N/A	N-127
Steam Generator B	Babcock & Wilcox	620-0009-55-2	N/A	N-128

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: October 4, 1996 TO March 14, 1997
9. Inspection Period Identification: First Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 8/19/96 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 2/27/97.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 2/27/97.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 2/27/97.

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 7/10 20 00 Signed Duke Energy Corp. By W. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 10-4-96 to 3-14-97, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC 914
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-28 20 00

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

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(864)885-3499 Office
(864)885-3564 Fax



DUKE POWER

February 27, 1997

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 3
Docket No. 50-287
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report
Supplemental Information

In a letter dated December 17, 1996, Duke submitted the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 End of Cycle 16 refueling outage. The purpose of this letter is to provide supplemental information to the December 17, 1996, report. This supplemental information is provided in the attachment. In future steam generator three month reports, this information will be provided as an introductory attachment, and the detailed tube inspection and pull data will be provided in subsequent attachments. We believe you will find this information more helpful in reviewing the overall results of our steam generator inspections.

If there are any questions you may contact D. A. Nix at (864) 885-3634.

Very truly yours,

J. W. Hampton
Site Vice-President

Attachments

February 27, 1997
U. S. Nuclear Regulatory Commission
Page 2

xc w/attachment: Mr. L. A. Reyes
 Regional Administrator, Region II
 U. S. Nuclear Regulatory Commission

xc w/o att: Mr. M. A. Scott
 Senior NRC Resident Inspector
 Oconee Nuclear Station

Mr. Max Batavia
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Mr. D. E. LaBarge, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

February 27, 1997
U. S. Nuclear Regulatory Commission
Page 3

bxc w/o att: M. D. Chapman
P. D. Christopher
J. M. Baumann
T. J. Coleman
W. F. Brady
C. B. Cheezem
J. M. Shuping
D. B. Mayes
J. H. Batton
M. E. Carroll
EC08H
ELL-EC050
NSRB

bxc w/att: Steam Generator File

The following table summarizes the OTSG (Once Through Steam Generator) eddy current inspection scope during the Oconee Unit Three EOC 16 Refueling Outage:

Bobbin Coil (0.510 MF)	100% A-OTSG
	100% B-OTSG
Lane and Wedge MRPC (0.115 3-coil)	240 Tubes A-OTSG
	225 Tubes B-OTSG

Note: This inspection is performed at the 15th tube support plate and the upper tubesheet secondary face as a preventative measure. These tubes surround the sleeved region of the lane and wedge.

MRPC Upper Tubesheet Roll (0.115 3-coil)	20% A-OTSG
	20% B-OTSG
	(initial scope)

Note: The inspection scope was increased to 100% in the B-OTSG due to the identification of one axial crack in a roll transition.

Bobbin (0.410) Sleeve Exam	100% Sleeves A-OTSG
	100% Sleeves B-OTSG

Sleeve Upper and Lower Rolls (Plus Point)	100% I-600 Sleeves A-OTSG
	100% I-600 Sleeves B-OTSG
	20% I-690 Sleeves A-OTSG
	20% I-690 Sleeves B-OTSG

MRPC Plugs (Single Coil)	100% I-600 A-OTSG (Both Legs)
	100% I-600 B-OTSG (Both Legs)
	40% I-690 A-OTSG (Hot Leg)

Special Interest (3-coil MRPC)	1762 A-OTSG
	1404 B-OTSG

Note: Obstructed locations and selected Dings were inspected with Plus Point as required to ensure adequate inspection.

Disposition of the above inspection data identified 115 tubes that required repair in the A OTSG and 110 tubes in the B-OTSG. All indications identified as cracks by the MRPC or Plus Point examinations were removed from service. The location of the indication, current inspection data, previous bobbin data, and previous MRPC data are used to disposition volumetric indications. This information is used to determine whether the indication is active degradation or some other tube anomaly such as burnish marks, dings, and deposit. Potential active degradation modes include IGA(intergranular attack), wear, or erosion corrosion. The criteria for repair of these damage mechanisms vary and are discussed below. All tubes were removed from service by installing I-690 rolled plugs or I-690 welded plugs. Active damage mechanisms identified during this inspection include IGA/SCC (intergranular attack/stress corrosion cracking), IGA, erosion corrosion, wear, and upper tube roll transition PWSCC (pure water stress corrosion cracking). Prior to unit shutdown, no steam generator primary to secondary leakage was identified.

The following table summarizes the tubes removed from service due to various mechanisms. A discussion of the damage mechanisms follows the table.

	A-OTSG	B-OTSG
IGA/SCC	51	16
IGA	26	42
Erosion Corrosion	23	13
Wear	2	5
Upper Roll PWSCC	0	19
Sleeve Indications	1	0
≥40% TW Bobbin/NDF MRPC	3	9
Miscellaneous	9	6
Total	115	110

A total of 67 tubes were removed from service due to axially oriented freespan IGA/SCC. Based on previous tube pull examination these indications are assumed to be associated with grooves on the outside surface of the tubes. Data review indicates that these tubes provided adequate margin against rupture (limiting condition of 3 times normal operating pressure per Draft NRC Regulatory Guide 1.121). This determination is based on previous tube pull data. IGA/SCC is the limiting mechanism with respect to full cycle operation. The upper bound growth rate is 2% per EFPM and full cycle operation is justified. Three tubes with indications of IGA and IGA/SCC were removed for further examination to verify their condition. These indications are removed from service based on detection with 3-coil MRPC.

A total of 68 tubes were removed from service due to IGA. These indications are volumetric in nature. Data review indicates that these tubes provided adequate margin against rupture. This determination is based on previous tube pull data. Three tubes with indications of IGA and IGA/SCC were removed for further examination to verify their condition. IGA is removed from service based on detection with 3-coil MRPC.

A total of 36 tubes were removed from service due to erosion corrosion. These indications are volumetric in nature. Data review indicates that these tubes provided adequate margin against rupture. This determination is based on previous tube pull data and eddy current sizing abilities. Erosion corrosion is removed from service based on bobbin sizing ($\geq 40\%$ TW). Additionally, many erosion corrosion defects $\leq 40\%$ TW are removed from service preventatively based on previous data and defect location.

A total of 7 tubes were removed from service due to wear. These indications are volumetric in nature. Data review indicates that these tubes provided adequate margin against rupture. This determination is based on previous tube pull data and eddy current sizing abilities. Wear is removed from service based on MRPC sizing ($\geq 40\%$ TW).

A total of 19 tubes in the B-OTSG were removed from service due to PWSCC in the tube upper roll. This was the first indication of roll transition PWSCC at an Oconee unit. The indications are

contained by the tubesheet; therefore, these tubes provided adequate margin against rupture. Of the 19 indications, 15 were axial indications in the roll transition, 3 were axial indications in the rolled area and may be associated with tube end damage or ID scratches and one indication was volumetric at the roll transition. All of these tubes, with the exception of two, were located in the periphery region of the steam generator. These tubes were removed from service based on detection. No indications of PWSCC were identified in the A-OTSG.

The plus point examination identified a sleeve indication in the uppermost rolled joint (below the 15th TSP) in one I-600 sleeve in the A-OTSG. The indication was circumferential in nature with an arc length of 64 degrees. This indication could be a scratch generated by the rolling process. Laboratory testing has verified this as a possibility. With current technology, the sleeve could not be removed from the steam generator due to its location. Removal would be required to confirm the presence of degradation. If it is conservatively assumed that the indication is a 100% TW defect, this tube would still provide adequate margin against rupture.

A total of 12 tubes were removed from service due to bobbin indications $\geq 40\%$ TW without MRPC confirmation. In addition 15 tubes were preventatively removed from service due to miscellaneous reasons. These are typically obstructed tubes, permeability, volumetric indications near the lane and wedge region, or other ambiguous eddy current indications that may mask degradation.

Three tubes in the A-OTSG were removed for laboratory analysis for indications of IGA and IGA/SCC. These indications ranged in depth from 10% to 73% TW based on plus point analysis. The largest flaw was approximately 3 inches long with a maximum depth of 58% TW. The length measurement is considered conservative since the plus point coil response returned to null at different locations along this length. The shortest flaw was 0.22 inches long. Again, comparison of these data with past tube pull results indicate adequate margin to rupture and observed growth justifies full cycle operation.

One tube in the B-OTSG was removed for laboratory analysis for indications of PWSCC at the upper roll transition. The roll transition contained multiple axial indications 0.17 inches long.

The measured depth with the axial responding coil was 47% TW. The measured depth with the pancake coil was 70% TW. Again, adequate margin to rupture was maintained and full cycle operation is justified.

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(864)885-3199 Office
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DUKE POWER

December 17, 1996

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 3
Docket No. 50-287
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 End of Cycle 16 refueling outage are submitted for review.

1. The following quantity of tubes were inspected from the inlet or outlet of the Steam Generators:

<u>Steam Generator</u>	<u>Quantity</u>	<u>Inspection Method</u>
A	15004	Bobbin
A	4570	MRPC
B	15158	Bobbin
B	14901	MRPC

2. The following information is submitted concerning tube indications of imperfections. (The attached lists identify the tubes with imperfections, their locations, and their size.)

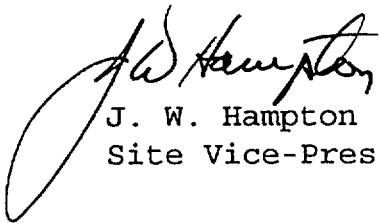
<u>Steam Generator</u>	<u>Attachment</u>	<u>Inspection Method</u>
A	1	Bobbin
B	2	Bobbin
A	3	MRPC/Plus Point
B	4	MRPC/Plus Point

3. The following information identifies the quantity of tubes removed from service by plugging. (The tubes are identified in the attachments). There were no tubes repaired by sleeving in either steam generator.

<u>Steam Generator</u>	<u>Number of Tubes Removed from Service</u>	<u>Attachment</u>
A	115	5
B	110	6

If there are any questions you may contact D. A. Nix at (864) 885-3634.

Very truly yours,



J. W. Hampton
Site Vice-President

Attachments

Steam Generator Outage Summary Report

Oconee Unit 3 1998 EOC 17 Refueling Outage

Location: 7800 Rochester Highway, Seneca, South Carolina 29672

NRC Docket No. 50-287

National Board No. N/A

Commercial Service Date: December 16, 1974

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

Revision 0

Prepared By: *Ronald W. Cump* Date: *6/29/00*

Reviewed By: *James H. Patton* Date: *6/30/00*

Approved By: *Wyn Sample* Date: *7/10/00*

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Hartford Steam Boiler
Inspection and Insurance
Corporation (AIA)

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

As required by the Provisions of the ASME Code Rules

1. Owner: Duke Energy Corporation, 526 S. Church St. Charlotte, NC 28201-1006
(Name and Address of Owner)
2. Plant: Oconee Nuclear Station, 7800 Rochester Highway, Seneca, SC 29672
(Name and Address of Plant)
3. Plant Unit: 3
4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date: December 16, 1974
6. National Board Number for Unit N/A
7. Components Inspected:

<u>Component</u>	<u>Manufacturer</u>	<u>Manufacturer Serial No.</u>	<u>State or Province No.</u>	<u>National Board No.</u>
Steam Generator A	Babcock & Wilcox	620-0009-55-1	N/A	N-127
Steam Generator B	Babcock & Wilcox	620-0009-55-2	N/A	N-128

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8¹/₂ 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: October 8, 1998 TO December 19, 1998
9. Inspection Period Identification: Second Period
10. Inspection Interval Identification: Third Interval
11. Applicable Edition of Section XI: 1989 Addenda None
12. Date/Revision of Inspection Plan: Tech Spec 4.17.6 Steam Generator, 9/4/98 Revision
13. Abstract of Examinations and Test. Reference attached NRC Inspection Report dated 2/18/99.
14. Abstract of Results of Examination and Tests. Reference attached NRC Inspection Report dated 2/18/99.
15. Abstract of Corrective Measures. Reference attached NRC Inspection Report dated 2/18/99.

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 7/10 20 00 Signed Duke Energy Corp. By W. J. 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 South Carolina employed by *The HSBI&I Co. of Hartford, Ct. have inspected the components described in this Owner's Report during the period 10-8-98 to 12-19-98, 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 Owner's 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 Owner's 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

M.B. Chapman Commissions NC914
Inspector's Signature National Board, State, Province, and Endorsements

Date 7-28 20 00

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



W. R. McCollum, Jr.
Vice President

Duke Energy Corporation

Oconee Nuclear Station
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(864) 885-3107 OFFICE
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February 18, 1999

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 3
Docket No. 50-287
Steam Generator Inservice Inspection
Steam Generator Three (3) Month Report

As required by Technical Specifications 4.17.6 (b), the results of the Steam Generator Tube Inservice Inspection performed during the Unit 3 End of Cycle 17 refueling outage are submitted as Attachment B for your review.

Also included as Attachment A is a supplementary Inspection Assessment which we believe will be helpful in reviewing the overall results of our steam generator inspections.

If there are any questions you may contact R. P. Todd at (864) 885-3418.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'W. R. McCollum, Jr.', written over the typed name.

W. R. McCollum, Jr.
Site Vice-President

Attachments