



**1RE01 INSERVICE INSPECTION SUMMARY REPORT
FOR WELDS, STEAM GENERATOR TUBING,
AND COMPONENT SUPPORTS**

of the

**SOUTH TEXAS PROJECT
ELECTRIC GENERATING STATION - UNIT 1
P.O. Box 289
Wadsworth, Texas 77483**

Owner: Houston Lighting and Power Company
City Public Service Board of San Antonio
Central Power and Light Company
City of Austin

Address: P.O. Box 1700
Houston, Texas 77001

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1RE01 INSERVICE INSPECTION SUMMARY REPORT
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OF THE
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION
UNIT NO. 1

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TABLE OF CONTENTS

1.0	<u>1RE01 SUMMARY REPORT</u>	<u>Page</u>
1.1	Introduction	1-1
1.2	Scope of Summary Report	1-1
2.0	<u>WELD EXAMINATIONS</u>	
2.1	Introduction	2-1
2.2	Scope of Examinations	2-1
2.3	Personnel, Procedures, and Equipment	2-2
2.3.1	Personnel Qualifications	2-2
2.3.2	Examination Procedures	2-3
2.3.3	Equipment	2-3
2.3.4	Materials	2-4
2.3.5	Calibration Blocks	2-4
2.4	Summary of Examinations	2-4
2.4.1	Examination Methods	2-4
2.4.2	Augmented Examinations	2-5
2.4.3	Data Comparison	2-5
2.4.4	Additional and Successive Examinations	2-5
2.5	Examination Results and Corrective Actions	2-5
2.6	Certification of Inspections	2-5
Appendix 2-A	Examination Summary Tables	2-8
Appendix 2-B	Personnel/Equipment/Materials	2-34
Appendix 2-C	SWRI Procedures	2-38
Appendix 2-D	ISI Examination Limitations	2-42
Appendix 2-E	Owner's Report for Inservice Inspections - NIS-1 Forms	2-54
3.0	<u>STEAM GENERATOR TUBING EXAMINATIONS</u>	
3.1	Introduction	3-1
3.2	Scope of Examinations	3-1

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
3.3 Personnel, Procedures, and Equipment	3-2
3.3.1 Personnel Qualifications	3-2
3.3.2 Examination and Analysis Procedures	3-2
3.3.3 Equipment	3-3
3.3.4 Calibration Standards	3-3
3.4 Summary of Examinations	3-4
3.4.1 Technical Specification Examinations	3-4
3.4.2 Augmented Examinations	3-4
3.5 Examination Results and Corrective Actions	3-5
3.6 Certification of Inspections	3-7
Appendix 3-A Changes to the ISI Outage Plan	3-8
Appendix 3-B List of Examination and Data Analysis Personnel	3-14
Appendix 3-C Oscillographs and System Response Curves for Flaws Greater Than 20 Percent	3-16
Appendix 3-D Flaws with Tube Wall Thickness Reduction	3-21
Appendix 3-E Dings and Dents	3-23
Appendix 3-F Owner's Report for Inservice Inspections - NIS-1 Form	3-34
4.0 <u>COMPONENT SUPPORT EXAMINATIONS</u>	
4.1 Introduction	4-1
4.2 Scope of Examinations	4-1
4.2.1 Class 1 Components	4-1
4.2.2 Class 2 Components	4-1
4.2.3 Class 3 Components	4-2
4.3 Personnel and Procedures	4-2
4.3.1 Personnel Qualifications	4-2
4.3.2 Examination Procedure	4-2

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
4.4 Summary of Examinations	4-2
4.4.1 Piping Supports	4-2
4.4.2 Equipment Supports	4-2
4.4.3 Additional and Successive Examinations	4-3
4.5 Examination Results and Corrective Actions . . .	4-3
4.6 Certification of Inspections	4-3
Appendix 4-A ISI Examinations of Component Supports	4-4
Appendix 4-B Personnel Performing Visual Examinations of Component Supports . .	4-8
Appendix 4-C Owner's Report for Inservice Inspections - NIS-1 Forms	4-10

1.0 1RE01 SUMMARY REPORT

1.1 Introduction

This Summary Report describes Houston Lighting & Power Company's (HL&P) inservice inspection (ISI) of selected Class 1, 2, and 3 components of the South Texas Project Electric Generating Station, Unit 1 (STPEGS-1) performed during the time period between the start of commercial operation on August 25, 1988 and the completion of the first refueling outage (1RE01) on October 19, 1989. The ISI summarized herein constitutes the first inservice examinations performed during the first inspection period of the first inspection interval of STPEGS-1. The STPEGS ISI program is scheduled in accordance with Program B of the American Society of Mechanical Engineer (ASME) Section XI Code "Inservice Inspection of Nuclear Power Plant Components". The first ten year inspection interval of STPEGS-1 extends to August 25, 1998. The first inspection period, which is of three years duration beginning with commercial operation, extends to August 25, 1991. The ISI examinations performed up through 1RE01 partially satisfy the Section XI Code completion requirements for the first inspection period.

The STPEGS-1 ISI program for the first inspection interval is described in the Ten Year ISI Plan previously filed with the Nuclear Regulatory Commission (NRC) and the State of Texas. The STPEGS-1 ISI program was developed and is being implemented in accordance with 10CFR50.55a, the 1983 Edition of Section XI Code with the Summer 1983 Addenda, and other regulatory and Code bases as specified in the Ten Year ISI Plan. This Summary Report satisfies the reporting requirements of IWA-6000 of the Section XI Code for welds, steam generator tubing, and component supports and those of Technical Specification 4.4.5.5 (b) with regard to steam generator tubing inspection.

1.2 Scope of Summary Report

This Summary Report describes the ISI examinations performed up through 1RE01 on welds (Section 2), steam generator tubing (Section 3), and component supports (Section 4). Each of these sections describes the scope of examinations performed; describes the personnel, procedures, and equipment utilized for the examinations; provides a summary of the examinations, examination results, and corrective actions; and includes copies of the examination certification (NIS-1) forms.

The ISI examinations performed on Class 1 and 2 welds and other examination areas (e.g., bolting) are described in Section 2 of this Summary Report. These examinations were performed in accordance with Subsections IWB and IWC of Section XI and other bases as specified in the Ten Year ISI Plan. ISI examinations performed on steam generator tubing are described in Section 3. These examinations were performed in accordance with Subsection IWB (Examination Category B-Q), STPEGS Technical Specifications 4.4.5, and other bases as specified in the Ten Year ISI Plan. The ISI examinations performed on Class 1, 2, and 3 component supports and Class 3 integral attachments are described in Section 4. These examinations were performed in accordance with Subsection IWF (Class 1, 2, and 3 supports) and Subsection IWD (Class 3 integral attachments) of Section XI and other bases as specified in the Ten Year ISI Plan.

2.0 WELD EXAMINATIONS

2.1 Introduction

ISI examinations of Class 1 and 2 welds and other examination areas were performed during the 1989 refueling outage of STPEGS-1 (1RE01). These ISI weld examinations were performed between August 10, 1989 and September 7, 1989. These examinations constitute the first ISI of the first inspection interval for the Welds Examination Program.

This section of the Summary Report documents the examinations performed by Southwest Research Institute (SwRI) during 1RE01 in accordance with the following documents:

- (1) "First 10-Year Long-Term Inservice Examination Plan for the South Texas Project Electric Generating Station, Unit 1"
- (2) "Examination Plan for the 1989 Inservice Examination of the South Texas Project Electric Generating Station, Unit 1" including changes made on site during the outage.

The Long-Term Plan (LTP) presents a detailed description of the rules for exemption, allocation, selection, and scheduling of Class 1 and 2 component welds and examination areas for ISI. The 1989 Examination Plan is an individual Outage Plan for implementing ISI weld examinations as scheduled in the LTP. The Outage Plan contains the SwRI operating procedures (OP) and nondestructive testing (NDT) procedures used for the examinations.

2.2 Scope of Examinations

Nondestructive examinations (NDE) were performed on a total of ninety-two (92) selected Class 1 and Class 2 components and examination areas as contained in the Outage Plan. Selection of these components and examination areas was based on the LTP allocation and scheduling requirements for the first outage, which included component replacement considerations. In addition, some welds and/or examination areas were deferred due to ALARA considerations (e.g., ISI examination will be performed on some components after flushing to reduce radiation levels) or deferred to a later outage due to hanger interference. These deviations from the LTP were documented as Examination Plan Changes to the Outage Plan and approved by HL&P.

Class 1

A total of forty-two (42) examinations were performed on the following Class 1 components and examination areas:

Vessels

Reactor Pressure Vessel
Pressurizer
Steam Generators (Primary Side)

Piping

Reactor Coolant System
Chemical and Volume Control System
Residual Heat Removal System

Valves

Safety Injection System

Class 2

A total of fifty (50) examinations were performed on the following Class 2 components and examination areas:

Vessels

Regenerative Heat Exchanger
Residual Heat Removal Heat Exchanger 1A

Piping

Feedwater System
Main Steam System

A complete list of the components and examination areas is contained in Appendix 2-A. Class 1 and Class 2 weld identification figures for the above components and examination areas are contained in the LTP.

2.3 Personnel, Procedures, and Equipment

2.3.1 Personnel Qualifications

The SwRI examination personnel have been trained and qualified by SwRI in accordance with Section XI. In addition, Level II examiners performing examinations on austenitic piping welds were qualified by Electric Power

Research Institute in detection of intergranular stress corrosion cracking. A list of all SwRI personnel who performed examinations during 1RE01 is contained in Appendix 2-B

2.3.2 Examination Procedures

NDE activities were performed using visual (VT), liquid penetrant (PT), magnetic particle (MT), and ultrasonic (UT) techniques. All examinations were performed by SwRI personnel in accordance with SwRI NDT procedures approved by HL&P.

The SwRI procedures were written to conform to the requirements of the applicable sections of the ASME Code. Any deviations from ASME Code requirements are noted within the procedure. Some of the procedures were amended for specific examination purposes with deviations. All NDT procedures and deviations were submitted to and approved by the Authorized Nuclear Inservice Inspector (ANII). A list of the applicable NDT procedures is provided in Appendix 2-C.

SwRI OP's were utilized to provide guidelines and controls for performance of on site activities. This included procedures for weld joint identification marking, indication recording, records control, data comparison, and resolution of indications. A list of the applicable OP's is provided in Appendix 2-C.

2.3.3 Equipment

Various equipment was used during the ISI to perform the examinations of the selected component welds and examination areas. Major equipment consisted of the following:

- Sonic FTS Mark I ultrasonic instruments
- Ultrasonic transducers
- AC electromagnetic yokes
- MT calibration block
- Pyrometers
- Remote visual examination system

Sonic Mark I instruments and ultrasonic transducers were certified prior to use during the ISI. A list of all major equipment used during the 1RE01 ISI is contained in Appendix 2-B.

2.3.4 Materials

NDE materials utilized during 1RE01 weld examinations included penetrant and magnetic particle materials, ultrasonic couplant, and marking pencils. All materials contacting an austenitic examination surface were tested and certified to be within acceptable sulfur and halogen limits specified in the STPEGS Expendable Material Control Program. In compliance with this program, pipe marking materials were also tested for leachable chloride content. A list of these material and traceability numbers is included in Appendix 2-B.

2.3.5 Calibration Blocks

Pipe and vessel calibration blocks were utilized to calibrate the UT instruments prior to examination of the selected welds. Applicable calibration blocks are noted in the Examination Summary Tables (Appendix 2-A). Drawings for all calibration blocks are included in the LTP.

2.4 Summary of Examinations

2.4.1 Examination Methods

The following examination methods were conducted in accordance with HL&P approved SwRI NDT procedures:

VT Examinations

VT-1 examinations were performed on Pressurizer Manway Bolting, Steam Generator Manway Bolting (Primary Side), and selected Class 1 flange bolting and valve bolting. VT-3 examinations were performed on the Reactor Pressure Vessel (RPV) Interior and a Class 1 valve body. The VT examinations of the RPV interior accessible surfaces were performed with SwRI's Remote VT Examination System.

PT Examinations

PT examinations were performed on selected Class 1 vessel and piping welds and on selected Class 2 vessel welds and integrally welded support attachments.

MT Examinations

MT examinations were performed on the Pressurizer Support Skirt and selected Class 2 piping welds and integrally welded pipe lugs.

UT Examinations

UT examinations were performed on Class 1 and 2 components, including vessels, austenitic piping, ferritic piping, and dissimilar metal welds. Various techniques were used to perform the UT examinations, depending on classification, material type, and weld thickness.

2.4.2 Augmented Examinations

In addition to the ISI requirements of Section XI for Class 1 piping and Code Case N-408 for Class 2 piping, the following two augmented ISI programs were implemented during this outage:

Augmented ISI - NRC Bulletin No. 88-08
Augmented ISI - Break Exclusion Zone

These augmented programs are described in the SWRI LTP and the affected examination areas are noted in the "Remarks" column of the Examination Summary Tables.

2.4.3 Data Comparison

In accordance with IWB-3121 of Section XI, all examination data were compared with recorded NDE results of the preservice inspection (PSI). This data comparison was implemented as specified in SWRI OP IX-FE-131, "Comparison of Inservice Examination Data".

If flaws were recorded in the selected component weld or examination area during previous examinations and dispositioned as acceptable, the existence and location of such flaws were verified during this ISI. All such flaws were observed and verified during this ISI. Data comparison of flaws reported during previous examinations is presented in the applicable weld data packages.

2.4.4 Additional and Successive Examinations

Based on acceptability of examination results, no additional or successive examinations were required.

2.5 Examination Results and Corrective Actions

Examination area coverage was provided, to the extent practical, in accordance with the requirements of ASME Section XI and Code Case N-408. In those cases where physical conditions of the

component restricted UT examination of the required area, a coverage plot was generated indicating areas not receiving complete coverage. These coverage plots are contained in the weld examination data. In addition, Appendix 2-D, ISI Examination Limitations, contains a detailed account of all examination limitations (UT, PT, and MT) encountered during 1RE01 weld examinations.

All UT indications determined to be recordable, regardless of signal amplitude, were investigated by SwRI to determine the nature of the reflector. Indications determined to be other than geometry were evaluated by SwRI to Section XI criteria and reported to HL&P on Customer Notification Forms (CNF).

The UT examinations revealed Code-allowable flaws in Main Steam Piping weld No. 30-MS-1001-29 and Regenerative Heat Exchanger weld No. CSAHRG-1A-S1. These same flaws were also detected during the preservice examinations. These flaws were reported to HL&P on CNFs Nos. 1 and 2 respectively. Following evaluation, all reported flaws were accepted "as-is" by HL&P.

No recordable indications were detected by surface (PT and MT) examinations.

The VT examinations revealed a plastic wire tie on the RPV seal surface between Closure Head Stud Hole Nos. 3 and 4. This indication was reported on CNF No. 3. The wire tie was removed by Westinghouse during a debris removal operation.

A description of CNFs generated during the ISI is contained in Table 2-1. This table presents information on each CNF such as the examination area, NDE method, the nature of the reportable indication, the disposition, and the Section XI evaluation and acceptance criteria.

2.6 Certification of Inspections

Section XI NIS-1 forms, "Owner's Report for Inservice Inspections", have been prepared to certify the STPEGS-1 weld ISI examinations described in this section of the Summary Report. The STPEGS-1 weld ISI examinations have been certified by our ANII, Lumbermens Mutual Casualty Company, on the NIS-1 forms included in Appendix 2-E.

TABLE 2-1

<u>CNF No.</u>	<u>Exam Area/ Weld No</u>	<u>NDE Method</u>	<u>Description</u>
001	30-MS-1001-29	UTOL	2 Code-allowable flaws from the same laminar reflector. The lamination has no area and is therefore allowable under Table IWB-3514-3. This flaw was also detected during the PSI.
002	CSAHRG-1A-S1	UT45	1 Code-allowable planar flaw. The flaw has no measurable length nor throughwall dimension and is therefore allowable under Table IWB-3511-1. This flaw was also detected during the PSI.
003	RPV Interior Surface	VT-3	A plastic wire tie was visually observed on the RPV seal surface between flange stud hole Nos. 3 and 4. The wire tie was removed during a debris removal operation.

APPENDIX 2-A

EXAMINATION SUMMARY TABLES

DATE: 01/10/90
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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 1

REACTOR PRESSURE VESSEL

		ASME			N	D	
		SEC. XI			O	G	T
SUMMARY EXAMINATION AREA		CATGY	EXAM		R	E	H
NUMBER	IDENTIFICATION	ITEM NO	METHOD	PROCEDURE	E	O	E
					C	M	R
							REMARKS
							CALIBRATION BLOCK

VESSEL INTERIOR (FIG NO A-RPV-1)

006200	VESSEL INTERIOR	B-N-1 B13.10	VT-3	900-7/15	-	-	X	A PLASTIC WIRE TIE WAS OBSERVED BETWEEN CLOSURE HEAD STUD HOLES NOS. 3 AND 4. SEE CNF 003. THE WIRE TIE WAS REMOVED BY WESTINGHOUSE DURING A DEBRIS REMOVAL OPERATION.
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DATE: 01/10/90
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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 2

PRESSURIZED

				N	O	
				O	G	T
				B	E	N
SUMMARY EXAMINATION AREA				E	O	E
NUMBER IDENTIFICATION				C	R	R
				REMARKS		
				CALIBRATION BLOCK		

NOZZLE TO SHELL AND SHELL TO NOZZLE WELDS (FIG NO A-PR2-1)

010700	PR2-1-N3	B-D	UT0W	600-49/3	X	-	-	LIMITED UT FROM THE NOZZLE SIDE DUE TO
	SAFETY NOZZLE	B3.110	UT45	600-15/73	X	-	-	NOZZLE CONFIGURATION.
			UT45T		X	-	-	
			UT60		X	-	-	
			UT60T		X	-	-	**CSCL-56**
010800	PR2-1-N4A	B-D	UT0W	600-49/3	X	-	-	LIMITED UT FROM THE NOZZLE SIDE DUE TO
	RELIEF NOZZLE	B3.110	UT45	600-15/73	X	-	-	NOZZLE CONFIGURATION.
			UT45T		X	-	-	
			UT60		X	-	-	
			UT60T		X	-	-	**CSCL-56**

NOZZLE INSIDE RADIUS SECTION (FIG NO A-PR2-1)

011300	PR2-1-N3-1R	B-D	UT20	600-11/46	X	-	-	
	SAFETY NOZZLE	B3.120						**CSCL-42**
011400	PR2-1-N4A-1R	B-D	UT20	600-11/46	X	-	-	
	RELIEF NOZZLE	B3.120						**CSCL-42**

NOZZLE TO SAFE-END AND SAFE-END TO NOZZLE WELDS (FIG NO A-PR2-1)

011900	PR2-1-N3-SE	B-F	PT	200-1/71	X	-	-	LIMITED UT45 FROM THE NOZZLE SIDE DUE TO
	SAFETY NOZZLE	B5.40	UT45	800-114/4	X	-	-	NOZZLE CONFIGURATION.
			UT45T		X	-	-	**SS-70**
012000	PR2-1-N4A-SE	B-F	PT	200-1/71	X	-	-	LIMITED UT45 FROM THE NOZZLE SIDE DUE TO
	RELIEF NOZZLE	B5.40	UT45	800-114/4	-	X	-	NOZZLE CONFIGURATION.
			UT45T		X	-	-	**SS-70**

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 3

PRESSURIZER

SUMMARY EXAMINATION AREA		ASME			N	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	N
		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER	IDENTIFICATION				C	N	R
							REMARKS
							CALIBRATION BLOCK

MANWAY BOLTING (FIG NO A-PRZ-1)

012300	BOLTING	B-G-2	VT-1	900-7/15	X - -	EXAMINED BOLT NOS. 1 THRU 6.
		B7.20				

INTEGRAL ATTACHMENTS (FIG NO A-PRZ-1)

012600	PRZ-1-SK	B-H	MT	300-1/36	X - -	MT WAS PERFORMED ON OUTSIDE SURFACE 1"
	SUPPORT SKIRT	B8.20	UT35	800-121/1	X - -	BELOW THE WELD TO 1" ABOVE THE WELD.
			UT60		X - -	SEE SKIRT WELD DETAIL IN FIGURE A-PRZ-1.
			UT60T		X - -	UT WAS PERFORMED FROM OUTSIDE SURFACE IN LIEU OF MT ON INSIDE SURFACE PER NL&P RELIEF REQUEST RR-ENG-09.
						CSCL-36/CS-55

DATE: 01/10/90
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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 4

STEAM GENERATOR 1A (PRIMARY SIDE)

SUMMARY EXAMINATION AREA		ASME	SEC. XI	CATGY	EXAM	ITEM NO	METHOD	PROCEDURE	N	O	REMARKS
NUMBER	IDENTIFICATION								C	N	R
											CALIBRATION BLOCK

MANWAY BOLTING (FIG NO A-SG-1)

015800	SG-1A-1MB INLET MANWAY BOLTING	B-G-2	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.
015900	SG-1A-OMB OUTLET MANWAY BOLTING	B-G-2	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.

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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 5

STEAM GENERATOR 1B (PRIMARY SIDE)

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM	O	G	T
		ITEM NO	METHOD	PROCEDURE	R	E	N
					E	O	E
					C	N	R
							REMARKS
							CALIBRATION BLOCK

MANWAY BOLTING (FIG NO A-SG-2)

016800	SG-1B-1MB INLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.
016900	SG-1B-OMB OUTLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.

DATE: 01/10/90
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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 6

STEAM GENERATOR 1C (PRIMARY SIDE)

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM		O	G T
		ITEM NO	METHOD	PROCEDURE		R	E H
						E	O E
						C	N R
							REMARKS
							CALIBRATION BLOCK

MANWAY BOLTING (FIG NO A-SG-1)

017800	SG-1C-1MB INLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X - -	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.
017900	SG-1C-OMB OUTLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X - -	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.

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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 7

STEAM GENERATOR 1D (PRIMARY SIDE)

		ASME			N	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	N
SUMMARY EXAMINATION AREA		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER IDENTIFICATION					C	M	R
							REMARKS
							CALIBRATION BLOCK

MANWAY BOLTING (FIG NO A-SG-2)

018800	SG-1D-1MB INLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.
018900	SG-1D-OMB OUTLET MANWAY BOLTING	B-G-2 B7.30	VT-1	900-7/15	X	-	-	EXAMINED 160 STUDS AND NUTS PER SEC XI, AND 160 SETS OF WASHERS (2 PER SET) NOT REQUIRED BY SEC XI. THIS INCLUDES STUDS, NUTS AND WASHERS FOR ALL FOUR GENERATORS AND A SPARE SET. BASELINE EXAM PERFORMED DUE TO REPLACEMENT OF ORIGINALS THIS OUTAGE.

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 8

REACTOR COOLANT SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	N
		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER	IDENTIFICATION				C	M	R
					REMARKS		
					CALIBRATION BLOCK		

<u>6-RC-1003-BB1 (FIG NO A-RC-13)</u>							
103685	4/5T	NRCB	UTDL	600-49/3	X	-	-
	REDUCING TEE BASE METAL	BB-08	UT45	800-128/0	X	-	-
			UT45T		X	-	-
			UT60		X	-	-
					SS-8		
<u>6-RC-1004-NSS (FIG NO A-RC-6)</u>							
103880	1	B-J	PT	200-1/71	X	-	-
	SAFE END TO ELBOW	B9.11	UT45	800-114/4	-	X	-
			UT45T		X	-	-
					MANDATORY ISI - TE.		
					SS-9/SS-70		
<u>6-RC-1009-NSS (FIG NO A-RC-6)</u>							
104130	9FB	B-G-2	VT-1	900-7/15	X	-	-
	FLANGE BOLTING	B7.50			EXAMINED 12 STUDS AND NUTS IN PLACE.		
<u>6-RC-1015-NSS (FIG NO A-RC-7)</u>							
104420	1	B-J	PT	200-1/71	X	-	-
	SAFE END TO ELBOW	B9.11	UT45	800-114/4	-	X	-
			UT45T		X	-	-
					MANDATORY ISI - TE.		
					SS-9/SS-70		
104490	8	B-J	PT	200-1/71	X	-	-
	PIPE TO PIPE	B9.11	UT45	800-114/4	-	X	-
			UT45T		X	-	-
					SS-9		
104500	9	B-J	PT	200-1/71	X	-	-
	PIPE TO ELBOW	B9.11	UT45	800-114/4	-	X	-
			UT45T		X	-	-
					SS-9		

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 9

REACTOR COOLANT SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	D	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	N
NUMBER	IDENTIFICATION	ITEM NO	METHOD	PROCEDURE	E	O	E
					C	M	R
							REMARKS
							CALIBRATION BLOCK

6-RC-1015-NSS (FIG NO A-RC-7)

104550	14	B-J	PT	200-1/71	X	-	-	LIMITED UT45T FROM THE TEE SIDE DUE TO
	TEE TO PIPE	B9.11	UT45	800-114/4	-	X	-	PROXIMITY OF WELDED SUPPORT BRACKET.
			UT45T	DEV. 1,2	X	-	-	
			UT60	800-132/0	-	X	-	
				DEV. 1				**SS-9**

4-RC-1126-BB1 (FIG NO A-RC-11)

105250	1	B-J	PT	200-1/71	X	-	-	CODE REQUIRED TWO DIRECTIONAL PARALLEL
	VALVE TO PIPE	B9.11	UT45	800-132/0	X	-	-	COVERAGE OBTAINED FROM PIPE SIDE.
			UT45T		X	-	-	
								SS-7

105285	4/5E	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB 88-08.
	ELBOW BASE METAL	88-08	UT45	800-128/0	X	-	-	
			UT45T		X	-	-	
			UT60		X	-	-	
								SS-7

105290	5	B-J	PT	200-1/71	X	-	-	
	ELBOW TO PIPE	B9.11	UT45	800-132/0	X	-	-	
			UT45T		X	-	-	
								SS-7

105295	5	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB 88-08.
	ELBOW TO PIPE	88-08	UT45	800-128/0	-	X	-	
			UT45T		X	-	-	
			UT60		-	X	-	
								SS-7

4-RC-1323-BB1 (FIG NO A-RC-11)

105625	2/3E	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB 88-08.
	ELBOW BASE METAL	88-08	UT45	800-128/0	X	-	-	
			UT45T		X	-	-	
			UT60		X	-	-	
								SS-7

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 10

REACTOR COOLANT SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	N
		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER	IDENTIFICATION				C	N	R
							REMARKS
							CALIBRATION BLOCK

4-RC-1323-BB1 (FIG NO A-RC-11)

105630	3	B-J	PT	200-1/71	X	-	-	
	ELBOW TO PIPE	B9.11	UT45	800-132/0	X	-	-	
			UT45T		X	-	-	
								SS-7
105635	3	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB BB-08.
	ELBOW TO PIPE	BB-08	UT45	800-128/0	X	-	-	
			UT45T		X	-	-	
			UT60		-	X	-	
								SS-7

3-RC-1003-BB1 (FIG NO A-RC-13)

106200	1	B-J	PT	200-1/71	X	-	-	MANDATORY ISI - HS-UF.
	REDUCER TO PIPE	B9.21						
106205	1	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB BB-08.
	REDUCER TO PIPE	BB-08	UT45	800-128/0	-	X	-	
			UT45T		X	-	-	
			UT60		X	-	-	
								SS-94
106210	2	B-J	PT	200-1/71	X	-	-	
	PIPE TO REDUCING TEE	B9.21						
106215	2	NRCB	UTOL	600-49/3	X	-	-	AUGMENTED ISI - NRCB BB-08.
	PIPE TO REDUCING TEE	BB-08	UT45	800-128/0	-	X	-	
			UT45T		X	-	-	
			UT60		X	-	-	
								SS-94

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 11

REACTOR COOLANT SYSTEM

					N	O	
					O	G	T
					R	Z	H
SUMMARY EXAMINATION AREA					E	O	E
NUMBER	IDENTIFICATION	CATGY	EXAM		REMARKS		
		ITEM NO	METHOD	PROCEDURE	C	N	R
*****					**CALIBRATION BLOCK**		
*****					*****		

2-RC-1003-BB1 (FIG NO A-RC-13)

107960	1	B-J	PT	200-1/71	X - -	MANDATORY ISI - NS-UF.		
	VALVE TO PIPE	B9.40						
107970	2	B-J	PT	200-1/71	X - -			
	PIPE TO REDUCER	B9.40						
107975	2	NRCB	PT	200-1/71	X - -	AUGMENTED ISI - NRCB 88-08.		
	PIPE TO REDUCER	B8-08						

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 12

CHEMICAL AND VOLUME CONTROL SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER IDENTIFICATION		SEC. XI	CATGY	EXAM		D	G T
		ITEM NO	METHOD	PROCEDURE		R	E H
						E	D E
						C	M R
							REMARKS
							CALIBRATION BLOCK

2-CV-1121-BB1 (FIG NO A-CV-7)

151100	3	B-J	PT	200-1/71	X	-	-
BENT PIPE TO VALVE		B9.21					

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 13

RESIDUAL HEAT REMOVAL SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM		O	G
		ITEM NO	METHOD	PROCEDURE		R	E
						N	
						E	O
						S	
							REMARKS
						C	M
						R	
							CALIBRATION BLOCK

8-RH-1112-BB1 (FIG. NO. A-RH-4)

202700	1	8-J	PT	200-1/71	X	-	-
	VALVE TO PIPE	89.11	UT45	800-114/4	-	X	-
			UT45T	DEV. 2	X	-	-

0085-1100

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1985), FIRST PERIOD, FIRST INTERVAL
CLASS 1 COMPONENTS

PAGE: 14

VALVES

SUMMARY EXAMINATION AREA		ASME					
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM			
		ITEM NO	METHOD	PROCEDURE			

VALVE GROUP 3

265400	XS100468-V8 ON 12-S1-1218 FIG NO A-S1-2	B-G-2 B7.70	VT-1	900-7/15	X - -	EXAMINED 18 STUDS AND NUTS.
265450	XS100468-V15 ON 12-S1-1218 FIG NO A-S1-2	B-M-2 B12.50	VT-3	900-7/15	X - -	

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 15

REGENERATIVE HEAT EXCHANGER

SUMMARY EXAMINATION AREA		ASME			B	O	REMARKS
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM	O	G	
		ITEM NO	METHOD	PROCEDURE	R	E	
					E	O	
					C	H	
							CALIBRATION BLOCK

CIRCUMFERENTIAL WELDS (FIG 1.0 B-RGX-1)

304400	CSAHRG-1A-S1 NOZZLE TO TUBE SHEET	C-B C2.21	PT UT45 UT45T	200-1/71 600-45/3	X - - - - X X - -	ONE UT45 CODE ALLOWABLE INDICATION. SEE CNF 002. LIMITED UT FROM THE NOZZLE SIDE DUE TO PROXIMITY OF BRANCH CONNECTION. NO UT FROM THE TUBE SHEET SIDE DUE TO TUBE SHEET CONFIGURATION. **SS-64**
304450	CSAHRG-1A-S2 TUBE SHEET TO SHELL	C-A C1.30	UT45 UT45T	600-45/3	- X - X - -	**SS-63**
304500	CSAHRG-1A-S3 SHELL TO REINFORCING COLLAR	C-A C1.10	UT45 UT45T	600-45/3	- X - X - -	**SS-62/SS-63**
304550	CSAHRG-1A-S4 SHELL TO CAP	C-A C1.10	UT45 UT45T	600-45/3	- X - X - -	**SS-61**
304600	CSAHRG-1A-S5 SHELL TO CAP	C-A C1.10	UT45 UT45T	600-45/3	- X - X - -	**SS-61**
304650	CSAHRG-1A-S6 REINFORCING COLLAR TO SHELL	C-A C1.10	UT45 UT45T	600-45/3	- X - X - -	**SS-62/SS-63**
304700	CSAHRG-1A-S7 SHELL TO TUBE SHEET	C-A C1.30	UT45 UT45T	600-45/3	- X - X - -	**SS-63**

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 16

REGENERATIVE HEAT EXCHANGER

SUMMARY EXAMINATION AREA		ASME			N	O		
		SEC. XI			O	G	T	
		CATGY	EXAM			R	E	N
		ITEM NO	METHOD			E	O	E
NUMBER	IDENTIFICATION			PROCEDURE		C	N	R

REMARKS
CALIBRATION BLOCK

CIRCUMFERENTIAL WELDS (FIG NO B-RGX-1)

304750	CSAHRG-1A-S8 TUBE SHEET TO NOZZLE	C-B C2.21	PT UT45 UT45T	200-1/71 600-45/3	X - - - X - X - -	LIMITED UT FROM THE NOZZLE SIDE DUE TO PROXIMITY OF BRANCH CONNECTION. NO UT FROM THE TUBE SHEET SIDE DUE TO TUBE SHEET CONFIGURATION. **SS-64**		
304775	CSAHRG-1A-S9 REINFORCING COLLAR (NOZZLE) TO SHELL	C-B C2.21	PT UT45 UT45T	200-1/71 600-45/3	X - - - X - X - -	NO CODE CREDIT TAKEN FOR UT45 OR UT45T FROM SHELL SIDE DUE TO SHELL CURVATURE. LIMITED UT45 FROM THE REINFORCING COLLAR (NOZZLE) SIDE DUE TO REINFORCING COLLAR (NOZZLE) CONFIGURATION AND CALIBRATION. **SS-61/SS-62**		
304800	CSAHRG-1A-S10 SHELL TO REINFORCING COLLAR (NOZZLE)	C-B C2.21	PT UT45 UT45T	200-1/71 600-45/3	X - - - X - X - -	NO CODE CREDIT TAKEN FOR UT45 OR UT45T FROM SHELL SIDE DUE TO SHELL CURVATURE. LIMITED UT45 FROM THE REINFORCING COLLAR (NOZZLE) SIDE DUE TO REINFORCING COLLAR (NOZZLE) CONFIGURATION AND CALIBRATION. **SS-61/SS-62**		

INTEGRAL ATTACHMENTS (FIG NO B-RGX-1)

304850	CSAHRG-1A-A1 SUPPORT ATTACHMENT WELD	C-C C3.10	PT	200-1/71	X - -			
304900	CSAHRG-1A-A2 SUPPORT ATTACHMENT WELD	C-C C3.10	PT	200-1/71	X - -			
304950	CSAHRG-1A-A3 SUPPORT ATTACHMENT WELD	C-C C3.10	PT	200-1/71	X - -			

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 17

REGENERATIVE HEAT EXCHANGER

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM		O	G T
		ITEM NO	METHOD	PROCEDURE		R	E H
						E	O E
						C	M R
							REMARKS
							CALIBRATION BLOCK

INTEGRAL ATTACHMENTS (FIG NO B-RGX-1)

305000	CSAHRG-1A-A4	C-C	PT	200-1/71	X	-	-
	SUPPORT ATTACHMENT WELD	C3.10					

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 18

RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1A

SUMMARY EXAMINATION AREA		ASME			N	O	
NUMBER IDENTIFICATION		SEC. XI	CATGY	EXAM	O	G	T
		ITEM NO	METHOD	PROCEDURE	R	E	H
					E	O	E
					C	M	R
							REMARKS
							CALIBRATION BLOCK

CIRCUMFERENTIAL WELDS (FIG NO B-RHX-1)

305450	RNHR5-1A-S2	C-A	UT45	600-45/3	-	X	-	NO UT FROM THE FLANGE SIDE DUE TO FLANGE
	SHELL TO FLANGE	C1.10	UT45T	DEV. 1	-	X	-	CONFIGURATION.
			UT60		-	X	-	

SS-65

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 19

FEEDWATER SYSTEM

SUMMARY EXAMINATION AREA		ASME			H	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	H
		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER IDENTIFICATION					C	M	R
							REMARKS
							CALIBRATION BLOCK

1B-FW-1012-GA2 (FIG NO B-FW-1)

500000	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	VALVE TO PIPE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM PIPE SIDE.
								CS-3

500020	2	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	PIPE TO VALVE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
			UT45T		X	-	-	FROM PIPE SIDE.
								CS-3

500040	3	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	VALVE TO PIPE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
			UT45T		X	-	-	FROM PIPE SIDE.
								CS-3

500060	4	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ.
	PIPE TO PIPE	C5.51	UT45	600-41/19	X	-	-	
			UT45T		X	-	-	
								CS-3

1B-FW-1029-AA2 (FIG NO B-FW-1)

503660	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ.
	ELBOW TO PIPE	C5.51	UT45	600-41/19	X	-	-	
				DEV. 2				
								CS-4

503670	1PL1-LPL8	C-C	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. LIMITED
	PIPE LUGS	C3.20	UT45	800-119/2	-	X	-	EXAMINATION DUE TO INACCESSIBILITY TO
			UT45T		X	-	-	ENDS AND BACKSIDE OF PIPE LUGS.
								CS-33

503680	2	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ.
	PIPE TO PIPE	C5.51	UT45	600-41/19	-	X	-	
				DEV. 2				
								CS-4

REVISION: 0

CLASS 2 COMPONENTS

PAGE : 20

FEEDWATER SYSTEM

503700	3	C-F-2	MT	300-1/36	X - -	AUGMENTED 161 - BEZ.
	PIPE TO PIPE	C5.51	UT45	600-41/19	- X -	
				DEV. 2		
						CS-4
503720	4	C-F-2	MT	300-1/36	X - -	CODE REQUIRED TWO DIRECTIONAL PARALLEL
	PIPE TO VALVE	C5.51	UT45	600-41/19	X - -	COVERAGE OBTAINED FROM PIPE SIDE.
				DEV. 2		
						CS-4

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 21

MAIN STEAM SYSTEM

SUMMARY EXAMINATION AREA NUMBER IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	EXAM METHOD	PROCEDURE	H O G T R E M E O E C M R	REMARKS **CALIBRATION BLOCK**
<u>30-MS-1001-GA2 (FIG NO 8-MS-2)</u>					
551700 24 PIPE TO PIPE	C-F-2 CS.51	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	AUGMENTED ISI - BEZ. **CS-5**
551720 24LD LONGITUDINAL WELD	C-F-2 CS.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-33**
551740 25LU LONGITUDINAL WELD	C-F-2 CS.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-33**
551760 25 PIPE TO PIPE	C-F-2 CS.51	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	AUGMENTED ISI - BEZ. **CS-33**
551780 25LD LONGITUDINAL WELD	C-F-2 CS.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551782 25ALU LONGITUDINAL WELD	C-F-2 CS.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551784 25A PIPE TO PIPE	C-F-2 CS.51	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	AUGMENTED ISI - BEZ. **CS-35**

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 22

MAIN STEAM SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	REMARKS
		SEC. XI			O	G	
		CATGY	EXAM	PROCEDURE	R	E	
NUMBER	IDENTIFICATION	ITEM NO	METHOD		E	O	
					C	M	**CALIBRATION BLOCK**

<u>30-MS-1001-GA2 (FIG NO 4-MS-2)</u>							
551786	25ALD LONGITUDINAL WELD	C-F-2 C5.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	- -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551788	25BLU LONGITUDINAL WELD	C-F-2 C5.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	- -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551790	25B PIPE TO PIPE	C-F-2 C5.51	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	- -	AUGMENTED ISI - BEZ. **CS-35**
551792	25BLD LONGITUDINAL WELD	C-F-2 C5.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	- -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551800	26LU LONGITUDINAL WELD	C-F-2 C5.52	MT UT45	300-1/36 600-41/19 DEV. 2	X - - X - -	- -	EXAMINED 100% OF WELD LENGTH. AUGMENTED ISI - BEZ. **CS-35**
551820	26 PIPE TO VALVE	C-F-2 C5.51	MT UT45 UT60	300-1/36 600-41/19 DEV. 2	X - - X - - - X -	- -	AUGMENTED ISI - BEZ. CODE REQUIRED TWO DIRECTIONAL PARALLEL COVERAGE OBTAINED FROM PIPE SIDE. **CS-5**
551840	27 VALVE TO PIPE	C-F-2 C5.51	MT UT45 UT60	300-1/36 600-41/19 DEV. 2	X - - X - - - X -	- -	NO UT FROM THE VALVE SIDE DUE TO VALVE CONFIGURATION. **CS-5**

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 23

MAIN STEAM SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O	
		SEC. XI			O	G	T
		CATGY	EXAM		R	E	H
		ITEM NO	METHOD	PROCEDURE	E	O	E
NUMBER	IDENTIFICATION				C	M	R
							REMARKS
							CALIBRATION BLOCK
<hr/>							
<u>30-MS-1001-GA2 (FIG NO B-MS-2)</u>							
551860	27LD	C-F-2	MT	300-1/36	X	-	-
	LONGITUDINAL WELD	C5.52	UT45	600-41/19	X	-	-
				DEV. 2			EXAMINED 100% OF WELD LENGTH. AUGMENTED
							ISI - BEZ. LIMITED EXAMINATION DUE TO
							PROXIMITY OF PERMANENT PIPE SUPPORT.
							CS-34
551870	27PL1-27PL8	C-C	MT	300-1/36	X	-	-
	PIPE LUGS	C3.20	UT45	800-119/2	-	X	-
			UT45T	DEV. 1	X	-	-
							AUGMENTED ISI - BEZ. LIMITED
							EXAMINATION DUE TO INACCESSIBILITY TO
							ENDS AND BACKSIDE OF PIPE LUGS.
							CS-34
551880	28LU	C-F-2	MT	300-1/36	X	-	-
	LONGITUDINAL WELD	C5.52	UT45	600-41/19	X	-	-
				DEV. 2			EXAMINED 100% OF WELD LENGTH. AUGMENTED
							ISI - BEZ. LIMITED EXAMINATION DUE TO
							PROXIMITY OF PERMANENT PIPE SUPPORT.
							CS-34
551900	28	C-F-2	MT	300-1/36	X	-	-
	PIPE TO PIPE	C5.51	UT45	600-41/19	X	-	-
				DEV. 2			AUGMENTED ISI - BEZ.
							CS-33
551920	28LD	C-F-2	MT	300-1/36	X	-	-
	LONGITUDINAL WELD	C5.52	UT45	600-41/19	X	-	-
				DEV. 2			EXAMINED 100% OF WELD LENGTH. AUGMENTED
							ISI - BEZ. LIMITED EXAMINATION DUE TO
							PROXIMITY OF PERMANENT PIPE SUPPORT.
							CS-34
551940	29LU	C-F-2	MT	300-1/36	X	-	-
	LONGITUDINAL WELD	C5.52	UT45	600-41/19	X	-	-
				DEV. 2			EXAMINED 100% OF WELD LENGTH. AUGMENTED
							ISI - BEZ. LIMITED EXAMINATION DUE TO
							PROXIMITY OF PERMANENT PIPE SUPPORT.
							CS-34
551960	29	C-F-2	MT	300-1/36	X	-	-
	PIPE TO PIPE	C5.51	UTOL	600-49/3	-	-	X
			UT45	600-41/19	-	X	-
				DEV. 2			AUGMENTED ISI - BEZ. ONE UTOL CODE
							ALLOWABLE INDICATION. SEE CNF 001.
							CS-5

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 24

MAIN STEAM SYSTEM

SUMMARY EXAMINATION AREA		ASME			N	O		
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM	PROCEDURE	O	G	
		ITEM NO				R	E	
						E	O	
						C	M	
								REMARKS
								CALIBRATION BLOCK

<u>16-MS-1001-GA2 (FIG NO B-MS-2)</u>								
559520	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	EXTRUSION TO PIPE	C5.51	UT45	600-41/19	X	-	-	DIRECTION PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM PIPE SIDE.
								CS-15
559530	1A	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ.
	PIPE TO PIPE	C5.51	UT45	600-41/19	X	-	-	
				DEV. 2				**CS-15**
559540	2	C-F-2	MT	300-1/36	X	-	-	
	PIPE TO WELD CAP	C5.51	UT45	600-41/19	X	-	-	
				DEV. 2				**CS-15**
<u>6-MS-1001-GA2(A) (FIG NO B-MS-2)</u>								
565400	1	C-F-2	MT	300-1/36	X	-	-	CODE REQUIRED TWO DIRECTIONAL PARALLEL
	EXTRUSION TO FLANGE	C5.51	UT45	600-41/19	X	-	-	COVERAGE OBTAINED FROM FLANGE SIDE.
				DEV. 2				**CS-75**
<u>6-MS-1001-GA2(B) (FIG NO B-MS-2)</u>								
566500	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	EXTRUSION TO FLANGE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM FLANGE SIDE.
								CS-75
<u>6-MS-1001-GA2(C) (FIG NO B-MS-2)</u>								
566600	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	EXTRUSION TO FLANGE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM FLANGE SIDE.
								CS-75

DATE: 01/10/90
REVISION: 0

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1
INSERVICE INSPECTION SUMMARY
OUTAGE 1 (1989), FIRST PERIOD, FIRST INTERVAL
CLASS 2 COMPONENTS

PAGE: 25

MAIN STEAM SYSTEM

SUMMARY EXAMINATION AREA		ASME			M	O	
NUMBER	IDENTIFICATION	SEC. XI	CATGY	EXAM		O	G T
		ITEM NO	METHOD	PROCEDURE		R	E H
						E	O E
						C	H R
							REMARKS
							CALIBRATION BLOCK

6-MS-1001-GA2(D) (FIG NO B-MS-2)

566700	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	EXTRUSION TO FLANGE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM FLANGE SIDE.
								CS-75

6-MS-1001-GA2(E) (FIG NO B-MS-2)

566800	1	C-F-2	MT	300-1/36	X	-	-	AUGMENTED ISI - BEZ. CODE REQUIRED TWO
	EXTRUSION TO FLANGE	C5.51	UT45	600-41/19	X	-	-	DIRECTIONAL PARALLEL COVERAGE OBTAINED
				DEV. 2				FROM FLANGE SIDE.
								CS-75

APPENDIX 2-B
PERSONNEL/EQUIPMENT/MATERIALS

APPENDIX 2-B

CERTIFICATES OF PERSONNEL QUALIFICATIONS

Name	UT	MT	ET	VI
Barrera, C. M.	III*	II	II	II
Fine, R. H.	III	II	III	III
Hernandez, J.	II	I	I**	I
Littlefield, C. R.	II	II	II	II
McKee, C.	I**	I**	I**	I**
Minor, C. A.	II*	II	II	II
Morton, V.	III*	III	III	III
Riddles, R. A.	II*	II	II	II
Roberds, B. A.	II*	II	II	II
Spiess, L. D.	II	II	II	II
Suhler, C. D.	II*	II	II	II
Warzyniak, M. G.	II	I	I	I

*IGSCC Qualified by EPRI

**Level I Trainee

APPENDIX 2-B

MATERIAL AND EQUIPMENT CERTIFICATIONS

MATERIAL

<u>Type</u>	<u>Date</u>
Berol Prismacolor Black Pencils #935, Log #2594	19 Jun 89
Berol Prismacolor White Pencils #938, Log #2780	19 Jun 89
Kodak Neutral Gray Card (1/64" Black Line), Log #1766	02 May 83
MT No. 1 Gray Powder, Magnaflux, Batch #85D074, Log #2054	12 Jul 85
Spotcheck PT Cleaner/Remover, Magnaflux SKC-S, Batch #89A01K, Log #2761	17 Jan 89
Spotcheck PT Penetrant, Magnaflux SKL-HF/S, Batch #84L058, Log #1955C	26 Dec 84
Spotcheck PT Developer, Magnaflux SKD-S, Batch #84M029, Log #1955B	18 Dec 84
Sonotrace 40, Batch #8874, Log #2810	25 Oct 88

EQUIPMENT

<u>Brand</u>	<u>Serial No.</u>	<u>Date</u>
Pyrometer, Amprobe, Fastemp	131	28 Jun 89
Pyrometer, Amprobe, Fastemp	133	28 Jun 89
Pyrometer, Amprobe, Fastemp	137	28 Jun 89
Pyrometer, Amprobe, Fastemp	157	28 Jun 89
Pyrometer, Amprobe, Fastemp	166	28 Jun 89
Magnetic Particle Yoke, Whiteline	WL-1-13	23 Jun 89
Magnetic Particle Yoke, Whiteline	WL-3-1	23 Jun 89
Magnetic Particle Calibration Block, 11.3 pounds	B70198-24	17 Mar 81
Sonic FTS MK I	01107E	27 Apr 89
Sonic FTS MK I	01112E	28 Apr 89
Sonic FTS MK I	01121E	24 Jul 89
Sonic FTS MK I	04327E	21 Apr 89
Sonic FTS MK I	04333E	22 Jun 89
Sonic FTS MK I	06909E	12 Jun 89
Sonic FTS MK I	07010E	12 Jun 89
Sonic FTS MK I	774206	20 Apr 89

APPENDIX 2-B

MATERIAL AND EQUIPMENT CERTIFICATIONS

TRANSDUCERS

<u>Brand</u>	<u>Serial No.</u>	<u>Date</u>
Aerotech	013718	12 Apr 89
Aerotech	015838	18 Oct 88
Aerotech	A11510	30 Jan 89
Aerotech	G21651	30 Jan 89
Aerotech	H24817	17 Mar 89
Aerotech	M105	16 Feb 89
SwRI	823	18 Apr 89
SwRI	1523	31 Jan 89
SwRI	1588	21 Oct 88
SwRI	1700	15 Dec 88
SwRI	1795	04 Oct 88
SwRI	1820	18 Apr 89
SwRI	2049	11 Jan 89
SwRI	2052	04 Nov 88
SwRI	2546	13 Apr 89
SwRI	2548	17 Feb 89
SwRI	2553	13 Apr 89
SwRI	2680	31 Jan 89
SwRI	2787	10 Nov 88
SwRI	2831	18 Oct 88
SwRI	2894	12 Apr 89
SwRI	2930	13 Apr 89
SwRI	3437	28 Nov 88
SwRI	3439	28 Nov 88

APPENDIX 2-C
SWRI PROCEDURES

APPENDIX 2-C

SOUTHWEST RESEARCH INSTITUTE NONDESTRUCTIVE TESTING PROCEDURES

<u>Procedure No./Rev.</u>	<u>Title</u>	<u>HL&P Document Log Number</u>
SwRI-NDT-200-1/71	Solvent-Removable Liquid Penetrant Color Contrast Examination for the South Texas Project	400183-00015-A-SW
SwRI-NDT-300-1/36	Dry Powder Magnetic Particle Examination	400183-00016-A-SW
SwRI-NDT-600-11/46	Manual Ultrasonic Examination of Noz- zle Inner Radius Sections	400183-00017-A-SW
SwRI-NDT-600-15/73	Manual Ultrasonic Examination of Pres- sure Vessel Welds	400183-00018-A-SW
SwRI-NDT-600-41/19 Dev. 2	Manual Ultrasonic Examination of Fer- ritic Pressure Piping Welds	400183-00021-A-SW 400183-00021-B-SW
SwRI-NDT-600-45/3 Dev. 1	Manual Ultrasonic Examination of Pres- sure Retaining Welds in Thin-Wall Vessels	400183-00022-A-SW 400183-00022-B-SW
SwRI-NDT-600-49/3	Manual Ultrasonic Examination Using Longitudinal Wave Straight-Beam Techniques	400183-00002-B-SW
SwRI-NDT-800-114/4 Dev. 1 Dev. 2	Manual Ultrasonic Examination of Sim- ilar and Dissimilar Metal Welds in Aus- tenitic Piping Systems for the South Texas Project	400183-00024-A-SW 400183-00024-B-SW 400183-00024-C-SW
SwRI-NDT-800-119/2 Dev. 1	Manual Ultrasonic Examination of Pres- sure Piping Support Attachments at South Texas Project	400183-00027-A-SW 400183-00027-B-SW
SwRI-NDT-800-121/1	Manual Ultrasonic Examination of Pres- surizer Support Skirt Attachment Welds at STP	400183-00025-A-SW
SwRI-NDT-800-128/0	Manual Ultrasonic Examination of Aus- tenitic Pressure Piping Welds and Fit- tings for Thermal Fatigue Cracking	400183-00003-A-SW

APPENDIX 2-C
SOUTHWEST RESEARCH INSTITUTE
NONDESTRUCTIVE TESTING PROCEDURES

<u>Procedure No./Rev.</u>	<u>Title</u>	<u>HL&P Document Log Number</u>
SwRI-NDT-800-132/0 Dev. 1	Manual Ultrasonic Examination of Aus- tenitic Pressure Piping Welds at South Texas Project	400183-00020-A-SW 400183-00020-B-SW
SwRI-NDT-900-7/15	Visual Examination of Nuclear Power Plant Components	400183-00026-A-SW

APPENDIX 2-C
SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECTS OPERATING PROCEDURES

<u>Procedure No./Rev.</u>	<u>Title</u>	<u>HL&P Document Log Number</u>
IX-FE-101-5 Change 1	Deviations to Nuclear Projects Operating Procedures	400183-00005-A-SW
IX-FE-103-4	Weld Joint Identification Marking on Nuclear Power Plant Piping	400183-00023-A-SW
IX-FE-116-2	Recording Data from Direct Visual, Liquid Penetrant, and Magnetic Particle Examinations	400183-00028-A-SW
IX-FE-117-6	Recording Indications During Ultrasonic Examination of Pressure-Retaining Components and Supports	400183-00029-A-SW
IX-FE-118-5	Recording Indications During Ultrasonic Examinations of Pressure Vessel Welds	400183-00006-A-SW
IX-FE-131-0	Comparison of Inservice Examination Data	400183-00007-A-SW
IX-FE-132-0	Ultrasonic Indication Resolution Procedure	400183-00008-A-SW
IX-FE-137-0	Ultrasonic Linearity Measurements	400183-00009-A-SW
X-FE-101-3	Onsite NDE Records Control	400183-00010-A-SW
XII-FE-127-0	Control of Nuclear Inspection Equipment and Materials	400183-00011-A-SW
XVII-AG-101-3 Change 1	Data Storage and Retrieval	400183-00012-A-SW

APPENDIX 2-D

ISI EXAMINATION LIMITATIONS

APPENDIX 2-D

INSERVICE EXAMINATION LIMITATIONS FOR CLASS 1 AND CLASS 2 COMPONENTS

Table of Contents

South Texas Project Electric Generating Station, Unit 1 Summary of Inservice Examination Limitation

Class 1 Components

ASME Category B-D
Pressurizer

ASME Category B-F
Pressurizer

ASME Category B-J
Piping
Reactor Coolant System

Class 2 Components

ASME Category C-A
Residual Heat Removal Heat Exchanger 1A

ASME Category C-B
Regenerative Heat Exchanger

ASME Category C-C
Piping
Feedwater
Main Steam

ASME Category C-F-2
Piping
Main Steam System

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1 SUMMARY OF INSERVICE EXAMINATION LIMITATIONS

The following tables provide details on the limitations which were encountered during the inservice examinations (ISI) at the South Texas Project Electric Generating Station (STP), Unit 1. Each table of this summary provides the following information as described:

Column 1 - Class/Category/Item No./Examination Requirement

Identifies the ASME Section XI Code Class, Category, Item Number, and Examination Requirement (volumetric or surfac.) for the specific examination area listed in Column 2. This information is derived from Tables IWB-2500-1 and IWC-2500-1 of the 1983 Edition of ASME Section XI (with Addenda through Summer 1983), and Tables 1 and 2 of Code Case N-408.

Column 2 - Line No./Subassembly
Weld Identification
Weld ID Figure
Weld Configuration
Examination Method

Provides information for each examination area by line number (piping) or subassembly number (vessel), unique weld identification number, SwRI weld ID figure reference, weld configuration (pipe-to-tee, head-to-shell, etc.), and examination method (UT, UT/PT, or UT/MT).

Column 3 - Exam Type

Lists the Methods of Examinations used for each area by specific angles for UT (0, 45, 45T, 60, 60T) and surface technique (MT or PT), if required.

Column 4 - % Coverage

The extent of coverage for each exam type is expressed in percentages based on the examination volume/area required in Section XI. Depending on method, the percentage coverage may be represented in more than one way.

Surface methods are the simplest and are expressed as a percentage of the required surface area receiving no coverage and the remaining balance from 100% as the total coverage.

Ultrasonic coverage is first expressed for each exam type as a percentage of the volume receiving no coverage, angle-beam coverage in one direction only, and angle-beam coverage in two directions. These percentages are then used to compute the effective coverage for that exam type. In the case of 0 degree, the effective coverage is equal to the balance of 100% minus the percentage receiving no coverage. The effective coverage for angle beam is calculated from the following formula:

$$c = \frac{a + 2 \cdot b}{2} \quad (\text{effective coverage formula, angle beam})$$

where a = one direction only percentage
b = two direction percentage

Examples:

(1)	none	1 dir	2 dir
	0%	0%	100%

$$c = \frac{0 + 2 \cdot 100}{2} = 100\% \text{ effective coverage}$$

(2)	none	1 dir	2 dir
	0%	100%	0%

$$c = \frac{100 + 2 \cdot 0}{2} = 50\% \text{ effective coverage}$$

(3)	none	1 dir	2 dir
	50%	50%	0%

$$c = \frac{50 + 2 \cdot 0}{2} = 25\% \text{ effective coverage}$$

The total UT coverage is then expressed as the average of the effective coverage percentages for each UT exam type. Each UT exam type is considered as equal weight in the calculation of the average.

This method for reporting UT coverage as a single percentage for all UT exam types was the preferred method by HL&P for identifying UT examination area limitations.

Column 5 - Limitation

A description of the type of limitation and primary reason for why the coverage was limited is provided in this section.

ASME CATEGORY B-D

SECTION XI CODE COVERAGE LIMITATIONS
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1
SYSTEM: PRESSURIZER (CLASS 1)

CLASS	- LINE NO./SUBASSEMBLY		% COVERAGE						
CATEGORY	- WELD IDENTIFICATION								
ITEM NO.	- WELD ID FIGURE								
EX. RQMT	- WELD CONFIGURATION	EXAM	1	2	EFF.				
	- EXAMINATION METHOD	TYPE	NONE	DIR	DIR	COV.	TOTAL	LIMITATION	
=====									
1	PRZ-1	0	29	-	-	71		LIMITED UT FROM THE NOZZLE SIDE DUE	
B-D	N3	45/60	5	50	45	70		TO NOZZLE CONFIGURATION.	
B3.110	FIGURE NO. A-PRZ-1	45T	29	0	71	71			
VOL		60T	29	0	71	71			
	SHELL-TO-NOZZLE								
	UT						71		

1	PRZ-1	0	30	-	-	70		LIMITED UT FROM THE NOZZLE SIDE DUE	
B-D	N4A	45/60	6	53	41	68		TO NOZZLE CONFIGURATION.	
B3.110	FIGURE NO. A-PRZ-1	45T	30	0	70	70			
VOL		60T	30	0	70	70			
	SHELL-TO-NOZZLE								
	UT						69		

ASME CATEGORY B-F

SECTION XI CODE COVERAGE LIMITATIONS

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1

SYSTEM: PRESSURIZER (CLASS 1)

CLASS	LINE NO./SUBASSEMBLY	WELD IDENTIFICATION	WELD ID FIGURE	WELD CONFIGURATION	EXAM TYPE	% COVERAGE					LIMITATION
						NONE	DIR	DIR	EFF.	COV.	
EX. RQMT	EXAMINATION METHOD	TYPE								TOTAL	
1	PRZ-1	45	0	3	97	99					LIMITED UT45 FROM THE NOZZLE SIDE
B-F	N3-SE	45T	0	0	100	100					DUE TO NOZZLE CONFIGURATION.
B5.40	FIGURE NO. A-PRZ-1										
VOL/SURF	NOZZLE-TO-SAFE END									99	
	UT/PT	PT	0	-	-	-	-	-	-	100	
1	PRZ-2	45	0	36	64	82					LIMITED UT45 FROM THE NOZZLE SIDE
B-F	N4A-SE	45T	0	0	100	100					DUE TO NOZZLE CONFIGURATION.
B5.40	FIGURE NO. A-PRZ-1										
VOL/SURF	NOZZLE-TO-SAFE END									91	
	UT/PT	PT	0	-	-	-	-	-	-	100	

ASME CATEGORY B-J

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1

ASME SECTION XI CODE COVERAGE LIMITATIONS

SYSTEM: REACTOR COOLANT (CLASS 1 PIPING)

CLASS	LINE NO./SUBASSEMBLY	WELD IDENTIFICATION	% COVERAGE						LIMITATION
CATEGORY	WELD ID FIGURE	EXAM	1	2	EFF.	COV.	TOTAL		
ITEM NO.	WELD CONFIGURATION	TYPE	NONE	DIR	DIR	COV.	TOTAL		
EX. RQMT	EXAMINATION METHOD	TYPE	NONE	DIR	DIR	COV.	TOTAL		
1	6-RC-1015	45/60	0	0	100	100		LIMITED UT45T ON THE TEE SIDE DUE TO	
B-J	14	45T	6	1	93	94		PROXIMITY OF WELDED SUPPORT BRACKET.	
B9.11	FIGURE NO. A-RC-7								
VOL/SURF	TEE-TO-PIPE						97		
	UT/PT	PT	0	-	-	-	100		

ASME CATEGORY C-A

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1
 ASME SECTION XI CODE COVERAGE LIMITATIONS
 SYSTEM: RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1A (CLASS 2)

	LINE NO./SUBASSEMBLY		% COVERAGE						
CLASS	WELD IDENTIFICATION								
CATEGORY	WELD ID FIGURE		-----						
ITEM NO.	WELD CONFIGURATION	EXAM	1	2	EFF.				
EX. RMT	EXAMINATION METHOD	TYPE	NONE	DIR	DIR	COV.	TOTAL	LIMITATION	
=====									
2	RHARRS-1A	45/60	25	0	75	72	NO UT FROM THE FLANGE SIDE DUE TO		
C-A	B2	45T	25	0	75	75	FLANGE CONFIGURATION.		
C1.10	FIGURE NO. B-RHX-1								
VOL									
	SHELL-TO-FLANGE								

	UT						75		

ASME CATEGORY C-B

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1
 ASME SECTION XI CODE COVERAGE LIMITATIONS
 SYSTEM: REGENERATIVE HEAT EXCHANGER 1A (CLASS 2)

LINE NO./SUBASSEMBLY		WELD IDENTIFICATION		% COVERAGE					LIMITATION
CLASS	WELD ID FIGURE	EXAM	1	2	EFF.				
CATEGORY	WELD CONFIGURATION	TYPE	NONE	DIR	DIR	COV.	TOTAL		
ITEM NO.	EXAMINATION METHOD								
=====									
2	CSAHRG-1A	45	8	0	92	92		LIMITED UT FROM THE NOZZLE SIDE DUE	
C-B	S1	45T	21	8	71	75		TO PROXIMITY OF BRANCH CONNECTION.	
C2.21	FIGURE NO. B-RGX-1							NO UT FROM THE TUBE SHEET SIDE DUE	
VOL/SURF							84	TO TUBE SHEET CONFIGURATION.	
	NOZZLE-TO-TUBE SHEET								
	UT/PT	PT	0	-	-	-	100		
=====									
2	CSAHRG-1A	45	7	0	93	93		LIMITED UT FROM THE NOZZLE SIDE DUE	
C-B	S8	45T	20	8	72	76		TO PROXIMITY OF BRANCH CONNECTION.	
C2.21	FIGURE NO. B-RGX-1							NO UT FROM THE TUBE SHEET SIDE DUE	
VOL/SURF							85	TO TUBE SHEET CONFIGURATION.	
	TUBE SHEET-TO-NOZZLE								
	UT/PT	PT	0	-	-	-	100		
=====									
2	CSAHRG-1A	45	28	15	57	65		NO MEANINGFUL UT PERFORMED FROM THE	
C-B	S9	45T	33	0	67	67		SHELL SIDE DUE TO SHELL CURVATURE.	
C2.21	FIGURE NO. B-RGX-1							LIMITED UT45 FROM THE COLLAR SIDE	
VOL/SURF							66	DUE TO COLLAR CONFIGURATION. UT45	
	REINFORCING COLLAR							ALSO LIMITED DUE TO FIRST DAC POINT	
	(NOZZLE)-TO-SHELL							BEING CONTAINED WITHIN THE LOWER	
	UT/PT	PT	0	-	-	-	100	1/3RD EXAMINATION VOLUME.	
=====									
2	CSAHRG-1A	45	28	15	57	65		NO MEANINGFUL UT PERFORMED FROM THE	
C-B	S10	45T	33	0	67	67		SHELL SIDE DUE TO SHELL CURVATURE.	
C2.21	FIGURE NO. B-RGX-1							LIMITED UT45 FROM THE COLLAR SIDE	
VOL/SURF							66	DUE TO COLLAR CONFIGURATION. UT45	
	SHELL-TO-REINFORCING							ALSO LIMITED DUE TO FIRST DAC POINT	
	COLLAR (NOZZLE)							BEING CONTAINED WITHIN THE LOWER	
	UT/PT	PT	0	-	-	-	100	1/3RD EXAMINATION VOLUME.	

ASME CATEGORY C-C

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1

ASME SECTION XI CODE COVERAGE LIMITATIONS

SYSTEM: FEEDWATER - PIPE LUGS (CLASS 2 PIPING)

CLASS	- LINE NO./SUBASSEMBLY	EXAM	% COVERAGE					LIMITATION
			1	2	EFF.	COV.	TOTAL	
CATEGORY	- WELD IDENTIFICATION	TYPE	NONE	DIR	DIR	COV.	TOTAL	
ITEM NO.	- WELD ID FIGURE							
EX. RQMT	- EXAMINATION METHOD							
2	1B-FW-1029	45	1	35	64	82		LIMITED UT AND MT COVERAGE DUE TO
C-C	1PL1-1PL8							INACCESSIBILITY.
C3.20	FIGURE NO. 8-FW-1							
SURF							82	
VOL *	PIPE LUGS							
	UT/MT	MT	39	-	-	-	61	* AUG P51 - BEZ

ASME CATEGORY C-C

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1

ASME SECTION XI CODE COVERAGE LIMITATIONS

SYSTEM: MAIN STEAM - PIPE LUGS (CLASS 2 PIPING)

	- LINE NO./SUBASSEMBLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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ASME CATEGORY C-F-2

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1

ASME SECTION XI CODE COVERAGE LIMITATIONS

SYSTEM: MAIN STEAM - LOOP 1 (CLASS 2 PIPING)

CLASS	LINE NO./SUBASSEMBLY	WELD IDENTIFICATION	EXAM	% COVERAGE				TOTAL	LIMITATION
				1	2	EFF.	COV.		
ITEM NO.	WELD CONFIGURATION	EXAM	TYPE	NONE	DIR	DIR	COV.		
EX. RMT	EXAMINATION METHOD	TYPE	NONE	DIR	DIR	COV.			
2	30-MS-1001	45/60	7	31	62	78			NO UT FROM THE VALVE SIDE DUE TO VALVE CONFIGURATION.
C-F-2	27								
CS.51	FIGURE NO. B-MS-2								
VOL/SURF	VALVE-TO-PIPE							78	
	UT/MT	MT	0	-	-	-	-	100	
2	30-MS-1001	45	9	0	91	91			LIMITED UT45 DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
C-F-2	27LD								
CS.52	FIGURE NO. B-MS-2							91	
VOL/SURF	LONGITUDINAL WELD								
	UT/MT	MT	9	-	-	-	-	91	LIMITED MT COVERAGE DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
2	30-MS-1001	45	0	3	97	99			LIMITED UT45 DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
C-F-2	28LU								
CS.52	FIGURE NO. B-MS-2							99	
VOL/SURF	LONGITUDINAL WELD								
	UT/MT	MT	4	-	-	-	-	96	LIMITED MT COVERAGE DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
2	30-MS-1001	45	47	0	53	53			LIMITED UT45 DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
C-F-2	28LD								
CS.52	FIGURE NO. B-MS-2							53	
VOL/SURF	LONGITUDINAL WELD								
	UT/MT	MT	47	-	-	-	-	53	LIMITED MT COVERAGE DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
2	30-MS-1001	45	69	0	31	31			LIMITED UT45 DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.
C-F-2	29LU								
CS.52	FIGURE NO. B-MS-4							31	
VOL/SURF	LONGITUDINAL WELD								
	UT/MT	MT	69	-	-	-	-	31	LIMITED MT COVERAGE DUE TO PROXIMITY OF PERMANENT PIPE SUPPORT.

APPENDIX 2-E

**OWNER'S REPORT FOR INSERVICE INSPECTIONS
NIS-1 FORMS**

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Houston Lighting & Power Company; P. O. Box 1700; Houston, Texas 77001
(Name and Address of Owner)
2. Plant South Texas Project Electric Generating Station; P. O. Box 289; Wadsworth, Texas 77483
(Name and Address of Plant)
3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N. A.
5. Commercial Service Date B-25-BB 6. National Board Number for Unit N.A.
7. Components Inspected ASME Code Class 1 (IWB) Items (See Page 3 of 3 for ID Nos.)

[illegible]

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this 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.

8. Examination Dates 8-10-89 to 9-7-89 9. Inspection Interval from 8-25-88 to 8-25-98

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See Page 3 of 3 for list of examinations performed. See

Note 1 for status of work required for first interval.

11. Abstract of Conditions Noted

See Note 2.

12. Abstract of Corrective Measures Recommended and Taken

See Note 3.

We certify that the statements made in this report are correct and the examinations and 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.
Houston Lighting &
 Date 1-9 19 90 Signed Power Company By Andrew J. Sevelby
 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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of

Long Grove, Ill. have inspected the components described in this Owner's Report during the period 8-10-89 to 9-7-89 and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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.

B. Lumen Commissions TEX 876
 Inspector's Signature National Board, State, Province, and Endorsements
 Date 1-11- 19 90

(12/82)

NOTES

- 1 The examinations performed during this outage (1RE01) constitute the first ISI of the first period in the first ten-year interval of commercial operation. Approximately 32% of the required examinations (Class 1) for the first interval are allocated in the first period. The examinations completed during this outage constitute approximately 10% of the required examinations for the first interval.
- 2 Surface, volumetric and visual examinations were performed on Class 1 components. No significant surface or volumetric indications were noted. Visual examination of the Reactor Pressure Vessel interior surfaces revealed a plastic wire tie on the flange seal surface.
- 3 The plastic wire (see Note 2) was removed. No other corrective measures were recommended or taken.

ATTACHMENT TO FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS

B. J. Severy 1-9-90
B. J. Severy 1-11-90
 Page 3 of 3

1. Owner: Houston Lighting & Power Company; Electric Tower, P.O. Box 1700; Houston, TX 77001
 2. Plant: South Texas Project Electric Generating Station; P.O. Box 289; Wadsworth, TX 77483
 3. Plant Unit: 1 4. Owner Certificate of Authorization (if required): N/A
 5. Commercial Service Date: August 25, 1988 6. National Board Number for Unit: N/A
 7. Components Inspected: ASME Code Class 1 Items

ASME CATGY	ASME ITEM	COMP	IDENTIFICATION NO.	EXAM METH	REMARKS
B-D	B3.110	PRZR	PRZ-1-N41	UT	NOZZLE-TO-SHELL
B-D	B3.110	PRZR	PRZ-1-N3	UT	NOZZLE-TO-SHELL
B-D	B3.120	PRZR	PRZ-1-N4A-1R	UT	NOZZLE INNER RADIUS
B-D	B3.120	PRZR	PRZ-1-N3-1R	UT	NOZZLE INNER RADIUS
B-F	B5.40	PRZR	PRZ-1-N3-BE	UT,PT	NOZZLE-TO-SAFE END
B-F	B5.40	PRZR	PRZ-1-N4A-BE	UT,PT	NOZZLE-TO-SAFE END
B-G-2	B7.20	PRZR	MANWAY BOLTING	VT-1	
B-G-2	B7.30	STM GEN	SG-1A-1MB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1A-OMB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1B-1MB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1B-OMB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1C-1MB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1C-OMB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1D-1MB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.30	STM GEN	SG-1D-OMB	VT-1	PRI. MANWAY BLTG - BASELINE EXAMINATION DUE TO REPLACEMENT
B-G-2	B7.50	RC	6-RC-1009-9FB	VT-1	FLANGE BOLTING
B-G-2	B7.70	VG-5	XS10046B-VB	VT-1	12-INCH OD S1 SYSTEM VALVE - BOLTING
B-H	B8.20	PRZR	PRZ-1-SK	MT,UT	SKIRT ATTACHMENT WELD
B-J	B9.11	RC	4-RC-1126-1	UT,PT	CIRC. WELD
B-J	B9.11	RC	4-RC-1126-5	UT,PT	CIRC. WELD
B-J	B9.11	RC	4-RC-1323-3	UT,PT	CIRC. WELD
B-J	B9.11	RC	6-RC-1004-1	UT,PT	CIRC. WELD
B-J	B9.11	RC	6-RC-1015-1	UT,PT	CIRC. WELD
B-J	B9.11	RC	6-RC-1015-14	UT,PT	CIRC. WELD
B-J	B9.11	RC	6-RC-1015-8	UT,PT	CIRC. WELD
B-J	B9.11	RC	6-RC-1015-9	UT,PT	CIRC. WELD
B-J	B9.11	RH	8-RH-1112-1	UT,PT	CIRC. WELD
B-J	B9.21	RC	3-RC-1003-1	PT	CIRC. WELD
B-J	B9.21	RC	3-RC-1003-2	PT	CIRC. WELD
B-J	B9.21	CV	2-CV-1121-3	PT	CIRC. WELD
B-J	B9.40	RC	2-RC-1003-1	PT	SOCKET WELD
B-J	B9.40	RC	2-RC-1003-2	PT	SOCKET WELD
B-N-2	B12.50	VG-5	XS10046B-VIS	VT-3	12-INCH OD S1 SYSTEM VALVE - INTERIOR SURFACE
B-N-1	B13.10	RPV	VESSEL INTERIOR	VT-3	
NRCB	B8-08	RC	2-RC-1003-2	PT	SOCKET WELD - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	3-RC-1003-1	UT	CIRC. WELD - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	3-RC-1003-2	UT	CIRC. WELD - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	4-RC-1126-4/5E	UT	ELBOW - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	4-RC-1126-5	UT	CIRC. WELD - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	4-RC-1323-2/3E	UT	ELBOW - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	4-RC-1323-3	UT	CIRC. WELD - AUGMENTED ISI-NRCB B8-08
NRCB	B8-08	RC	6-RC-1003-4/5I	UT	TEE - AUGMENTED ISI-NRCB B8-08

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Houston Lighting & Power Company; P. O. Box 1700; Houston, Texas 77001
(Name and Address of Owner)
2. Plant South Texas Project Electric Generating Station; P. O. Box 289; Wadsworth, Texas 77483
(Name and Address of Plant)
3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N. A.
5. Commercial Service Date 8-25-88 6. National Board Number for Unit N.A.
7. Components Inspected ASME Code Class 2 (IWC) Items (See Page 3 of 3 for ID Nos.)

[illegible]

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this 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.

8. Examination Dates 8-10-89 to 9-7-89 9. Inspection Interval from 8-25-88 to 8-25-98

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See Page 3 of 3 for list of examinations performed. See Note 1 for status of work required for first interval.

11. Abstract of Conditions Noted

See Note 2.

12. Abstract of Corrective Measures Recommended and Taken

No corrective measures were recommended or taken.

We certify that the statements made in this report are correct and the examinations and 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.
Houston Lighting &
 Date 1-9 1990 Signed Power Company By Charles J. Dancy
 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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of Long Grove, Ill. have inspected the components described in this Owner's Report during the period 8-10-89 to 9-7-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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 TEX 896
 Inspector's Signature National Board, State, Province, and Endorsements
 Date 1-11- 19 90

(12/82)

NOTES

- 1 The examinations performed during this outage (1RF01) constitute the first ISI of the first period in the first ten-year interval of commercial operation. Approximately 33% of the required examinations (Class 2) for the first interval are allocated in the first period. The examinations completed during this outage constitute approximately 10% of the required examinations for the first interval.
- 2 Surface and volumetric examinations were performed on Class 2 components. No surface indications were noted. Volumetric examinations revealed Code allowable flaws in two (2) welds. These same flaws were detected during the PSI and dispositioned as acceptable.

ATTACHMENT TO FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS

1-9-90
1-11-90

Page 3 of 3

1. Owner: Houston Lighting & Power Company; Electric Tower, P.O. Box 1700; Houston, TX 77001
 2. Plant: South Texas Project Electric Generating Station; P.O. Box 289; Wadsworth, TX 77483
 3. Plant Unit: 1 4. Owner Certificate of Authorization (if required): N/A
 5. Commercial Service Date: August 25, 1985 6. National Board Number for Unit: N/A
 7. Components Inspected: ASME Code Class 2 Items

ASME CATGY	ASME ITEM	COMP	IDENTIFICATION NO.	EXAM METH	REMARKS
C-A	C1.10	REGN NX	CSAHRG-1A-B3	UT	SHELL-TO-REINFORCING COLLAR
C-A	C1.10	REGN NX	CSAHRG-1A-B4	UT	SHELL-TO-CAP
C-A	C1.10	REGN NX	CSAHRG-1A-B5	UT	SHELL-TO-CAP
C-A	C1.10	REGN NX	CSAHRG-1A-B6	UT	REINFORCING COLLAR-TO-SHELL
C-A	C1.10	REGN NX	CSAHRG-1A-B7	UT	SHELL-TO-TUBE SHEET
C-A	C1.10	RNR NX	RNHRG-1A-B2	UT	SHELL-TO-FLANGE
C-A	C1.30	REGN NX	CSAHRG-1A-B2	UT	TUBE SHEET-TO-SHELL
C-B	C2.21	REGN NX	CSAHRG-1A-B1	UT,PT	NOZ.-TO-TUBE SHEET - UT45 CODE ALL. FLAW (ALSO DET. DUR. PSI)
C-B	C2.21	REGN NX	CSAHRG-1A-B8	UT,PT	TUBE SHEET-TO-NOZZLE
C-B	C2.21	REGN NX	CSAHRG-1A-B9	UT,PT	REINF. COLLAR (NOZZLE)-TO-SHELL
C-B	C2.21	REGN NX	CSAHRG-1A-B10	UT,PT	SHELL-TO-REINF. COLLAR (NOZZLE)
C-C	C3.10	REGN NX	CSAHRG-1A-A(1-4)	PT	SUPPORT ATTACHMENT WELDS
C-C	C3.20	FW	1B-FW-1029-1PL(1-B)	UT,MT	PIPE LUGS - (UT)AUGMENTED ISI-BE2
C-C	C3.20	MS	30-MS-1001-27PL(1-B)	UT,MT	PIPE LUGS - (UT)AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1012-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1012-2	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1012-3	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1012-4	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1029-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1029-2	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1029-3	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	FW	1B-FW-1029-4	UT,MT	CIRC. WELD
C-F-2	C5.51	MS	6-MS-1001(A)-1	UT,MT	CIRC. WELD
C-F-2	C5.51	MS	6-MS-1001(B)-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	6-MS-1001(C)-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	6-MS-1001(D)-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	6-MS-1001(E)-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	16-MS-1001-1	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	16-MS-1001-1A	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	16-MS-1001-2	UT,MT	CIRC. WELD
C-F-2	C5.51	MS	30-MS-1001-24	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-24LD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25LU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-25	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25LD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25ALU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-25A	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25ALD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25BLU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-25B	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-25BLD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-26LU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-26	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-27	UT,MT	CIRC. WELD
C-F-2	C5.52	MS	30-MS-1001-27LD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-28LU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-28	UT,MT	CIRC. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-28LD	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.52	MS	30-MS-1001-29LU	UT,MT	LONG. WELD - AUGMENTED ISI-BE2
C-F-2	C5.51	MS	30-MS-1001-29	UT,MT	CIRC. WELD/UTOL CODE ALL. FLAW (ALSO DET. DUR. PSI) - AUG. ISI-BE2

3.0 STEAM GENERATOR TUBING EXAMINATIONS

3.1 Introduction

This section of the Summary Report addresses the eddy current ISI of selected tubing in the four (4) steam generators conducted during the 1989 refueling outage of STPEGS-1 (1RE01). It is intended to respond to the reporting requirements of ASME Code Section XI, IWA-6000 and 4.4.5.5 (b) of the STPEGS Technical Specification.

Each of the four (4) steam generators is a Model E2 recirculating design generator, designed and fabricated by Westinghouse Electric Corporation of Tampa, Florida. Each generator contains 4864 tubes. The tubing is ASTM SB-163 Inconel material having a nominal outer diameter (OD) of 0.75 inches and nominal wall thickness of 0.043 inches.

The examination agency for the 1RE01 eddy current examination of steam generator tubes was Combustion Engineering, Inc. (CE). They acquired the first eddy current data on August 27, 1989. The last eddy current data analysis was performed on September 5, 1989.

3.2 Scope of Examinations

The STPEGS-1 Ten Year ISI Plan describes the ISI program for examination of steam generator tubing. Additionally, a supplemental ISI plan (ISI Outage Plan) entitled, "1989 Outage Plan for the Inservice Inspection of Steam Generator Tubing at the South Texas Project Electric Generating Station, Unit 1" was prepared by CE. The ISI Outage Plan identified the steam generator tube areas expected to be examined and the eddy current examination procedures expected to be used during this ISI. Prior to the beginning of the ISI, tubes were selected in accordance with 4.4.5.2 of the STPEGS Technical Specification (NUREG - 1346) and assigned to the first (4%), second (8%), or third (8%) samples listed in the ISI Outage Plan.

Because the results of the initial examinations identified by the ISI Outage Plan could have identified a situation where additional examinations of other tube areas or the same tube areas (with different nondestructive examination techniques or methods) would be required or advisable, the ISI Outage Plan established a method for quickly changing the plan scope or other details during the outage. One plan change was issued prior to the outage and was incorporated into the plan as a revision. The revised plan was HL&P Document No. 400314-00046-B-RV. Five (5) other changes were made to the ISI Outage Plan during the outage.

Each of the five (5) increased the scope of tubes expected to be examined and is included as Appendix 3-A. The ISI Outage Plan and plan changes are consistent with the requirements of the Ten Year ISI Plan.

3.3 Personnel, Procedures, and Equipment

3.3.1 Personnel Qualifications

The CE personnel who performed eddy current examinations and data analysis were certified in accordance with the requirements of IWA-2300 of ASME Code Section XI and a CE certification practice approved by HL&P. In addition, all data analysts were required to have satisfactorily completed (1) specific training in eddy current data analysis and (2) site specific training. The site specific training lecture addressed the specific design and operating history, previous eddy current examination results, and the data acquisition procedure and analysis guideline to be used for the STPEGS-1 and -2 steam generators. The site specific training also included hands on review of indications of flaw types which have been experienced at plants of similar design to that of the STPEGS. Successful completion of the site specific course required the passing of a written and practical (hands on) test. The CE personnel who performed examinations and data analysis and their certification levels are listed in Appendix 3-B.

3.3.2 Examination and Analysis Procedures

For those eddy current examinations which respond to the requirements of the STPEGS Technical Specifications, CE used the bobbin probe technique in their procedure entitled, "Eddy Current Examination of Nonferromagnetic Steam Generator Tubing Using MIZ-18 Equipment" (HL&P Document No. 400314-00036-B-RV). This technique requires that the 550, 400, 100, and 10 kHz frequency differential and absolute coil data for each tube be recorded. The CE bobbin probe procedure (400314-00036-B-RV) is an alternative to the technique described in ASME Code Section V, Article 8, I-42, which requires that the probe pull speed not exceed 14 inches per second. Instead, the procedure permits a maximum pull speed of 24 inches per second. At this pull speed the digital signal sampling rate must be raised from the typical 400 samples per second to 800 samples per second. This procedure, using the faster probe pull speed, was demonstrated to the satisfaction of the ANII in accordance with IWA-2240 of Section XI.

The eddy current data analysts worked to HL&P Engineering Instruction EI-8.01, "Steam Generator Eddy Current Data Analysis Guidelines". The data for each steam generator tube was analyzed by two (2) independent analysts in accordance with HL&P Engineering Instruction EI-8.02, "Steam Generator Eddy Current Data Control".

Every system calibration and calibration verification has been recorded on a uniquely numbered digital magnetic tape which is stored as a record. At the time of system calibration and calibration verification, the unique digital tape number is entered on the eddy current data sheet along with the time. The data sheets are also stored as records. They make it possible to locate the calibration data for each tube examination. The oscillographs (depictions of the MIZ-18 video display) for each flaw with a through wall dimension (TWD) greater than twenty (20) percent are included in Appendix 3-C filed with the applicable system response curve. The system response curves are graphs of calibration standard flaw depths versus the phase angles of the corresponding indications.

3.3.3 Equipment

CE used MIZ-18 eddy current examination instruments manufactured by Zetec, Inc. The MIZ-18 is a digital instrument which has a significantly improved dynamic range and signal-to-noise ratio as compared to analog systems. It is capable of being operated at locations remote from the steam generators (e.g., in low radiation areas). CE used 0.610 inch diameter saturated bobbin coil probes. However, bobbin probes as small as 0.560 inch diameter were used in a few cases in order to pass dents. ASME Boiler and Pressure Vessel Code, Nuclear Components Code Case N-401, "Eddy Current Examination - Section XI, Division 1", was used after it was demonstrated to the satisfaction of the ANII that the MIZ-18 digital equipment is equivalent to the analog equipment specified by the Code.

3.3.4 Calibration Standards

The U-bend areas of the Row 1 and 2 tubes in each steam generator received an in situ heat treatment to improve their resistance to stress corrosion cracking. The eddy current calibration standards used were not subjected to that heat treatment. ASME Boiler and Pressure Vessel Code, Nuclear Components Code Case N-402, "Eddy Current Calibration Standard Material, Section XI, Division 1" was used after it was demonstrated to the satisfaction of the ANII that calibration standards with and without this heat

treatment result in equivalent examinations. Otherwise, the design and material of the eddy current calibration standards used meet the requirements of the ASME Code Section XI.

3.4 Summary of Examinations

3.4.1 Technical Specification Examinations

The first sample in the ISI Outage Plan of 201 tubes in each steam generator, four (4) percent of the total tubes installed, was examined. One (1) tube in Steam Generator C, tube 27-8 had been included in the sample to verify the location of tube plugs which were installed after the last eddy current examination, the PSI. The test of that tube verified that it had been removed from service by plugging. Therefore, as specified by 4.4.5.2 (b)(3) of the STPEGS Technical Specifications, the adjacent tube 27-9 in Steam Generator C was also examined. All of these tubes were examined over their full length (from tube end to tube end). These examinations constitute the portion of the tube examinations conducted which responds to the requirements of the Technical Specification.

3.4.2 Augmented Examinations

In addition to the tube eddy current examinations required by the Technical Specification, several tubes were examined as part of an augmentation of the program. The additional numbers of tubes which were examined over their entire lengths as part of the augmented program are as follows:

<u>Steam Generator</u>	<u>Number Examined</u>
A	813
B	804
C	842
D	863

These augmenting examinations brought the total number of tubes examined full length in each steam generator to at least twenty (20) percent of the total tubes installed.

The augmented program included the motorized rotating pancake coil (MRPC) examination of all of the tubes in Row 1 (120 tubes in each steam generator) in the U-bend area, examined from the top cold leg to the top hot leg tube support plate. The U-bend MRPC examination was also performed on the following tubes:

<u>Steam Generator</u>	<u>Row</u>	<u>Column</u>
B	2	91
B	2	92
B	2	93
D	2	14
D	2	91
D	2	92
D	2	94

The augmented program included the following numbers of tubes which were examined over a portion of the tube length because either the tube was obstructed to the passage of the probe (3 tubes) or the tube was investigated for a possible loose part:

<u>Steam Generator</u>	<u>Number Examined</u>
A	236
B	193
C	194
D	267

3.5 Examination Results and Corrective Actions

No flaw was detected by the first sample of the Technical Specification program with a depth equal to or greater than 40 percent of the nominal tube wall thickness. Also, no flaw was detected by this sample which grew in depth by more than 10 percent of the thickness since the previous examination. That is, there were no defective tubes or degraded tubes exhibiting significant (greater than 10 % additional) further wall penetration detected by the first sample. Therefore, the second and third samples, which were identified by the ISI Outage Plan, became part of the augmenting examination program. The only flaw detected by the first sample with a depth greater than 20 percent of the tube wall thickness was a 28 percent flaw 22.5 inches above tube support plate 15C in tube 35-91 of Steam Generator C. This flaw was the same size when it was recorded during the PSI. No corrective actions were performed because of any flaw, detected by the Technical Specification program, with a reduction of tube wall thickness.

No flaw was detected by the augmenting program with a depth equal to or greater than 40 percent of the nominal tube wall thickness. The only flaw detected by the augmenting program with a depth greater than 20 percent of the wall thickness was a 27 percent flaw 24.8 inches above tube support plate 12C in tube 37-105 in Steam Generator B. This flaw was also detected during the PSI. However, in the judgement of the examiner at the time of the PSI,

the indication's signal to noise ratio was too small to assign a flaw size. A reanalysis of the PSI data showed that the signal did not change. Nevertheless, the indication was reported on Nonconformance Report (NCR) No. 89-1-245. No corrective actions were performed because of any flaw, detected by the augmenting program, with a reduction of tube wall thickness.

Oscillographs of the two (2) flaws detected with depths greater than 20 percent of the nominal tube wall thickness are included in Appendix 3-C. The location of indications were recorded relative to tube support plates, baffle plates, or anti-vibration bars. The tube support plates and baffle plates were numbered consecutively from 1H to 10H (on the hot leg) and from 11C to 23C (on the cold leg) starting on the hot leg side, over the U-bends, and down the cold leg side of the steam generator. The anti-vibration bars are numbered AV1, AV2, AV3, and AV4 from the hot leg to the cold leg side, respectively. Indications in the tubesheet area were recorded relative to TEH or TSH (hot leg) or TEC or TSC (cold leg) depending on whether the indications were at the tube end (E) or secondary face (S). In addition, the vertical distances from these landmarks to flaws were recorded. Lists, including the locations and depths, of all flaws which are characterized as reductions in the tube wall thickness in both the Technical Specification and augmenting programs are included in Appendix 3-D.

Lists of all dents and dings detected in each steam generator by both the Technical Specification and augmenting programs are included in Appendix 3-E.

CE encountered the following three (3) cases where the tube was restricted to the degree that eddy current probes 0.610 inches diameter would not pass:

<u>Steam Generator</u>	<u>Tube No.</u>	<u>Location</u>
B	13-102	AV4
C	36-107	15C
C	41-103	15C

These tubes were not in the first Technical Specification sample. These three obstructions were also detected and recorded during the PSI.

A substantial effort was expended during the PSI to identify and disposition tubesheet roll expansion anomalies. So, as a general rule, eddy current data analysts were not required to report the occurrence of indications of anomalies in the tube mechanical rolling during the ISI. However, two (2) "PTE" indications were

reported in the cold leg ends of tubes 20-85 and 38-74 in Steam Generator A. A "PTE" type indication is a "Partial Tubesheet Expansion". This condition was reported in tube 38-74 during the PSI. The condition in tube 20-85 had not been reported previously. Therefore, this "PTE" was reported on NCR No. 89-1-236.

Tube 27-8 in Steam Generator C was plugged after completion of the PSI and prior to this ISI. The tubes which were removed from service by plugging prior to this ISI are as follows:

<u>Steam Generator</u>	<u>Tube No.</u>
A	14-32
A	35-77
A	44-48
B	12-102
B	17-22
B	28-30
B	32-78
C	27-8
C	29-11
C	42-101
D	44-44
D	47-52
D	48-70
D	48-80

No tubes were removed from service by plugging as a result of the eddy current ISI performed during this outage. No corrective actions were performed as a result of dings, dents, obstructions, or "PTE's" detected during this ISI.

3.6 Certification of Inspections

A Section XI NIS-1 form, "Owner's Report for Inservice Inspections," has been prepared to certify the STPEGS-1 steam generator tubing ISI examinations described in this section of the Summary Report. The STPEGS-1 steam generator tubing ISI examinations have been certified by our ANII, Lumbermens Mutual Casualty Company, on the NIS-1 form included in Appendix 3-F.

APPENDIX 3-A

**CHANGES TO THE
ISI OUTAGE PLAN**

OUTAGE PLAN CHANGE FORM

DESCRIPTION OF CHANGE (ADDITION OR DELETION):

Add tube Row 26 Column 36 to group 10C (3rd Sample) in S/G "C" Bobbin
Coil Exam

REASON FOR CHANGE:

Tube was tested which was not in the Outage Plan.

TECHNICAL BASIS:

Tube Row 26 column 36 was not planned for inspection, but will be
tracked as inspected since examination was performed. This tube will
become a part of the database for tracking purposes.

SCHEDULE IMPACT:

-- NONE --

AUTHORIZATIONS:

C-E Project Manager

Daniel D. Velez

Date:

8/28/89

SED Engineer

Jim Harvey

Date:

8/28/89

OUTAGE PLAN CHANGE FORM

DESCRIPTION OF CHANGE (ADDITION OR DELETION):

Add Tube Row 2 Column 14, Row 2 Column 91, Row 2 Column 92, Row 2 Column 94 to S/B "D" MRPC U-Bend Exam.

REASON FOR CHANGE:

Suspect indications may have formed while removing Heat-Treatment heating elements during U-bend Heat-Treatment processes.

TECHNICAL BASIS:

To evaluate possible ID flaw indications resulting from Heat-Treatment element removal from the U-bend area of the Tubes in question.

SCHEDULE IMPACT:

Approximate additional 1 Hour for 3 tubes MRPC examination in Row 2.

AUTHORIZATIONS:

C-E Project Manager

Darrell D. Weber

Date:

8/28/89

SED Engineer

John Hanning

Date:

8/28/89

OUTAGE PLAN CHANGE FORM

DESCRIPTION OF CHANGE (ADDITION OR DELETION):

Add Tubes as follows to S/G "A" Bobbin Coil Exam:

R5-C96, R5-C97, R5-C98, R6-C96, R6-C98, R7-C96, R7-C97, R7-C98

Add Tubes as follows to S/G "C" Bobbin Coil Exam:

R2-C94, R2-C95, R2-C96, R3-C96, R4-C95, R4-C96

REASON FOR CHANGE:

Tubes bound tubes with PLP (Possible Loose Part) indications.

TECHNICAL BASIS:

Adjacent tubes to tubes with PLP will provide additional information on possible tube degradation due to loose parts in the S/G secondary side.

SCHEDULE IMPACT:

Additional inspection time to test a specific area of the generator will add an additional 20-80 minutes depending on current manipulator end effector location.

AUTHORIZATIONS:

C-E Project Manager

Darrell D. Velez

Date:

8.30.89

SED Engineer

Jesse F. Hunsley

Date:

8.31.89

OUTAGE PLAN CHANGE FORM

DESCRIPTION OF CHANGE (ADDITION OR DELETION):

Add tube Row 2 Column 5 to S/G B Bobbin Coil Exam.

REASON FOR CHANGE:

Tube is needed to perform a comparison from pre-heat treatment for tube Row 2 Column 5.

TECHNICAL BASIS:

This tube has a small OD indication which is desired to be compared to the pre-heat treatment examination data (from baseline) to verify heat treatment effects on defect size.

SCHEDULE IMPACT:

A minimal amount of time will be added to the schedule. (Approx. 5 min.)

AUTHORIZATIONS:

C-E Project Manager

Danell D. Weber

Date:

8/30/89

SED Engineer

Jim Hanning

Date:

8/30/89

OUTAGE PLAN CHANGE FORM

DESCRIPTION OF CHANGE (ADDITION OR DELETION):

Add Tubes as follows to S/G "A" Bobbin Coil Exam:

R4-C96, R6-C95

REASON FOR CHANGE:

Tubes selected are adjacent to tubes with FLF (Possible Loose Part) indications.

TECHNICAL BASIS:

Adjacent tubes to tubes with FLF will provide additional information on possible tube degradation due to loose parts in the S/G secondary side.

SCHEDULE IMPACT:

Additional inspection time to test a specific area of the generator will add an additional 20-30 minutes depending on current manipulator end effector location.

AUTHORIZATION:

C-E Project Manager Donald D. Velez Date: 8/30/89

SED Engineer Jim Herring Date: 8/30/89

APPENDIX 3-B

LIST OF EXAMINATION AND DATA ANALYSIS PERSONNNEL

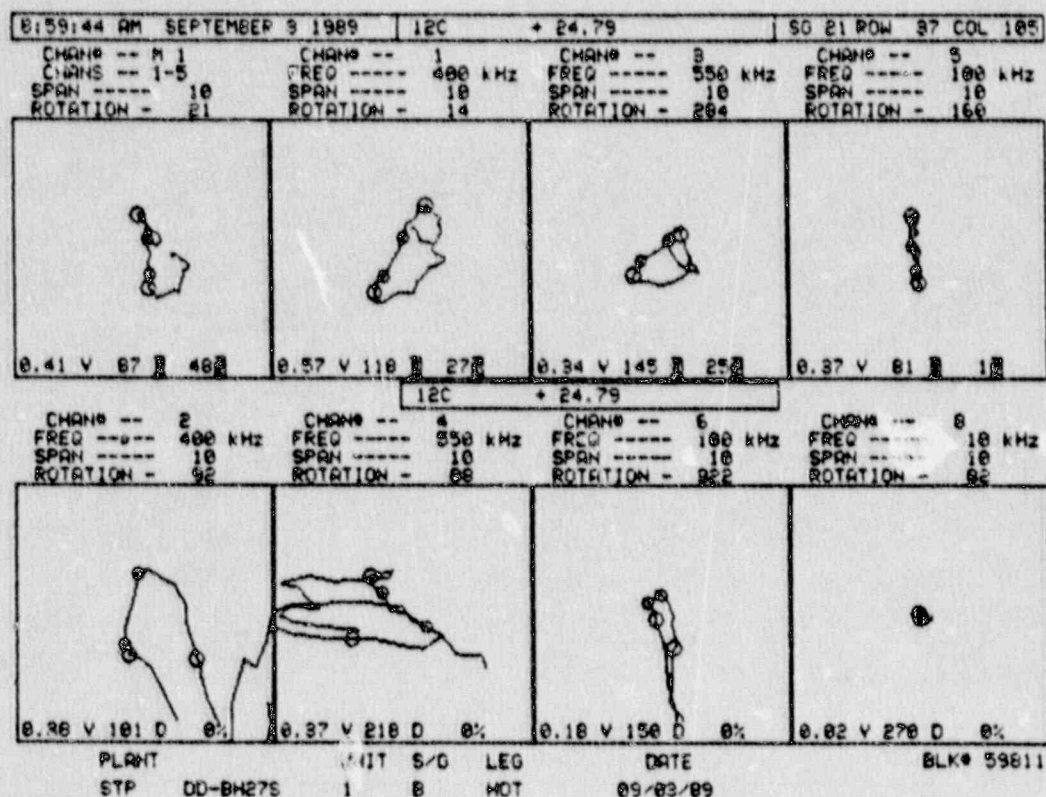
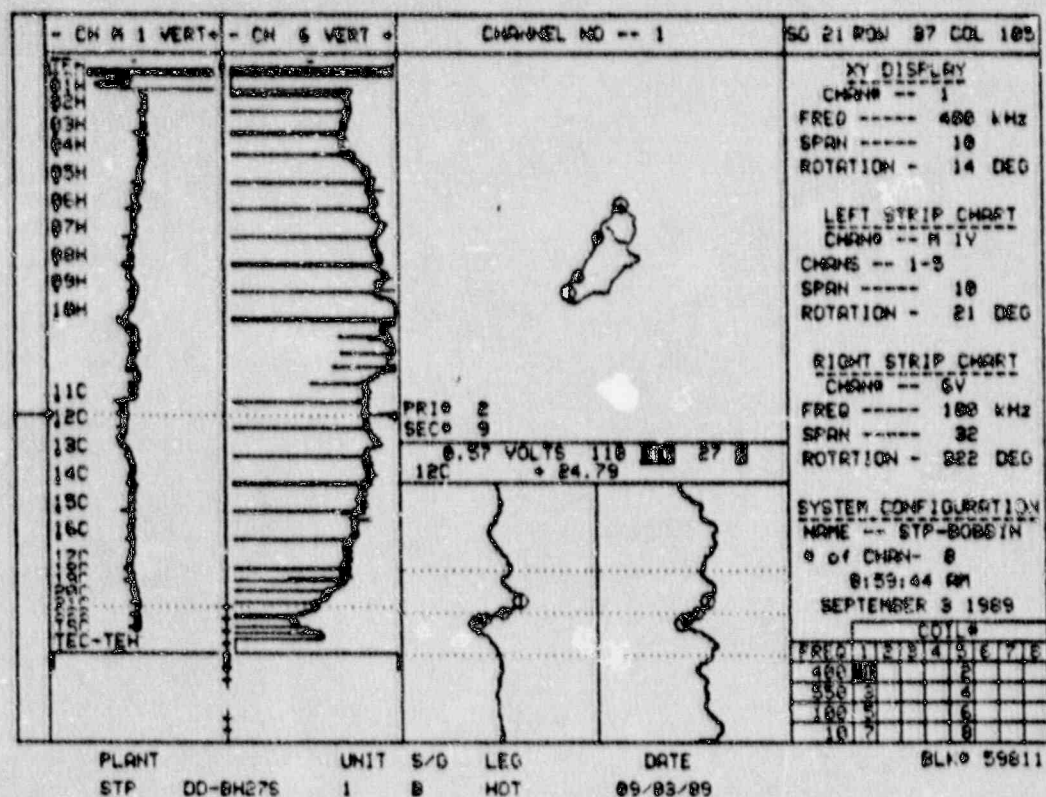
APPENDIX 3-B

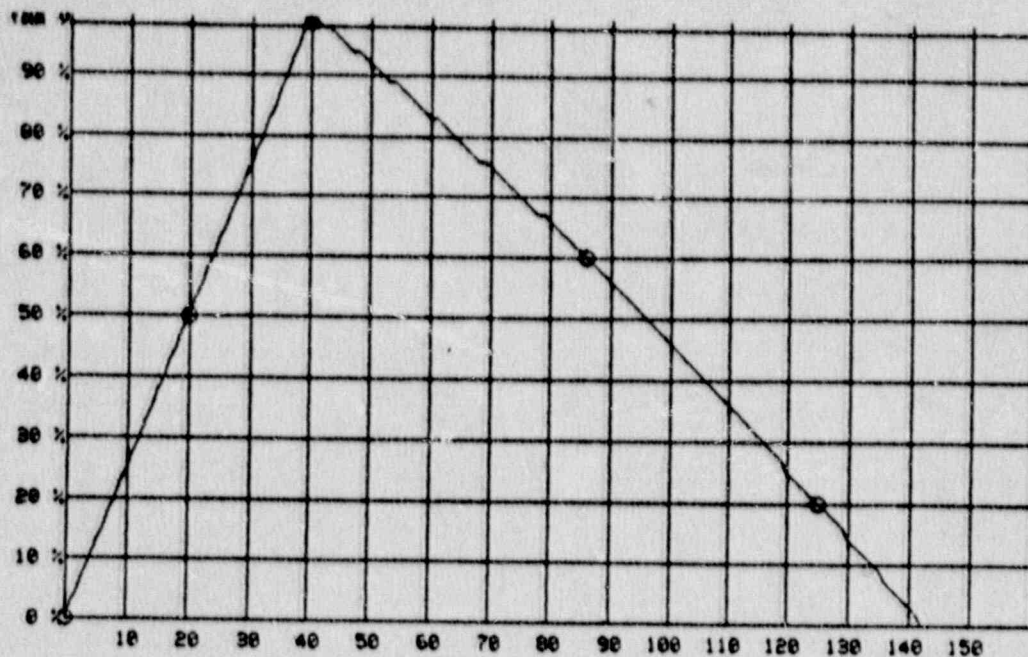
LIST OF EXAMINATION AND DATA ANALYSIS PERSONNEL

<u>NAME</u>	<u>LEVEL</u>
Atkinson, B	IIA
Barry, D	I
Bipes, T	IIA
Blazejewski, D	II
Burns	I
Callan, C	I
Circosta, S	IIA
Crick, D	I-Trainee
Despoux, C	II
Ericson, E	IIA
Faux, J	I
Folsom, D	IIA
Glenn, J	I-Trainee
Irwin, W	II
Jacobs, J	IIA
Kemp, L	II
Kester, L	IIA
Lloyd, M	I
Lynch, D	IIA
Norman, J	I-Trainee
Osterlitz	I
Palmer, T	I
Pascucci, A	IIA
Shock, S	I
Shutes, R	II
Southerland, T	I
Steagall, J	I
Tierney, M	IIA
Tobin, R	II
Weber, D	III
Wheeler, C	IIA
Witt, R	II
Zerkelback, J	I-Trainee

APPENDIX 3-C

**OSCILLOGRAPHS AND SYSTEM RESPONSE CURVES FOR
FLAWS GREATER THAN 20 PERCENT**





% THROUGH WALL VS. PHASE ANGLE (DEGREES)

CHANNEL # 1

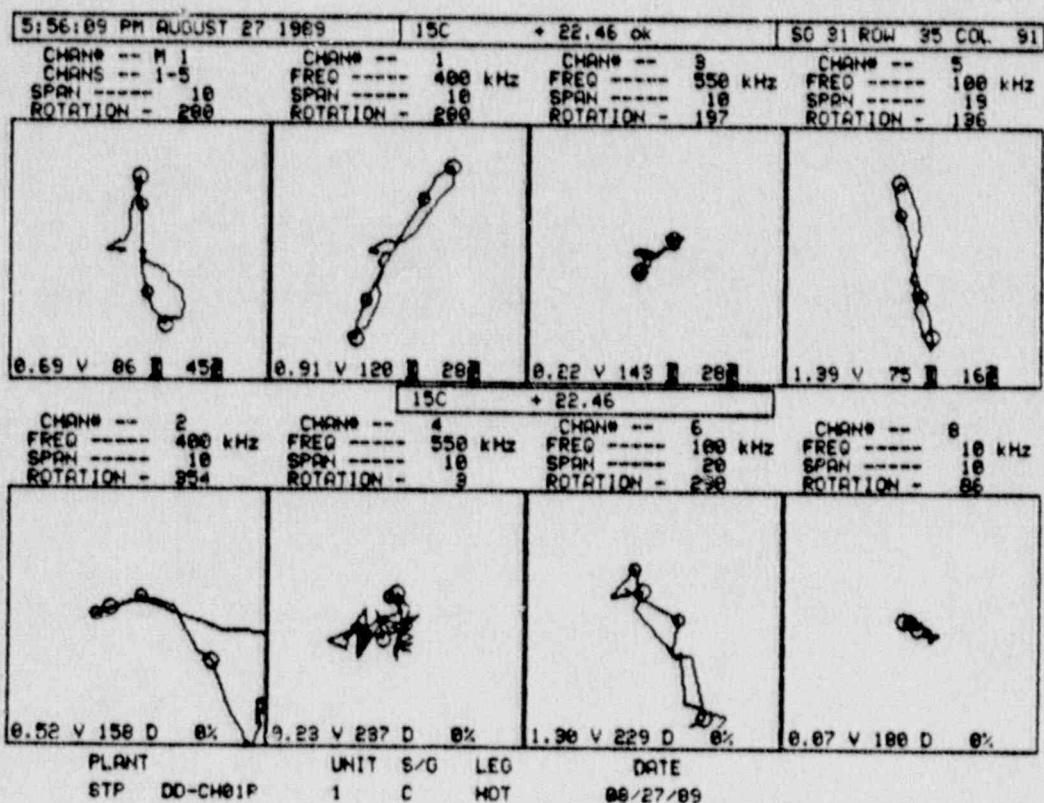
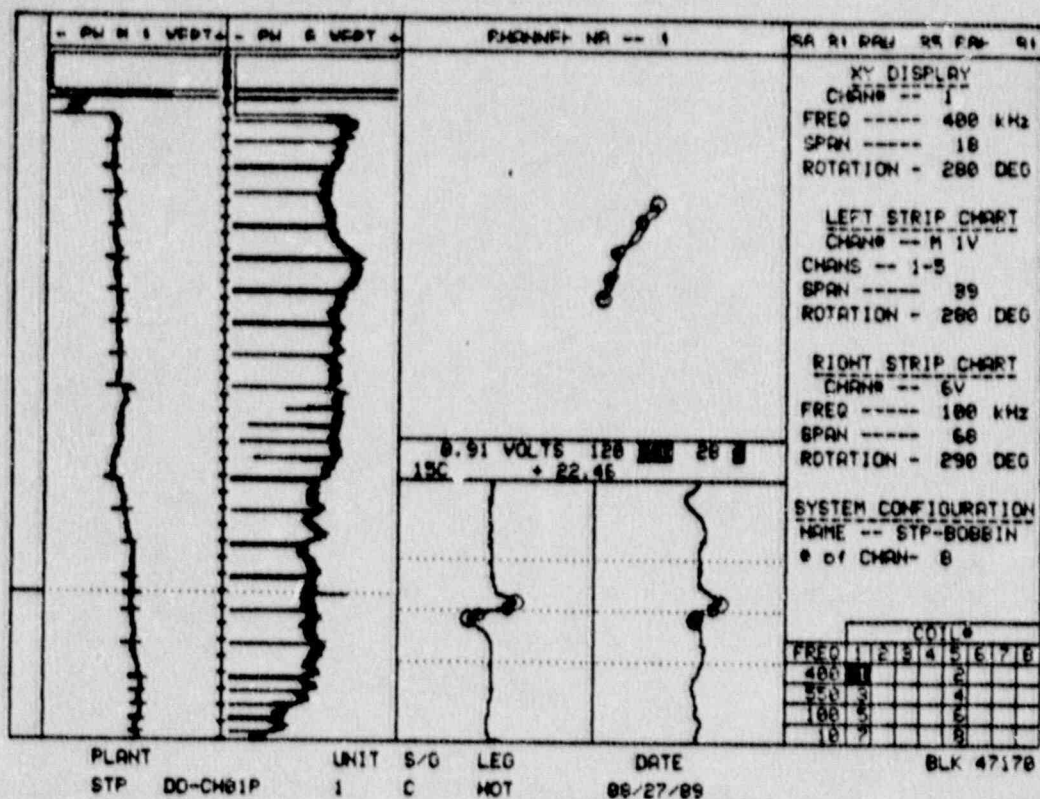
PLANT UNIT S/O LEG DATE
STP DD-BH27S 1 B HOT 09/03/89

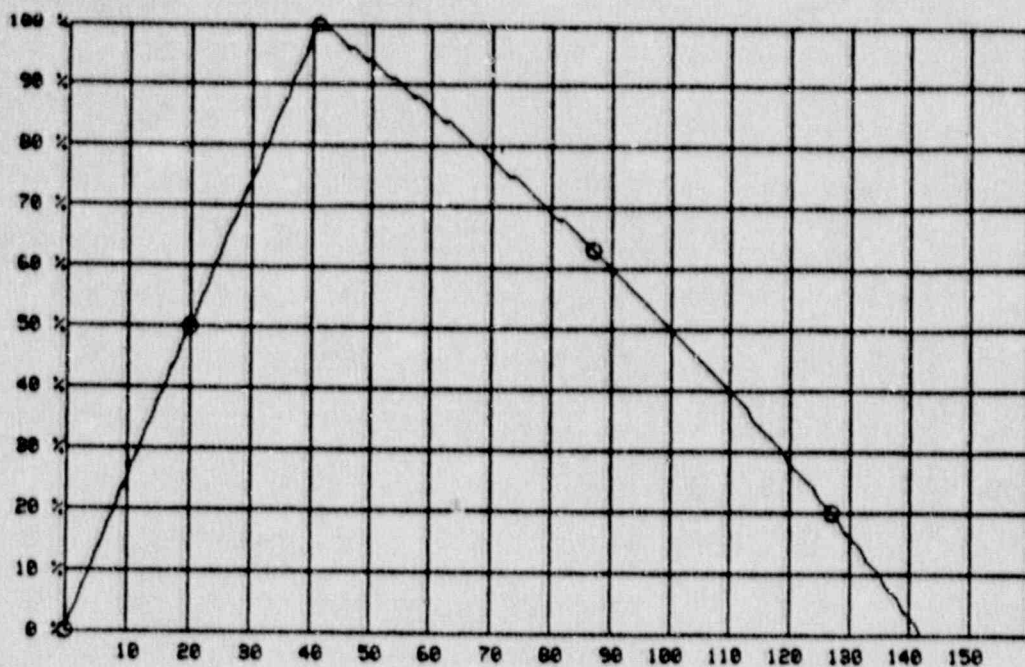
DEG	%
40	100
60	85
80	70
100	55
120	40
140	25

DEG--% DEG--% DEG--% DEG--% DEG--% DEG--% DEG--% DEG--% DEG--%

0-0	20-50	40-99	60-83	80-66	100-46	120-25	140-3	160-0
1-3	21-53	41-99	61-83	81-65	101-45	121-24	141-2	161-0
2-5	22-55	42-98	62-82	82-64	102-44	122-23	142-0	162-0
3-8	23-58	43-98	63-81	83-63	103-43	123-22	143-0	163-0
4-10	24-60	44-97	64-80	84-62	104-42	124-21	144-0	164-0
5-13	25-63	45-96	65-79	85-61	105-41	125-20	145-0	165-0
6-15	26-65	46-95	66-78	86-60	106-40	126-19	146-0	166-0
7-18	27-68	47-94	67-77	87-59	107-39	127-18	147-0	167-0
8-20	28-70	48-94	68-76	88-58	108-38	128-17	148-0	168-0
9-23	29-73	49-93	69-76	89-57	109-37	129-16	149-0	169-0
10-25	30-75	50-92	70-75	90-56	110-36	130-14	150-0	170-0
11-28	31-78	51-91	71-74	91-55	111-35	131-13	151-0	171-0
12-30	32-80	52-90	72-73	92-54	112-34	132-12	152-0	172-0
13-33	33-83	53-89	73-72	93-53	113-33	133-11	153-0	173-0
14-35	34-85	54-89	74-71	94-52	114-32	134-10	154-0	174-0
15-38	35-88	55-88	75-70	95-51	115-31	135-9	155-0	175-0
16-40	36-90	56-87	76-69	96-50	116-30	136-7	156-0	176-0
17-43	37-93	57-86	77-68	97-49	117-29	137-6	157-0	177-0
18-45	38-95	58-85	78-67	98-48	118-28	138-5	158-0	178-0
19-48	39-98	59-84	79-67	99-47	119-27	139-4	159-0	179-0

P. ANT UNIT S/O LEG DATE
STP DD-BH27S 1 B HOT 09/03/89





CHANNEL # 1
 PLANT STP DD-CH01P UNIT 1 S/G C LEG HOT DATE 08/27/89
 DEG %
 41 100
 87 63
 127 20
 0 0
 20 50

DEG--%	DEG--%	DEG--%	DEG--%	DEG--%	DEG--%	DEG--%	DEG--%	DEG--%
0- 0	20-50	40-98	60-86	80-69	100-50	120-28	140- 8	160- 0
1- 3	21-52	41-99	61-85	81-68	101-49	121-27	141- 2	161- 0
2- 5	22-55	42-99	62-84	82-66	102-48	122-26	142- 0	162- 0
3- 8	23-57	43-99	63-84	83-67	103-47	123-25	143- 0	163- 0
4-10	24-60	44-98	64-83	84-66	104-46	124-24	144- 0	164- 0
5-13	25-62	45-97	65-82	85-65	105-45	125-22	145- 0	165- 0
6-15	26-65	46-96	66-81	86-64	106-44	126-21	146- 0	166- 0
7-18	27-67	47-96	67-80	87-63	107-43	127-20	147- 0	167- 0
8-20	28-69	48-95	68-80	88-62	108-42	128-19	148- 0	168- 0
9-23	29-72	49-94	69-79	89-61	109-41	129-17	149- 0	169- 0
10-25	30-74	50-94	70-78	90-60	110-40	130-16	150- 0	170- 0
11-28	31-76	51-93	71-77	91-59	111-39	131-15	151- 0	171- 0
12-30	32-79	52-92	72-76	92-58	112-38	132-14	152- 0	172- 0
13-33	33-81	53-91	73-75	93-57	113-37	133-12	153- 0	173- 0
14-35	34-84	54-91	74-75	94-56	114-35	134-11	154- 0	174- 0
15-38	35-86	55-90	75-74	95-55	115-34	135-10	155- 0	175- 0
16-40	36-88	56-89	76-73	96-54	116-33	136- 8	156- 0	176- 0
17-43	37-91	57-88	77-72	97-53	117-32	137- 7	157- 0	177- 0
18-45	38-93	58-88	78-71	98-52	118-31	138- 6	158- 0	178- 0
19-48	39-95	59-87	79-70	99-51	119-30	139- 4	159- 0	179- 0

PLANT STP DD-CH01P UNIT 1 S/G C LEG HOT DATE 08/27/89

APPENDIX 3-D

FLAWS WITH TUBE WALL THICKNESS REDUCTION

APPENDIX 3-D

FLAWS WITH TUBE WALL THICKNESS REDUCTION

<u>S.G.</u>	<u>Row/Col</u>	<u>Reel</u>	<u>Ind. Desig.</u>	<u>%TWD</u>	<u>Ind. Location</u>	<u>Tested Extent</u>
A	35 80	AH12	1	14	09H+5.0	TEC-TEH
B	6 21	BH21	1	12	AV1+2.9	TEC-TEH
B	30 21	BH22	1	12	03H+38.5	TEC-TEH
B	30 89	BH18	1	18	05H+22.7	TEC-TEH
B	37 105	BH27	1	27	12C+24.8	TEC-TEH
C	16 58	CH36	1	5	02H+17.7	TEC-TEH
C	35 91	CH01	1	28	15C+22.5	TEC-TEH
C	36 104	CH07	1	13	05H+11.3	TEC-TEH
C	45 82	CH33	1	12	18C+14.7	TEC-TEH
C	45 88	CH09	1	19	03H+9.3	TEC-TEH
D	20 54	DH08	1	11	12C+39.0	TEC-TEH

APPENDIX 3-E
DINGS AND DENTS

APPENDIX 3-E
DINGS AND DENTS

<u>Section</u>	<u>Content</u>
1.	Steam Generator A
2.	Steam Generator B
3.	Steam Generator C
4.	Steam Generator D

DINGS AND DENTS

Steam Generator A

H L & P
South TX Unit 1
COMPONENT: SG/A
OUTAGE: 8908

Date: 09/05/89
Page: 1

ALL DENT INDICATIONS

Row/Col	Reel	Volts	CH	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
14	64	AH30	6.0	2 DNT		13C 25.5	A610SFRM	TEC-TEH
14	74	AH10	9.9	2 DNT		04H 0.8	A610SFRM	TEC-TEH
22	116	AH22	11.1	2 DNT		08H 0.6	A610SFRM	TEC-TEH
35	76	AH30	5.4	2 DNT		03H 17.1	A610SFRM	TEC-TEH
46	91	AH09	6.3	2 DNT		09H 34.7	A610SFRM	TEC-TEH

Number of Tubes: 5
Number of Indications: 5

DINGS AND DENTS

Steam Generator B

H L & P
South Tx Unit 1
COMPONENT: SG/B
OUTAGE: 8908

Date: 09/05/89
Page: 1

ALL DENT INDICATIONS

Row/Col	Reel	Volts	CH	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
10	100 BH15	6.1	1	DNT		10H 42.8	A610SFRMHF	TEC-TEH
11	18 BH20	11.4	2	DNT		10H 2.9	A610SFRMHF	TEC-TEH
11	22 BH21	44.0	2	DNT		10H 0.0	A610SFRMHF	TEC-TEH
11	22 BH21	64.2	2	DNT		11C 0.0	A610SFRMHF	TEC-TEH
12	118 BH14	5.2	2	DNT		12C 26.1	A610SFRM	TEC-TEH
32	18 BH22	9.0	2	DNT		09H 18.0	A610SFRMHF	TEC-TEH
37	68 BH28	5.9	2	DNT		22C 2.4	A610SFRMHF	TEC-TEH
40	48 BH26	6.7	2	DNT		20C 6.3	A610SFRMHF	TEC-TEH
44	70 BH28	7.3	2	DNT		18C 4.8	A610SFRMHF	TEC-TEH
46	97 BH16	11.7	2	DNT		09H 0.6	A610SFRMHF	TEC-TEH
46	97 BH16	7.6	2	DNT		08H 43.9	A610SFRMHF	TEC-TEH
47	50 BH26	6.9	2	DNT		01H 11.3	A610SFRMHF	TEC-TEH
47	50 BH26	7.3	2	DNT		01H 10.7	A610SFRMHF	TEC-TEH

Number of Tubes: 10
Number of Indications: 13

DINGS AND DENTS

Steam Generator C

M L & P
 South Tx Unit 1
 COMPONENT: SG/C
 OUTAGE: 8908

Date: 09/05/89
 Page: 1

ALL DENT INDICATIONS

Row/Col	Reel	Volts	CH	Ind. Desc.	Indication Location	Probe	Extent Tested
14	62 CH36	7.4	2	DNT	AV1 10.8	A610SFRMHF	TEC-TEH
20	59 CH03	14.5	2	DNT	09H 43.0	A610SFRM	TEC-TEH
24	29 CH03	6.6	2	DNT	AV1 13.8	A610SFRM	TEC-TEH
33	37 CH20	5.7	2	DNT	02H 9.9	A610SFRM	TEC-TEH
33	37 CH20	7.0	2	DNT	02H 10.7	A610SFRM	TEC-TEH
36	23 CH38	5.8	2	DNT	08H 13.0	A590SFRM	TEC-TEH
36	23 CH19	6.1	2	DNT	08H 13.1	A610SFRM	TEC-TEH
39	88 CH09	5.5	2	DNT	17C 40.7	A610SFRM	TEC-TEH
42	19 CH19	46.3	2	DNT	05H 1.2	A610SFRM	TEC-TEH
42	102 CH08	42.9	2	DNT	15C 0.0	A610SFRM	TEC-TEH
44	22 CH19	6.1	2	DNT	16C 34.2	A610SFRM	TEC-TEH
44	22 CH19	15.1	2	DNT	06H 41.4	A610SFRM	TEC-TEH

Number of Tubes: 9
 Number of Indications: 12

DINGS AND DENTS

Steam Generator D

H L & P
 South Tx Unit 1
 COMPONENT: SG/D
 OUTAGE: 8908

Date: 09/06/89
 Page: 1

ALL DENT INDICATIONS:

Row/Col	Reel	Volts	CH	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
4	80	DH31	5.5	2 DNT		10H 13.8	A610MULCHF	TEC-TEH
7	37	DH28	10.3	2 DNT		22C 8.2	A610MULCHF	TEC-TEH
12	9	DH09	18.5	2 DNT		13C 14.9	A610SFRM	TEC-TEH
12	64	DH32	12.9	2 DNT		11C 3.5	A610MULCHF	TEC-TEH
14	36	DH09	27.6	2 DNT		11C 2.7	A610SFRM	TEC-TEH
28	22	DH22	8.1	2 DNT		17C 11.4	A610MULCHF	TEC-TEH
35	45	DH38	5.3	2 DNT		16C 42.1	A610MULCHF	TEC-TEH
37	19	DH22	6.7	2 DNT		06H 28.1	A610MULCHF	TEC-TEH
38	96	DH16	7.6	2 DNT		18C 0.8	A610MULCHF	TEC-TEH
40	87	DH17	7.5	2 DNT		12C 5.0	A610MULCHF	TEC-TEH
40	87	DH17	7.1	2 DNT		TSH 2.5	A610MULCHF	TEC-TEH
42	34	DH27	5.6	2 DNT		09H 40.3	A610MULCHF	TEC-TEH
42	78	DH29	7.4	2 DNT		02H 11.6	A610MULCHF	TEC-TEH
44	36	DH27	9.4	2 DNT		10H 16.9	A610MULCHF	TEC-TEH
44	51	DH38	8.5	2 DNT		TSC 7.9	A610MULCHF	TEC-TEH
48	27	DH27	9.4	2 DNT		AV2 0.7	A610MULCHF	TEC-TEH
48	88	DH17	8.3	2 DNT		10H 42.1	A610MULCHF	TEC-TEH

H L & P
South Tx Unit 1
COMPONENT: SG/D
OUTAGE: 8908

Date: 09/06/89
Page: 2

ALL DENT INDICATIONS

Row/Col	Reel	Volts	CH	Ind.	%TWD	Indication	Probe	Extent
				Desc.		Location		Tested

Number of Tubes: 16
Number of Indications: 17

APPENDIX 3-F

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

14

(Name and Address of Owner)

(Name and Address of Plant)

N. A.

N. A.

[illegible]

FORM NIS-1 (Back)

8. Examination Dates 8-27-89 to 9-5-89 9. Inspection Interval from 8-25-88 to 8-25-98
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.
See Section 3.4.1 of the Summary Report
11. Abstract of Conditions Noted
See Section 3.5 of the Summary Report
12. Abstract of Corrective Measures Recommended and Taken
See Section 3.5 of the Summary Report

We certify that the statements made in this report are correct and the examinations and 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.
Houston Lighting &
Date Jan. 4 19 90 Signed Power Co. By Andrew G. Beverly
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 or Province of Texas and employed by Lumbermens Mutual Casualty
Long Grove, Ill. have inspected the components described in this Owner's Report during the period
7-30-89 to 1-4-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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.

B. R. Russell Commissions Texas 826
Inspector's Signature National Board, State, Province, and Endorsements
Date 1-4- 19 90

4.0 COMPONENT SUPPORT EXAMINATIONS

4.1 Introduction

ISI examinations of Class 1, 2, and 3 component supports of STPEGS-1 were performed during the time period between July 15, 1989 and September 8, 1989. Most of these examinations were performed during the 1RE01 refueling outage. These examinations constitute the first ISI of the first inspection interval for the Component Supports Examination Program. ISI examinations of component supports were conducted in accordance with the STPEGS-1 Ten Year ISI Plan, including HL&P specification 5U035JS003, "Inservice Inspection Examination of Component Supports of South Texas Project Electric Generating Unit 1 First Inspection Interval".

4.2 Scope of Examinations

A total of forty-three (43) component supports were visually examined just prior to or during 1RE01. These supports, selected from the Component Supports ISI Examination Plan (5U035JS0003), constitute approximately eight (8) percent of the total piping and equipment supports required to be examined during the first inspection interval. A listing of the supports examined just prior to or during 1RE01 is contained in Appendix 4-A.

4.2.1 Class 1 Components

One (1) Class 1 equipment support (Pressurized base) was examined and six (6) Class 1 piping supports were examined in the following systems:

Chemical and Volume Control (CV)...	2
Reactor Coolant (RC)	4

4.2.2 Class 2 Components

Seven (7) Class 2 equipment supports (Excess Letdown, Letdown, and Regenerative Heat Exchangers) were examined and fourteen (14) Class 2 piping supports were examined in the following systems:

Auxiliary Feedwater (AF)	1
Containment Spray (CS)	1
Feedwater (FW)	1
Main Steam (MS)	1
Residual Heat Removal (RH)	4
Safety Injection (SI)	6

4.2.3 Class 3 Components

One (1) Class 3 equipment support (Diesel Generator Starting Air tank #11) was examined and fourteen (14) Class 3 piping supports were examined in the following systems:

Auxiliary Feedwater (AF).....	4
Component Cooling (CC).....	8
Essential Cooling Water (EW).....	2

4.3 Personnel and Procedures

4.3.1 Personnel Qualifications

Component supports were visually examined (VT-3 and VT-4) by HL&P Quality Control (QC) personnel certified in accordance with ASME Section XI (IWA-2300) and HL&P Operations Engineering Procedure OEP-9.04Q, "Personnel Certification Procedure for Visual Examination per ASME B&PV Code, Section XI" (Rev. 2). A listing of the personnel who performed visual examinations of component supports, including their certification level, is included in Appendix 4-B.

4.3.2 Examination Procedure

Visual (VT-3 and VT-4) examinations of component supports was performed in accordance with OEP-9.07Q, "Inservice Inspection - Visual Examination of Component Supports" (Rev.0).

4.4 Summary of Examinations

4.4.1 Piping Supports

Thirty four (34) piping supports were examined just prior to or during 1RE01, distributed among ten (10) piping systems as shown in Appendix 4-A. These examinations were conducted on rigid restraints (18), guides (9), and spring hangers (7).

4.4.2 Equipment Supports

Nine (9) equipment supports were examined just prior to or during 1RE01, distributed among three (3) systems and five (5) components as shown in Appendix 4-A.

4.4.3 Additional and Successive Examinations

The results of the visual examinations of component supports performed up through 1RE01 did not require that any additional examinations (IWF-2430) be performed. One Class 3 pipe support (AF-1079-HL5005) will be scheduled for successive examination during the second inspection period to verify the continuing integrity of this support.

4.5 Examination Results and Corrective Actions

One (1) Class 1 pipe support in the RC system (RC-1003-HL5001) was found to have a loosened jam nut. This was reported on NCR No. 89-1-223 and the nut was tightened. Two (2) Class 2 equipment supports of the Regenerative Heat Exchanger (CV-RHX2 and CV-RHX3) were found to have relevant conditions which were previously detected and resolved as acceptable during the PSI examinations. One (1) Class 3 pipe guide in the AF system (AF-1079-HL5005) was found to have zero clearance on both sides of a strap. This condition was reported on NCR No. 89-1-148 and the NCR was dispositioned as "Use-as-is". Two (2) pipe guides in the EW system (EW-1101-HL5001 and EW-1101-HL5002) were found to be corroded in the area of the floor embed plates. The support was verified as acceptable and a work request (WR81508) was written to have the affected support areas recoated for corrosion protection.

4.6 Certification of Inspections

Section XI NIS-1 forms, "Owner's Report for Inservice Inspections", have been prepared to certify the STPEGS-1 component support ISI examinations described in this section of the Summary Report. The STPEGS-1 component support ISI examinations have been certified by our ANII, Lumbermens Mutual Casualty Company, on the NIS-1 forms included in Appendix 4-C.

APPENDIX 4-A

ISI EXAMINATIONS OF COMPONENT SUPPORTS

APPENDIX 4-A

ISI EXAMINATIONS OF COMPONENT SUPPORTS

<u>SYSTEM</u>	<u>CLASS</u>	<u>PIPE/ EQUIP</u>	<u>TYPE*</u>	<u>MARK NO.</u>	<u>EXAM COMP'N.</u>	<u>REMARKS</u>
RC	1	EQ	EQ	RC-PRB1	8/17/89	PZR Base Support
CV	1	Pipe	GD	CV-1121-HS5001	8/17/89	
CV	1	Pipe	SH	CV-1121-HS5002	8/23/89	
RC	1	Pipe	RR	RC-1003-HL5001	9/08/89	Tighten Nut Per NCR 89-1-223
RC	1	Pipe	RR	RC-1123-HL5010	8/28/89	
RC	1	Pipe	SH	RC-1126-SH0001	8/28/89	
RC	1	Pipe	RR	RC-1412-HL5004	9/07/89	
CV	2	EQ	EQ	EXHX-1	8/29/89	EXC.LTDN.HX
CV	2	EQ	EQ	EXHX-2	8/28/89	EXC.LTDN.HX
CV	2	EQ	EQ	LDHX-1	8/28/89	LTDN.HX
CV	2	EQ	EQ	LDHX-2	8/28/89	LTDN.HX
CV	2	EQ	EQ	RHX1	8/22/89	REGEN.HX
CV	2	EQ	EQ	RHX2	8/22/89	REGEN.HX-Relv. Cond. Resolved Durin PSI
CV	2	EQ	EQ	RHX3	8/22/89	REGEN.HX-Relv. Cond. Resolved During PSI
AF	2	Pipe	RR	AF-1012-HL5007	8/17/89	
CS	2	Pipe	RR	CS-1301-HL5003	8/07/89	
FW	2	Pipe	SH	FW-1016-HL5013	8/17/89	
MS	2	Pipe	SH	MS-1003-HL5019	8/17/89	
RH	2	Pipe	SH	RH-1204-HL5003	8/14/89	
RH	2	Pipe	RR	RH-1204-HL5012	8/14/89	

APPENDIX 4-A (CONT'D)

ISI EXAMINATIONS OF COMPONENT SUPPORTS

<u>SYSTEM</u>	<u>CLASS</u>	<u>PIPE/ EQUIP</u>	<u>TYPE*</u>	<u>MARK NO.</u>	<u>EXAM COMP'N.</u>	<u>REMARKS</u>
RH	2	Pipe	RR	RH-1204-RR0002	8/11/89	
RH	2	Pipe	RR	RH-1204-RR0003	8/11/89	
SI	2	Pipe	GD	SI-1101-HL5023	8/25/89	
SI	2	Pipe	RR	SI-1101-RH0007	8/25/89	
SI	2	Pipe	RR	SI-1101-RK0023	8/25/89	
SI	2	Pipe	RR	SI-1101-RR0024	8/25/89	
SI	2	Pipe	SH	SI-1101-SH0011	8/25/89	
SI	2	Pipe	GD	SI-1101-SH0013	8/25/89	
DG	3	EQ	EQ	DG-SAT1A	8/23/89	ST. AIR TANK #11
AF	3	Pipe	GD	AF-1079-HL5003	8/07/89	
AF	3	Pipe	GD	AF-1079-HL5004	8/07/89	
AF	3	Pipe	GD	AF-1079-HL5005	8/07/89	Use as is per NCR 89 1-148 Succ. Exam Req'd in Period 2
AF	3	Pipe	GD	AF-1079-HL5006	8/07/89	
CC	3	Pipe	RR	CC-1115-RR0023	8/29/89	
CC	3	Pipe	RR	CC-1115-RR0024	8/29/89	
CC	3	Pipe	RR	CC-1115-RR0025	8/29/89	
CC	3	Pipe	RR	CC-1115-RR0026	8/29/89	
CC	3	Pipe	RR	CC-1116-HL5005	8/29/89	
CC	3	Pipe	RR	CC-1116-HL5006	8/29/89	
CC	3	Pipe	RR	CC-1116-RR0017	8/29/89	
CC	3	Pipe	SH	CC-1117-HL5001	8/29/89	

APPENDIX 4-A (CONT'D)

ISI EXAMINATIONS OF COMPONENT SUPPORTS

<u>SYSTEM</u>	<u>CLASS</u>	<u>PIPE/ EQUIP</u>	<u>TYPE*</u>	<u>MARK NO.</u>	<u>EXAM COMP'N.</u>	<u>REMARKS</u>
EW	3	Pipe	GD	EW-1101-HL5001	8/24/89	Gen. Corr. Addressed on WR81508
EW	3	Pipe	GD	EW-1101-HL5002	8/24/89	Gen. Corr. Addressed on WR81508

*SUPPORT TYPE

EQ = Equipment
 GD = Guide
 RR = Rigid Restraint
 SH = Spring Hanger

APPENDIX 4-B

PERSONNEL PERFORMING VISUAL EXAMINATIONS
OF COMPONENT SUPPORTS

APPENDIX 4-B

PERSONNEL PERFORMING VISUAL EXAMINATIONS
OF COMPONENT SUPPORTS

<u>NAME</u>	<u>LEVEL</u>
Dennis Langston	II
Craig Murrey	II
Charles Sist	II
Mark Stewart	III

APPENDIX 4-C

**OWNER'S REPORT FOR INSERVICE INSPECTIONS
NIS-1 FORMS**

1. 本報告係根據「證券交易法」第36條之規定，由本公司董事會編製，並經會計師查核簽證，其內容如有虛偽、不實或隱匿重要事實，致影響投資者之投資判斷者，本公司董事會將依法負法律上之責任。

- [illegible]

(12/88)

4-11

FORM NIS-1 (Back)

8. Examination Dates 7/15/89 to 9/8/89 9. Inspection Interval from 8-25-88 to 8-25-98
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See Section 4.4 of Summary Report
11. Abstract of Conditions Noted See Section 4.5 of Summary Report
12. Abstract of Corrective Measures Recommended and Taken
See Section 4.5 of Summary Report

We certify that the statements made in this report are correct and the examinations and 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.
Houston Lighting &
Date 1-9 19 90 Signed Power Company By Stanley J. Burch
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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of Long Grove, Ill. have inspected the components described in this Owner's Report during the period 7/15/89 to 9/27/89 and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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 Texas 826
Inspector's Signature National Board, State, Province, and Endorsements
Date 1-11- 19 90

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Houston Lighting & Power Company; P. O. Box 1700; Houston, Texas 77001
(Name and Address of Owner)
2. Plant South Texas Project Electric Generating Station; P. O. Box 289; Wadsworth, Texas 77483
(Name and Address of Plant)
3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N. A.
5. Commercial Service Date 8-25-88 6. National Board Number for Unit N.A.
7. Components Inspected Pipe Supports - ASME Class 2

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.		National Board No.
AF-1012-HL5007	Ebasco (I)	N.A.		N.A.
CS-1301-HL5003	Ebasco (I)	N.A.		N.A.
PW-1016-HL5013	Ebasco (I)	N.A.		N.A.
MS-1003-HL5019	Ebasco (I)	N.A.		N.A.
RH-1204-HL5003	Ebasco (I)	N.A.		N.A.
RH-1204-HL5012	Ebasco (I)	N.A.		N.A.
RH-1204-RR0002	Ebasco (I)	N.A.		N.A.
RH-1204-RR0003	Ebasco (I)	N.A.		N.A.
SI-1101-HL5023	Ebasco (I)	N.A.		N.A.
SI-1101-RH0007	Ebasco (I)	N.A.		N.A.
SI-1101-RR0023	Ebasco (I)	N.A.		N.A.
SI-1101-KR0024	Ebasco (I)	N.A.		N.A.
SI-1101-SH0011	Ebasco (I)	N.A.		N.A.
SI-1101-SH0013	Ebasco (I)	N.A.		N.A.

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this 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 7/15/89 to 9/8/89 9. Inspection Interval from 8-25-88 to 8-25-96
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See Section 4.4 of Summary Report
11. Abstract of Conditions Noted See Section 4.5 of Summary Report
12. Abstract of Corrective Measures Recommended and Taken
See Section 4.5 of Summary Report

We certify that the statements made in this report are correct and the examinations and 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.
1-9 1990 Signed Houston Lighting & Power Company By James E. Gentry
 Date 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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of Long Grove, Ill. have inspected the components described in this Owner's Report during the period 7/15/89 to 9/7/89 and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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.

James E. Gentry Commissions Texas 826
 Inspector's Signature National Board, State, Province, and Endorsements
 Date 1-11-1990

As required by the Provisions of the ASME Code Rules

- 4-15

FORM NIS-1 (Back)

8. Examination Dates 7/15/89 to 9/8/89 9. Inspection Interval from 8-25-88 to 8-25-98
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See Section 4.4 of Summary Report
11. Abstract of Conditions Noted See Section 4.5 of Summary Report
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See Section 4.5 of Summary Report

We certify that the statements made in this report are correct and the examinations and 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.
Houston Lighting &
 Date 1-9 19 90 Signed Power Company By James L. Seely
 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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of Long Grove, Ill. have inspected the components described in this Owner's Report during the period 7/15/89 to 9/8/89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this 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 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.

Inspector's Signature Commissions Texas B26
1-11- 19 90 National Board, State, Province, and Endorsements

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Houston Lighting & Power Company; P. O. Box 1700, Houston, Texas 77001
(Name and Address of Owner)
2. Plant South Texas Project Electric Generating Station; P. O. Box 289, Wadsworth, Texas 77483
(Name and Address of Plant)
3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N. A.
5. Commercial Service Date 8-25-88 6. National Board Number for Unit N.A.
7. Components Inspected Equipment Supports and Pipe Supports - ASME Class 3

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	National Board No.
DG Starting Air Tank #11	(M) Cooper Energy Services	812101	1036
AF-1079-HL5003	Ebasco (I)	N.A.	N.A.
AF-1079-HL5004	Ebasco (I)	N.A.	N.A.
AF-1079-HL5005	Ebasco (I)	N.A.	N.A.
AF-1079-HL5006	Ebasco (I)	N.A.	N.A.
CC-1115-RR0023	Ebasco (I)	N.A.	N.A.
CC-1115-RR0024	Ebasco (I)	N.A.	N.A.
CC-1115-RR0025	Ebasco (I)	N.A.	N.A.
CC-1115-RR0026	Ebasco (I)	N.A.	N.A.
CC-1116-HL5005	Ebasco (I)	N.A.	N.A.
CC-1116-HL5006	Ebasco (I)	N.A.	N.A.
CC-1116-RR0017	Ebasco (I)	N.A.	N.A.
CC-1117-HL5001	Ebasco (I)	N.A.	N.A.
EW-1101-HL5001	Ebasco (I)	N.A.	N.A.
EW-1101-HL5002	Ebasco (I)	N.A.	N.A.

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this 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)

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Certificate of Authorization No. (if applicable) N.A. Expiration Date N.A.
Houston Lighting &
Date 1-9 19 90 Signed Power Company By Charles F. Avery
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 or Province of Texas and employed by Lumbermens Mut. Cas. Co of Long Grove, Ill. have inspected the components described in this Owner's Report during the period 7/15/89 to 9/8/89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the inspection plan and as required by the ASME Code, Section XI.

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[Signature] Commissions Texas 826
Inspector's Signature National Board, State, Province, and Endorsements
Date 1-11- 19 90