PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Red Wing, Minnesota

UNITS 1 AND 2

INSERVICE INSPECTION - EXAMINATION SUMMARY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT - UNIT I
OCTOBER 23 to NOVEMBER 4, 1984
STEAM GENERATOR TUBE - EDDY CURRENT EXAMINATION
INSPECTION PERIOD 3

NORTHERN STATES POWER COMPANY
MINNEAPOLIS, MINNESOTA

REPORT DATE: January 8, 1985

COMMERCIAL SERVICE
DATE: DECEMBER 16, 1973

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INSERVICE INSPECTION - EXAMINATION SUMMARY

FOR THE

PRAIRIE ISLAND NUCLEAR GENERATING PLANT - UNIT I

OCTOBER 23 to NOVEMBER 4, 1984

INSPECTION PERIOD 3

STEAM GENERATOR TUBE - EDDY CURRENT EXAMINATION

Commerical Service
Date: 12-16-73

Prepared by: M [illegible]. Anderson
M&SP Engineer

L. Dahlman
M&SP Specialist

Report Date: 1-8-85

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G Krause, Supt.
Materials&Spec.Pr.

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D Youngdahl,
Manager
Prod.Plant Maint.

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT - UNIT I

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INSERVICE INSPECTION EXAMINATION SUMMARY
FOR THE
PRAIRIE ISLAND NUCLEAR GENERATING PLANT
UNIT I
OCTOBER 23 to NOVEMBER 4, 1984

1.0 Introduction

This report is a summary of the steam generator tube eddy current examinations performed on steam generators No. 11 and 12 at Prairie Island-Unit I. The examinations were performed during the period from October 23 through November 4, 1984 after tube leakage was detected via secondary side chemical analysis. Prairie Island-Unit I began commercial operation on December 16, 1973.

2.0 Summary

On October 21, 1984, Prairie Island Unit 1 began shutting down due to primary-to-secondary steam generator tube leakage of approximately 0.33 gpm which escalated to approximately 0.65 gpm before hot shut-down conditions were achieved. (Technical Specifications of 1.0 gpm were not exceeded.) Westinghouse was mobilized to provide necessary eddy current examinations and tube plugging services. What follows is a synopsis of the relevant events which occurred during the brief outage period defined previously.

Primary man-ways were removed on October 23, 1984, and visual inspections of both hot and cold leg tubesheets were performed in steam generators #11 and #12 with secondary side hydrostatic pressures exceeding 600 psi. A small leak (approximately one drop per second) was observed in the cold leg of steam generator #11 (row 25, column 87). No visible leakage was observed in steam generator #12 at this time.

Multifrequency eddy current examinations were performed in steam generator #11 on row 25, column 87, and approximately 25 surrounding tubes. These examinations were conducted for the full length of each tube with standard Zetec MIZ-12 Data Acquisition equipment. The analysis of this data showed that the defect in tube #R25 C87 was located at the seventh tube support plate, cold leg. Analysis of the data for the surrounding tubes indicated that, while some tube degradation at locations other than the seventh tube support plate were observed, no other defective tubing in this sample was evident.

On October 24, 1984, a second tubesheet visual inspection was conducted on steam generator #12 while under secondary atmospheric head pressure only and an extremely small leak (approximately one drop every three minutes) was observed in the hot leg, row 17, column 42. An eddy current examination was performed on this tube and the defective area was determined to be in the hot leg tubesheet region (beginning at the top of the roll transition extending to approximately 15 inches above the tube end). This defective area exhibited multiple, discrete tube wall penetrations exceeding the technical specifications plugging limit.

The following tubes were mechanically plugged based on visual leakage and/or eddy current examinations:

S/G-#11	Location of Defect
R25 C87	#7 Tube Support Plate - Cold Leg
R7 C94	Tubesheet - Cold Leg (Previous Committment)*

S/G-#12	Location of Defect
R17 C42	Tubesheet - Hot Leg
R13 C15	Tubesheet - Hot Leg (Previous Committment)*
R6 C93	Tubesheet - Cold Leg (Previous Committment)*

*Note: See Attachment #1 for details of this committment.

After Unit 1 returned to power, on October 28, 1984, another tube leak was detected by plant chemistry personnel in steam generator #12. Before the plant could get shut-down this leak had grown to approximately 3.5 gpm. Steam generator #11 exhibited minimum leakage per plant chemistry, therefore a Technical Specification, C-1 type sampling program was devised for steam generator #12 only. This sample included all tubes with previously reported tube wall degradations (20%),plus approximately 300 tubes in the region of the tube bundle where tube wall degradations were historically prevalent. Westinghouse performed the ET inspection of this sample which consisted of full length tube examinations utilizing standard Zetec MIZ-12 Data Acquisition equipment. The data analysis was performed by Conam Inspection using Zetec digital analysis (DDA-4) equipment.

On October 31, 1984, a visual inspection of the hot and cold leg tubesheets were performed on S/G #12 and a relatively large leak was evident (small continuous stream) in the hot leg, row 18, column 45. This tube was eddy current examined and the results exhibited a defective area of approximately ten inches in length, starting at about six inches above the tube end and extending to about sixteen inches above the tube end, hot leg (tubesheet crevice region). Again, this area consisted of multiple, large tube wall penetrations with the largest observed at approximately ten inches above the tube end.

When this information became available, NSP initiated an inspection which consisted of the hot leg tubesheet region up to the first tube support plate for approximately 100% of all S/G #12 tubing (26 tubes were not inspected; these tubes were inaccessible due to positioning fixture and template plugs). These examinations were performed in addition to the C-1 sampling which was previously discussed. Also, a special larger diameter (0.740 inch) probe was used in the tubesheet region examinations which improved sensitivity by minimizing probe wobble. The tubesheet region inspection resulted in the detection of one (1) additional tube (row 9, column 26) which exhibited an indication located just above the roll transition area (approximately 4.8 inches from tube end), hot leg. Although this indication was of a very small amplitude (1.36 volts), its phase suggested it to be in excess of the plugging limit (50% tube wall penetration) and was consequently plugged.

The following tubes in S/G #12 were mechanically plugged based on visual leakage, eddy current examinations, or for preventative measures:

Tube Number	Defect Location/Severity	Comments
R18 C45	Tubesheet - Hot Leg/100%	Observed Leak Visually
R9 C26	Tubesheet - Hot Leg/92%	
R37 C75	First Tube Support Plate - Cold Leg/46%	Preventative
R34 C78	First Tube Support Plate - Cold Leg/42%	Preventative

Prairie Island - Unit I is scheduled for its ninth refueling outage to tentatively begin on January 5, 1985. During this time NSP will conduct eddy current examinations on 100% of the tubing in steam generators No. 11 & 12. In addition to full-length tube examinations, an extensive investigation of the tubing in the hot-leg (inlet), tubesheet crevice region for both generators shall be performed.

3.0 Examination Method

As previously stated, Westinghouse was contracted to perform the eddy current examinations utilizing a Zetec MIZ-12 data acquisition system. This system provides multi-frequency capabilities for use in determining tube integrity. The frequencies utilized for each examination were 400 KHz and 100 KHz in the differential mode, with 210 KHz and 100 KHz in the absolute mode.

Analysts from Zetec and Conam were utilized to evaluate the examination data. All data was subjected to 100% re-evaluation (2nd level review) before the final results were tabulated. Analysis was performed using digital evaluation equipment (DDA-4) which provides an increase in analytical capability.

4.0 Equipment and Materials

All equipment used in the examinations are listed by either serial number or type, as applicable, along with their respective calibration dates in Table III of Appendix A.

5.0 Personnel

Northern States Power Company contracted Westinghouse to perform the examinations, with Zetec and Conam providing technical/analytical support. Hartford Steam Boiler Inspection and Insurance Company, representing ANI, provided the Authorized Inspection.

All personnel involved in the performance or evaluation of examinations are listed, along with their title, organization and ASNT certification level, in Table I of Appendix A. Certification for examination personnel are maintained on File by Northern States Power Company.

6.0 Examination Results

A summary of the tubes exhibiting eddy current indications is included in the cummulative listing of indications found in Appendices B and C for steam generators #11 and #12, respectively. The total numbers of tubes plugged to date are also exhibited in these appendices.

APPENDIX A

TABLE I - PERSONNEL
TABLE II - PROCEDURE LISTING
TABLE III - EQUIPMENT AND MATERIALS

NORTHERN STATES POWER COMPANY

APPENDIX A
TABLE I
PAGE 1 of 1

PERSONNEL LISTING

EXAMINER	TITLE	ORGANIZATION	ASNT LEVEL UT	PT	MT	VT	ET	RT
BEHARY, G.T.	TECHNICIAN	W(1)					I	
BURGESS, W.A.	TECHNICIAN	W					II	
JENKINS, G.P.	TECHNICIAN	W					II	
POLLICE, R.A.	COORDINATOR	W					II	
PFARR, T.A.	TECHNICIAN	W					II	
BRONSON, J.I.	TECHNICIAN	W					I	
HAZEN, R.P.	TECHNICIAN	W					II	
HOSELY, R.	COORDINATOR	W					I	
ROSSI, W.	TECHNICIAN	W					I	
TOMMARELLO, D.	TECHNICIAN	W					II	
GILBERT, B.F.	EVALUATOR	ZETEC(2)					IIA	
SIEGEL, J.D.	EVALUATOR	ZETEC					IIA	
CHAMBERS, D.M.	EVALUATOR	CONAM(3)					IIA	
LOFGREN, R.	EVALUATOR	CONAM					IIA	
MARLOW, R.E.	EVALUATOR	CONAM					III	
ANDERSON, M.T.	M&SP ENGINEER	NSP						
DAHLMAN, L.C.	M&SP SPECIALIST	NSP						
HUGHES, R.	ANII	HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO.						

FOOTNOTES: (1) ORGANIZATION

(1) Westinhouse Electric Corporation
Nuclear Services Division
P.O. Box 2728
Pittsburgh, PA 15230

(2) ZETEC
P.O. Box 140
Issaquah, WA 98027

(3) Conam Inspection
660 South 31st Street
Richmond, CA 94804

MTA113084WMH01

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND UNIT II

PROCEDURE LISTING

APPENDIX A

TABLE II

PROCEDURE NUMBER AND REVISION	FIELD CHANGE	PROCEDURE TITLE	PLANT APPROVAL DATE	FIELD CHANGE REMARKS	CHANGE DESCRIPTION
MRS 2.4.2 Gen - 23, Rev. 5 with Generic Change #1	NONE	Multi-Frequency Eddy Current Inspection of Steam Generator Tubing - Preservice and Inservice	10-23-84	NONE	

NORTHERN STATES POWER COMPANY

EQUIPMENT AND MATERIALS

APPENDIX A
TABLE III
PAGE 1 OF 2

MATERIAL OR EQUIPMENT	TYPE OR SERIAL NUMBER	CALIBRATION DATE OR BATCH NUMBER	REMARKS
Brush Recorder(s)	S/N 0533	8-3-84	
	01307	9-10-84	
	01308	9-12-84	
	0644	8-2-84	
	0025	7-5-84	
	30365	9-11-84	
Tape Recorder(s) HP 3968A2	S/N 2105A01653	9-24-84	
	2105A01491	7-11-84	
	00947	6-8-84	
	00946	7-30-84	
	0681	8-3-84	
	30230	7-27-84	
	0999	9-17-84	
	30246	6-8-84	
MIZ-12 Main Frame	S/N 30250	10-21-84	
	0682	5-29-84	
	0557	9-27-84	
Freq. Plug-In	S/N 0561	6-7-84	
	0684	6-1-84	
	0552	6-7-84	
	0558	6-4-84	
	30247	10-22-84	
	0636	6-7-84	
	00890	10-20-84	
	0584	6-4-84	
	0575	9-27-84	
	0568	9-27-84	
	0638	6-26-84	
	0709	9-28-84	
	0923	8-9-84	
	00877	6-19-84	
MIZ-12 Mixer Plug-In	S/N 0579	6-7-84	
	0640	6-4-84	
	0563	6-7-84	
	0571	6-4-84	
	0666	9-26-84	
	01627	9-28-84	
	0562	6-26-84	
	00881	6-21-84	
	0597	9-19-84	
	0598	6-8-84	

NORTHERN STATES POWER COMPANY

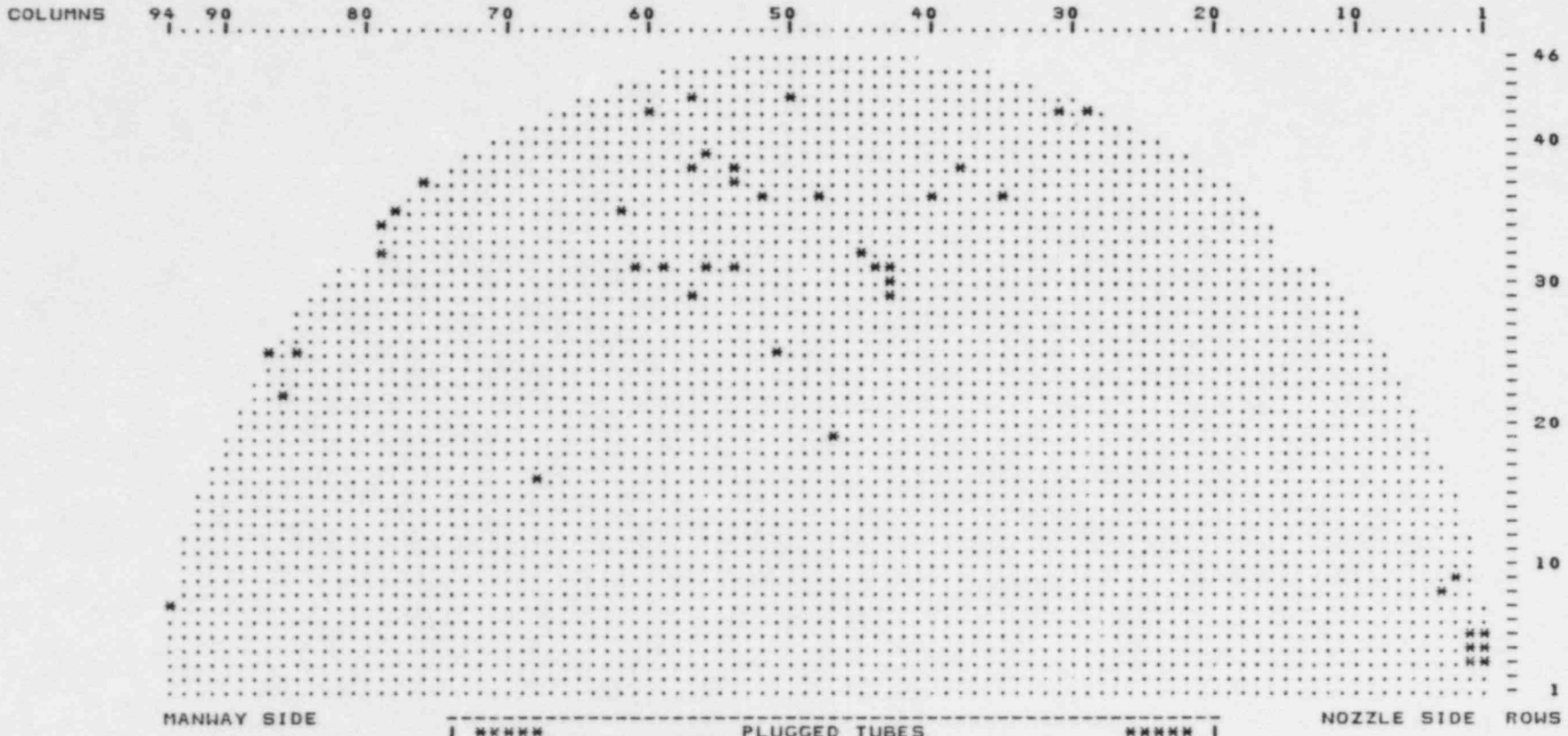
EQUIPMENT AND MATERIALS

MATERIAL OR EQUIPMENT	TYPE OR SERIAL NUMBER	CALIBRATION DATE OR BATCH NUMBER	REMARKS
MIZ-12 Display Module/Scope	S/N 0266	8-6-84	
	0006	6-11-84	
	0698	10-21-84	
	0151	6-14-84	
	0537	9-11-84	
	0268	7-13-84	
	00923	7-13-84	
	30240	8-7-84	
	00918	8-6-84	
	0556	9-25-84	
Vector Analyzer	S/N 00942	7-3-84	
	00938	9-19-84	
Calibration Standards Inconel 600	WEM 02660	AVB Standard	
	Z - 1411	Defect Standard	
	Z - 1341	ABS Standard	
	WEM 02680	AVB Standard	
	Z - 1399	ABS Standard	
	Z - 1429	Defect Standard	

APPENDIX B

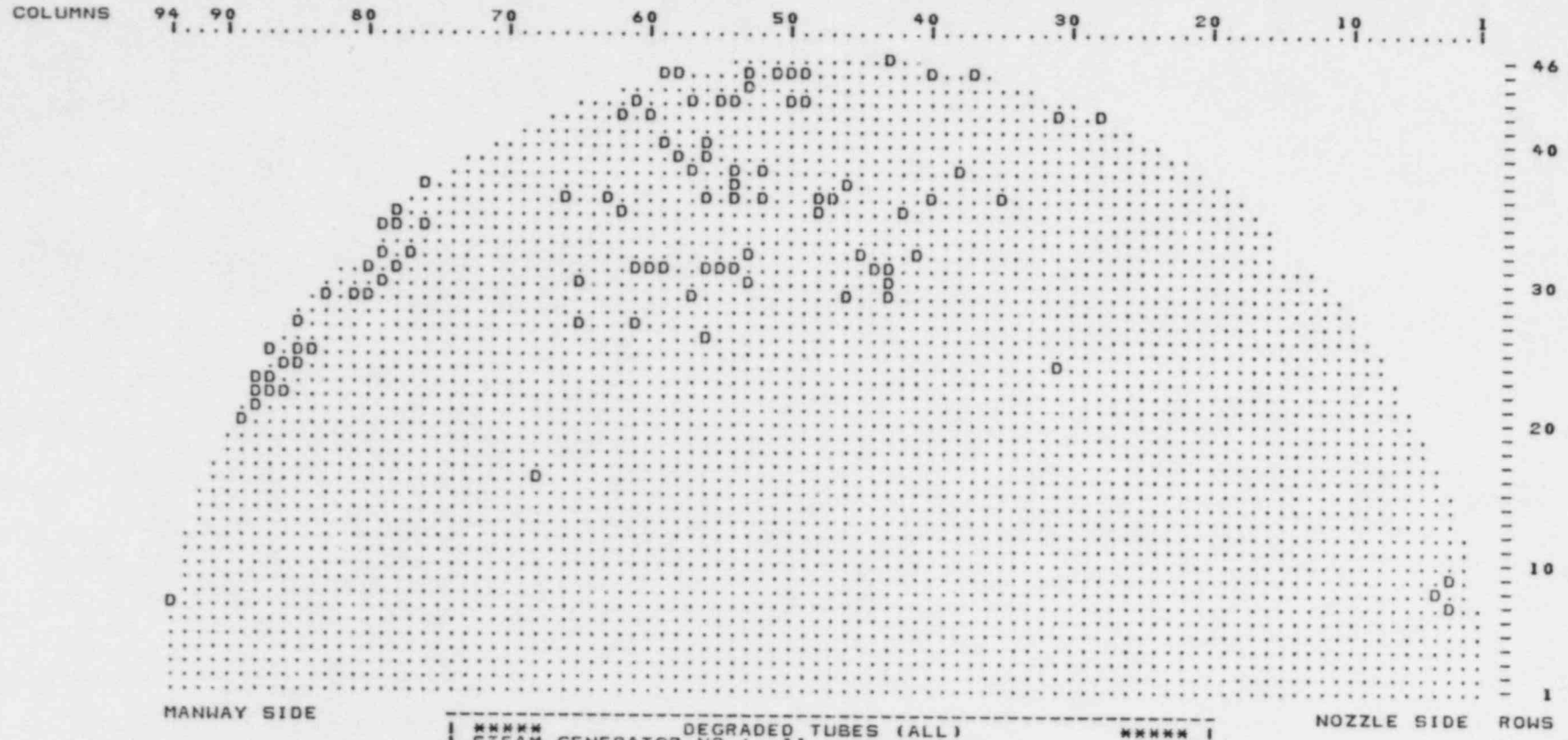
STEAM GENERATOR NO. 11
EDDY CURRENT EXAMINATION RESULTS AND TUBE SHEET MAPS

NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51



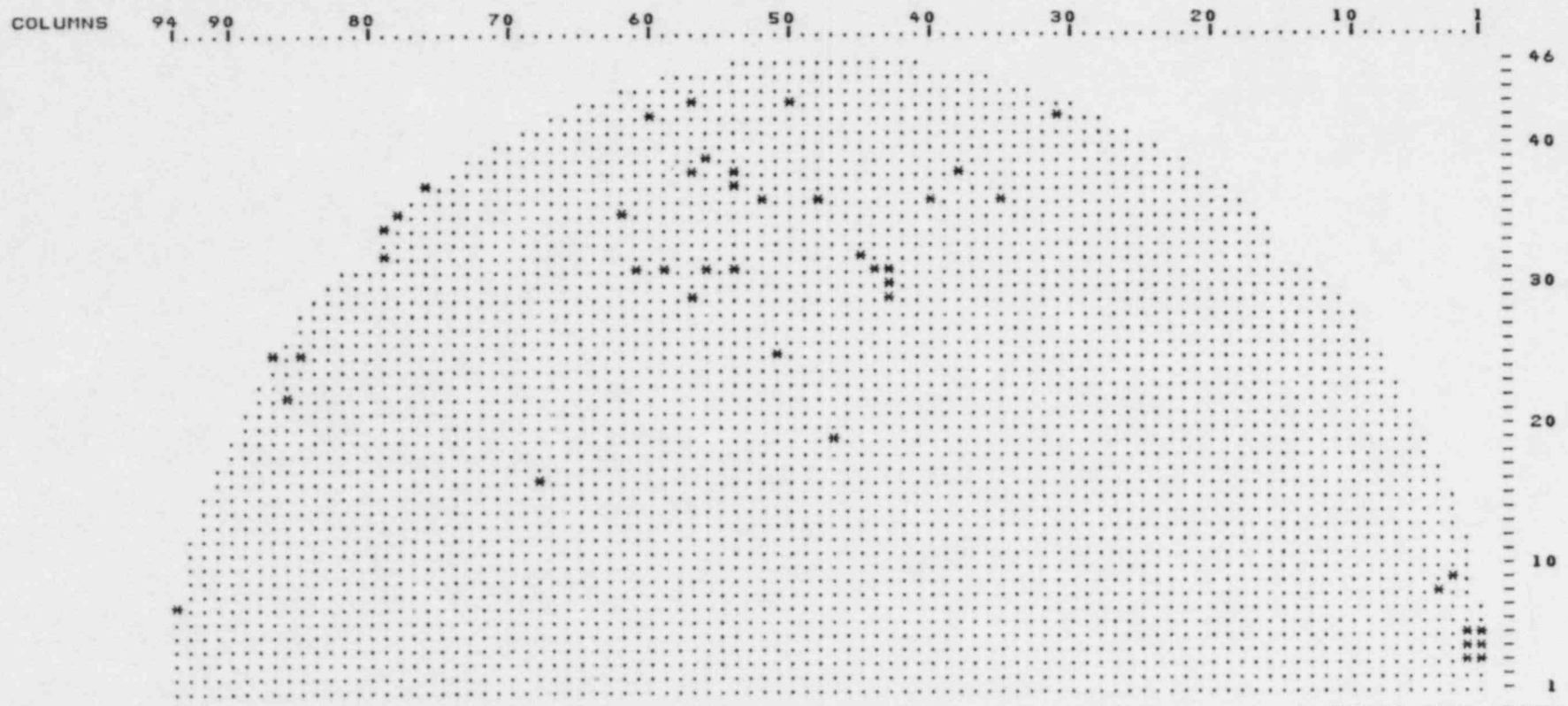
***** PLUGGED TUBES *****	
STEAM GENERATOR NO.	11
INLET OR OUTLET	OUTLET (COLD LEG)
INSPECTIONS MAPPED	73 THROUGH 84
REGION MAPPED	TUBE SHEET
TO	AROUND U-BEND

NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51

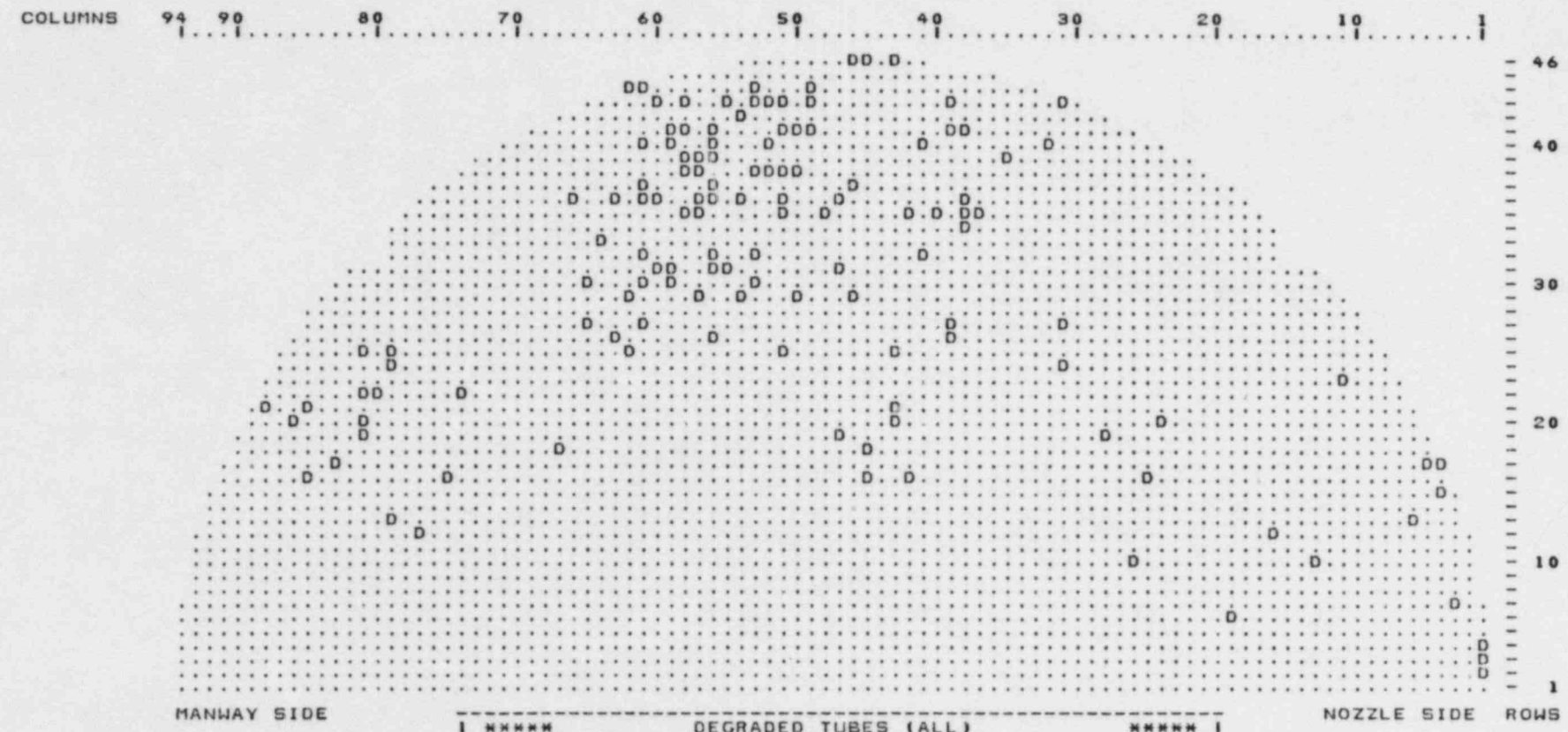


****** DEGRADED TUBES (ALL) ******	
STEAM GENERATOR NO.	11
INLET OR OUTLET	OUTLET (COLD LEG)
INSPECTIONS MAPPED	73 THROUGH 84
REGION MAPPED	TUBE SHEET
TO	AROUND U-BEND

NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51



NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51



DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF PLUGGED STEAM GENERATOR TUBES

GEN NO.	SIDE	ROW	COL.	YEAR	REMARKS/COMMENTS
11	INLET	3	1	79-	
			2	79-	PREVENTITIVE
		4	1	79-	
			2	79-	PREVENTITIVE
		5	1	79-	PREVENTITIVE
			2	79-	PREVENTITIVE
		7	94	84-	S/O
		8	4	81-	S/O
		9	3	81-	S/O
		16	68	81-	S/O
		19	47	81-	S/O
		22	86	81-	S/O
		25	51	83-	
			85	83-	S/O
			87	84-	
		29	43	81-	S/O
			57	80-	
		30	43	81-	S/O
		31	43	81-	S/O
			44	81-	S/O
			54	81-	S/O
			56	83-	AVB
			59	83-	AVB
			61	81-	S/O
		32	45	81-	S/O
			79	83-	S/O
		34	79	81-	S/O
		35	62	81-	S/O
			78	81-	S/O
		36	35	81-	S/O
			40	81-	S/O
			48	81-	S/O
			52	81-	S/O
		37	54	81-	S/O
			76	83-	S/O
		38	38	81-	S/O
			54	81-	S/O
			57	83-	AVB
		39	69	83-	AVB
		42	69	82-	BULGE
			31	81-	S/O
			60	83-	S/O
		43	69	81-	S/O
			71	81-	S/O
	OUTLET	3	1	79-	S/I
			2	79-	S/I
		4	1	79-	S/I
			2	79-	S/I
		5	1	79-	S/I
			2	79-	S/I
		7	94	84-	
		8	4	81-	
		9	3	81-	
		16	68	81-	
		19	47	81-	
		22	86	81-	
		25	51	83-	S/I
			57	83-	(S/I)
			57	84-	S/I
		29	43	81-	
			57	83-	S/I
		30	43	81-	AVB
		31	43	81-	AVB
			44	81-	AVB
			54	81-	AVB
			69	83-	S/I
			61	81-	
		32	45	81-	AVB
			79	83-	S/I
		34	79	81-	
		35	62	81-	AVB
			78	81-	
		36	35	81-	AVB
			40	81-	AVB

DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF PLUGGED STEAM GENERATOR TUBES

GEN NO.	SIDE	ROW	COL	YEAR	REMARKS/COMMENTS
11	OUTLET	36	48	81-	AVB
			52	81-	AVB
		37	54	81-	AVB
			76	83-	S/I
		38	38	81-	AVB
			54	81-	AVB
			57	83-	S/I
		39	56	83-	S/I
		42	31	81-	
			60	83-	S/I
		43	50	81-	AVB
			57	81-	AVB

DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	INLET	2	1	79-	5 " ABOVE	TUBE SH	THINNING	<20	
				83-	58 " ABOVE	TUBE SH	THINNING	<20	
		3	1	79-	55 " ABOVE	TUBE SH	THINNING	65	
		4	1	79-	35 " ABOVE	TUBE SH	THINNING	100	
		6	19	83		1ST SUP	THINNING	39	
		7	3	83	5 " ABOVE	TUBE SH	THINNING	<20	
		10	13	83		1ST SUP	THINNING	32	
			26	83		2ND SUP	THINNING	26	
		12	16	82		1ST SUP	THINNING	31	
			77	83		1ST SUP	THINNING	34	
		13	6	82		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	<20	
			79	83		1ST SUP	THINNING	<20	
		15	4	82	1 " ABOVE	TUBE SH	THINNING	<20	
		16	25	82		4TH SUP	THINNING	<20	
			42	83		4TH SUP	THINNING	43	
				83		4TH SUP	THINNING	34	
			45	83		2ND SUP	THINNING	34	
			75	83		1ST SUP	THINNING	<20	
			85	82		2ND SUP	THINNING	31	
				83		2ND SUP	THINNING	20	
		17	4	82	1 " ABOVE	TUBE SH	THINNING	31	
				83	1 " ABOVE	TUBE SH	THINNING	<20	
			83	82		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	30	
		18	45	83		2ND SUP	THINNING	<20	
			67	83		1ST SUP	THINNING	<20	
		19	28	83		2ND SUP	THINNING	26	
			47	81	25 " ABOVE	7TH SUP	THINNING	90	
			81	83		1ST SUP	THINNING	<20	
		20	24	83		1ST SUP	THINNING	33	
			43	82	4 " ABOVE	7TH SUP	THINNING		
			81	83		1ST SUP	THINNING	<20	
			86	84		2ND SUP	THINNING	<20	
		21	43	82	4 " ABOVE	7TH SUP	THINNING		
			85	84		1ST SUP	THINNING	<20	
			88	84		1ST SUP	THINNING	<20	
		22	74	83		1ST SUP	THINNING	40	
			80	83		1ST SUP	THINNING	<20	
			81	83		1ST SUP	THINNING	22	
		23	11	83		1ST SUP	THINNING	<20	
		24	19	82		3RD SUP	THINNING		BELOW
			79	82		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	<20	
		25	43	83		2ND SUP	THINNING	27	
			51	83	19" BELOW	TUBE SH	THINNING	43	
			69	83		1ST SUP	THINNING	<20	
			79	83		1ST SUP	THINNING	<20	
			81	83		1ST SUP	THINNING	32	
		26	3	83		2ND AVB	THINNING	<20	
				83		3RD AVB	THINNING	<20	
			56	83		3RD AVB	THINNING	<20	
				82		3RD AVB	THINNING	30	
				82		4TH AVB	THINNING	<20	
				82		4TH AVB	THINNING	32	
			63	82		1ST SUP	THINNING	32	
				83		1ST SUP	THINNING	<20	
		27	31	82		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	20	
			39	83		1ST AVB	THINNING	21	
				82		2ND AVB	THINNING	24	
				83		2ND AVB	THINNING	28	
				83		3RD AVB	THINNING	22	
			61	82		1ST AVB	THINNING	<20	
				83		1ST AVB	THINNING	32	
				82		2ND AVB	THINNING	<20	
				83		2ND AVB	THINNING	20	
				83		3RD AVB	THINNING	22	
				83		3RD AVB	THINNING	<20	
			65	83		1ST AVB	THINNING	20	
		29	46	82		1ST AVB	THINNING	21	
				83		1ST AVB	THINNING	<20	
				82		2ND AVB	THINNING	19	
				83		2ND AVB	THINNING	36	
				82		3RD AVB	THINNING	<20	

DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	INLET	29	46	83	3RD AVB		THINNING	36	
				83	4TH AVB		THINNING	24	
			50	83	4TH AVB		THINNING	<20	
			54	83	2ND AVB		THINNING	<20	
				83	2ND AVB		THINNING	26	
			57	82	2ND AVB		THINNING	33	
				83	2ND AVB		THINNING	43	
				82	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	28	
				83	4TH AVB		THINNING	21	
			62	82	1ST SUP		THINNING	<20	
		30	53	83	1ST AVB		THINNING	21	
				82	2ND AVB	3RD AVB	THINNING	<20	
				83	2ND AVB		THINNING	28	
				83	3RD AVB		THINNING	31	
			59	82	1ST AVB		THINNING	<20	
				82	2ND AVB		THINNING	<20	
				82	3RD AVB		THINNING	<20	
				82	4TH AVB		THINNING	28	
			61	82	1ST SUP		THINNING	<20	
				83	1ST SUP		THINNING	<20	
			65	82	2ND AVB		THINNING	<20	
				83	2ND AVB		THINNING	24	
		31	47	83	2ND AVB		THINNING	<20	
				83	3RD AVB		THINNING	20	
			55	82	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	22	
				83	4TH AVB		THINNING	22	
			56	83	1ST AVB		THINNING	22	
				82	2ND AVB		THINNING	<20	
				83	2ND AVB		THINNING	35	
				82	3RD AVB		THINNING	<30	
				83	3RD AVB		THINNING	43	
				82	4TH AVB		THINNING	<20	
				83	4TH AVB		THINNING	36	
			59	83	1ST AVB		THINNING	<20	
				83	2ND AVB		THINNING	32	
				83	3RD AVB		THINNING	35	
				83	4TH AVB		THINNING	40	
			60	82	1ST AVB		THINNING	<20	
				83	2ND AVB		THINNING	25	
				82	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	29	
				83	4TH AVB		THINNING	26	
		32	41	82	1ST SUP		THINNING	<20	
				83	1ST SUP		THINNING	31	
			53	82	2ND AVB		THINNING	26	
				83	2ND AVB		THINNING	33	
				82	3RD AVB		THINNING	32	
				83	3RD AVB		THINNING	40	
			56	83	1ST AVB		THINNING	20	
				83	2ND AVB		THINNING	31	
			61	83	2ND AVB		THINNING	20	
		33	64	83	3RD AVB		THINNING	21	
		34	38	83	3RD AVB		THINNING	<20	
		35	37	83	2ND AVB		THINNING	<20	
			38	83	1ST SUP		THINNING	22	
			40	83	1ST AVB		THINNING	23	
				83	2ND AVB		THINNING	33	
			42	83	1ST AVB		THINNING	23	
				82	2ND AVB		THINNING	<20	
				83	2ND AVB		THINNING	31	
			48	83	3RD AVB		THINNING	<20	
				82	4TH AVB		THINNING	24	
				83	4TH AVB		THINNING	33	
			51	83	3RD AVB		THINNING	<20	
			57	83	4TH AVB		THINNING	<20	
				83	2ND AVB		THINNING	21	
				82	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	33	
			58	83	4TH AVB		THINNING	31	
		36	38	83	2ND AVB		THINNING	<20	
				83	3RD AVB		THINNING	21	
			47	83	3RD AVB		THINNING	20	
				82	4TH AVB		THINNING	<20	

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PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	INLET	36	47	83	4TH AVB		THINNING	23	
			51	83	3RD AVB		THINNING	30	
				83	3RD AVB		THINNING	30	
			54	83	2ND AVB		THINNING	20	
				83	2ND AVB		THINNING	31	
				83	3RD AVB		THINNING	10	
				83	4TH AVB		THINNING	00	
			56	83	2ND AVB		THINNING	00	
				83	2ND AVB		THINNING	30	
				83	4TH AVB		THINNING	30	
				83	4TH AVB		THINNING	38	
			57	83	4TH AVB		THINNING	30	
			60	83	2ND AVB		THINNING	60	
			61	83	2ND AVB		THINNING	00	
				83	2ND AVB		THINNING	90	
				83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	05	
			63	83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
			66	83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	01	
		37	46	83	3RD AVB		THINNING	10	
				83	3RD AVB		THINNING	07	
			56	83	2ND AVB		THINNING	07	
			61	83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
		38	50	83	3RD AVB		THINNING	00	
			51	83	3RD AVB		THINNING	07	
				83	3RD AVB		THINNING	07	
			52	83	3RD AVB		THINNING	04	
				83	3RD AVB		THINNING	04	
			53	83	2ND AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	01	
				83	4TH AVB		THINNING	10	
			57	83	1ST AVB		THINNING	06	
				83	1ST AVB		THINNING	48	
				83	2ND AVB		THINNING	38	
				83	2ND AVB		THINNING	34	
				83	3RD AVB		THINNING	20	
			58	83	1ST AVB		THINNING	20	
				83	2ND AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	05	
		39	35	83	1ST AVB		THINNING	52	
			56	83	1ST AVB		THINNING	00	
				83	1ST AVB		THINNING	00	
				83	2ND AVB		THINNING	41	
				83	2ND AVB		THINNING	41	
				83	4TH AVB		THINNING	10	
				83	4TH AVB		THINNING	09	
			57	83	4TH AVB		THINNING	00	
			58	83	2ND AVB		THINNING	00	
				83	2ND AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	03	
				83	4TH AVB		THINNING	07	
				83	4TH AVB		THINNING	07	
		40	32	83	3RD SUP		THINNING	06	
			41	83	1ST AVB		THINNING	65	
			52	83	2ND AVB		THINNING	04	
				83	3RD AVB		THINNING	43	
				83	4TH AVB		THINNING	30	
			56	83	4TH AVB		THINNING	00	
				83	4TH AVB		THINNING	00	
			59	83	2ND AVB		THINNING	00	
				83	2ND AVB		THINNING	00	
				83	3RD AVB		THINNING	00	
				83	3RD AVB		THINNING	05	
				83	4TH AVB		THINNING	54	
				83	4TH AVB		THINNING	00	
			61	83	2ND AVB		THINNING	00	
				83	2ND AVB		THINNING	00	
				83	3RD AVB		THINNING	00	

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PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	INLET	40	61	83	3RD AVB		THINNING	4	
		41	38	83	3RD AVB		THINNING	<20	
			39	83	4TH AVB		THINNING	<20	
				83	3RD AVB	4TH AVB	THINNING	<20	
				83	3RD AVB		THINNING	40	
			49	83	4TH AVB		THINNING	40	
				83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	50	
				83	4TH AVB		THINNING	<20	
				83	4TH AVB		THINNING	60	
			50	83	1ST AVB		THINNING	<20	
				83	2ND AVB		THINNING	40	
				83	2ND AVB		THINNING	<20	
			51	83	3RD AVB		THINNING	40	
			56	83	3RD AVB		THINNING	40	
				83	4TH AVB		THINNING	60	
			58	83	2ND AVB		THINNING	70	
				83	3RD AVB		THINNING	80	
			59	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	90	
		42	54	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	70	
				83	4TH AVB		THINNING	<20	
				83	4TH AVB		THINNING	80	
		43	31	83	6TH SUP		THINNING	90	
			39	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	50	
				83	4TH AVB		THINNING	60	
			49	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	70	
				83	4TH AVB		THINNING	80	
			51	83	3RD AVB		THINNING	90	
				83	4TH AVB		THINNING	40	
			52	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	<20	
			53	83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	60	
				83	4TH AVB		THINNING	70	
			55	83	2ND AVB		THINNING	80	
				83	3RD AVB		THINNING	<20	
				83	3RD AVB		THINNING	30	
				83	4TH AVB		THINNING	<20	
			58	83	1 " ABOVE TUBE SH		THINNING	<20	
			60	83	2ND AVB		THINNING	80	
		44	49	83	4TH AVB		THINNING	90	
			53	83	1ST SUP		THINNING	<20	
			61	83	1ST SUP		THINNING	<20	
			62	83	1ST SUP		THINNING	<20	
		46	43	83	3RD AVB		THINNING	<20	
			45	83	2ND AVB		THINNING	<20	
			46	83	3RD AVB		THINNING	<20	
	OUTLET	7	3	82	55 " ABOVE TUBE SH		THINNING	30	
			94	84	55 " ABOVE TUBE SH		THINNING	90	
		8	43	81	1 5 " BELOW TUBE SH		THINNING	40	
		9	3	81	55 " ABOVE TUBE SH		THINNING	40	
				81	55 " ABOVE TUBE SH		THINNING	70	
		16	68	81	15 " ABOVE 7TH SUP		THINNING	80	
		20	89	84	1ST SUP		THINNING	<20	
		21	88	83	1ST SUP		THINNING	90	
		22	86	80	1ST SUP		THINNING	90	
			87	81	1ST SUP		THINNING	50	
				83	1ST SUP		THINNING	10	
			86	84	1ST SUP		THINNING	<20	
		23	87	84	1ST SUP		THINNING	60	
			88	84	1ST SUP		THINNING	80	
		24	31	82	3RD SUP		THINNING	90	
			85	84	1ST SUP		THINNING	80	
			86	83	1ST SUP		THINNING	80	
				84	1ST SUP		THINNING	50	
		25	84	83	1ST SUP		THINNING	50	
			85	82	1ST AVB		THIN	50	

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PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	OUTLET	25	85	83	1ST SUP		THINNING	43	
			87	84	7TH SUP		THINNING	>90	
		26	56	81	4TH AVB		THINNING	<20	
		27	61	81	1ST AVB		THINNING	<20	
			65	81	3RD AVB		THINNING	<20	
			85	83	1ST SUP		THINNING	23	
				84	1ST SUP		THINNING	35	
		29	43	81	2ND AVB		THINNING	38	
			46	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	<20	
			57	81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	<20	
			80	83	1ST SUP		THINNING	<20	
			81	83	1ST SUP		THINNING	23	
			83	83	2ND SUP		THINNING	23	
		30	43	81	1ST AVB		THINNING	<50	
				81	2ND AVB		THINNING	40	
				81	3RD AVB		THINNING	<20	
				81	4TH AVB		THINNING	<20	
			53	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	<20	
			65	81	2ND AVB		THINNING	<20	
			79	83	1ST SUP		THINNING	21	
		31	43	81	2ND AVB		THINNING	<50	
				81	3RD AVB		THINNING	51	
				81	4TH AVB		THINNING	53	
			44	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	36	
				81	3RD AVB		THINNING	62	
			54	81	2ND AVB		THINNING	52	
				81	3RD AVB		THINNING	56	
				81	4TH AVB		THINNING	60	
			55	81	3RD AVB		THINNING	<20	
			56	81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	<20	
				81	4TH AVB		THINNING	<20	
			59	81	4TH AVB		THINNING	<20	
			60	81	3RD AVB		THINNING	<20	
			61	81	2ND AVB		THINNING	07	
				81	3RD AVB		THINNING	09	
			78	83	1ST SUP		THINNING	<20	
			80	83	2ND SUP		THINNING	22	
		32	41	81	1ST SUP		THINNING	<20	
			45	81	2ND AVB		THINNING	41	
				81	3RD AVB		THINNING	42	
			53	81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	22	
			77	83	1ST SUP		THINNING	28	
			79	83	1ST SUP		THINNING	54	
				83	2ND SUP		THINNING	49	
		34	76	83	1ST SUP		THINNING	22	
			78	83	1ST SUP		THINNING	44	
			79	81	2ND SUP		THINNING	55	
		35	42	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	<20	
			48	81	4TH AVB		THINNING	22	
			62	81	4TH AVB		THINNING	49	
			78	80	2ND SUP		THINNING	34	
				81	2ND SUP		THINNING	45	
		36	35	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	56	
				81	3RD AVB		THINNING	66	
				81	4TH AVB		THINNING	<20	
			40	81	1ST AVB		THINNING	52	
				81	2ND AVB		THINNING	65	
				81	3RD AVB		THINNING	52	
				81	4TH AVB		THINNING	52	
			47	81	4TH AVB		THINNING	<20	
			48	81	2ND AVB		THINNING	44	
				81	3RD AVB		THINNING	44	
			52	81	2ND AVB		THINNING	49	
			54	81	2ND AVB		THINNING	<20	
			56	81	2ND AVB		THINNING	<20	

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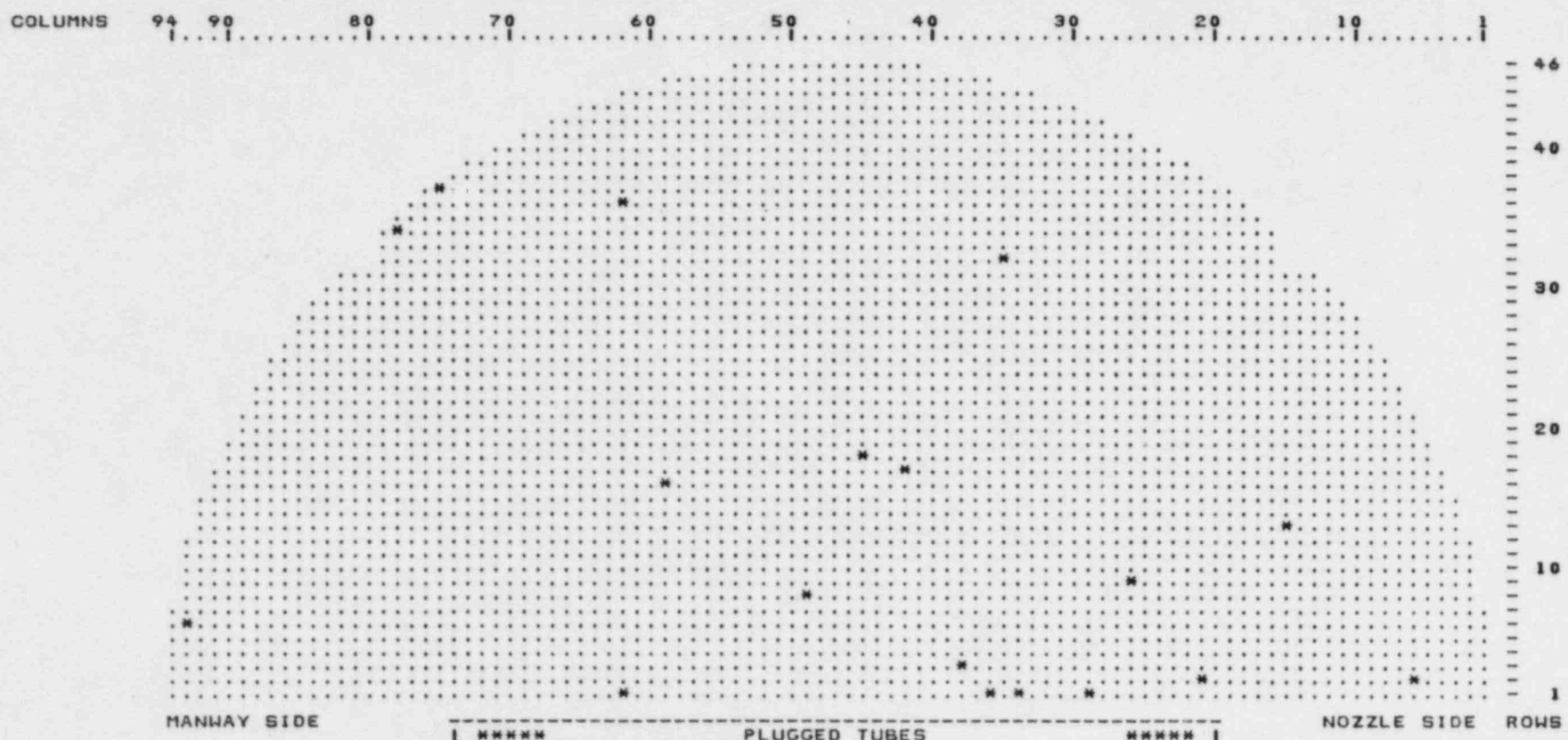
PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
11	OUTLET	36	56	81	4TH AVB		THINNING	<20	
			63	81	3RD AVB		THINNING	<20	
			66	81	3RD AVB		THINNING	<20	
		37	46	81	3RD AVB		THINNING	<20	
			54	81	3RD AVB		THINNING	58	
			76	83	1ST SUP		THINNING	49	
		38	38	81	4TH AVB		THINNING	38	
			52	81	3RD AVB		THINNING	<20	
			54	81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	63	
				81	4TH AVB		THINNING	60	
			57	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	<20	
		39	56	81	1ST AVB		THINNING	<20	
				81	2ND AVB		THINNING	<20	
			58	81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	<20	
				81	4TH AVB		THINNING	<20	
		40	56	81	4TH AVB		THINNING	<20	
			59	81	3RD AVB		THINNING	<20	
				81	4TH AVB		THINNING	<20	
		42	28	83	3RD SUP		THINNING	<20	
			31	81	3RD SUP		THINNING	38	
			60	83	3RD SUP		THINNING	45	
			62	83	1ST SUP		THINNING	<20	
				83	1ST SUP		THINNING	<20	
				81	1ST SUP		THINNING	<20	
		43	49	81	3RD AVB		THINNING	<20	
				81	4TH AVB		THINNING	<20	
			50	81	3RD AVB		THINNING	39	
				81	4TH AVB		THINNING	<20	
			54	83	1ST SUP		THINNING	<20	
			57	81	4TH AVB		THINNING	56	
				81	2ND AVB		THINNING	<20	
				81	3RD AVB		THINNING	38	
			61	83	3RD SUP		THINNING	38	
		44	37	83	1ST SUP		THINNING	38	
		45	37	83	3RD SUP		THINNING	<20	
				83	3RD SUP		THINNING	<20	
			40	83	3RD SUP		THINNING	<20	
			49	83	1ST SUP		THINNING	33	
			50	83	1ST SUP		THINNING	33	
			51	83	1ST SUP		THINNING	34	
			58	83	1ST SUP		THINNING	<20	
			59	83	1ST SUP		THINNING	32	
			63	83	3RD SUP		THINNING	34	
		46	43	81	2ND AVB		THINNING	<20	

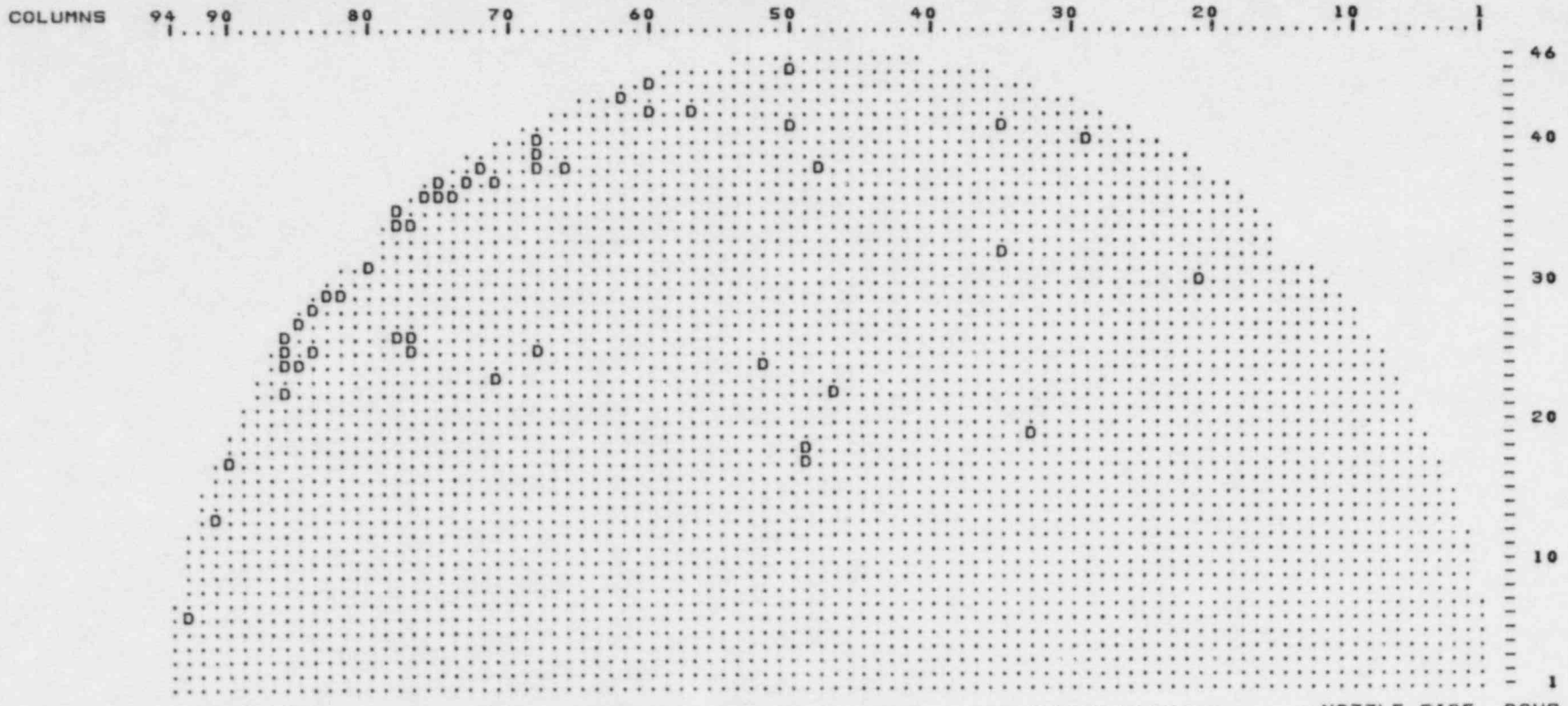
APPENDIX C

STEAM GENERATOR NO. 12
EDDY CURRENT EXAMINATION RESULTS AND TUBE SHEET MAPS

NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51

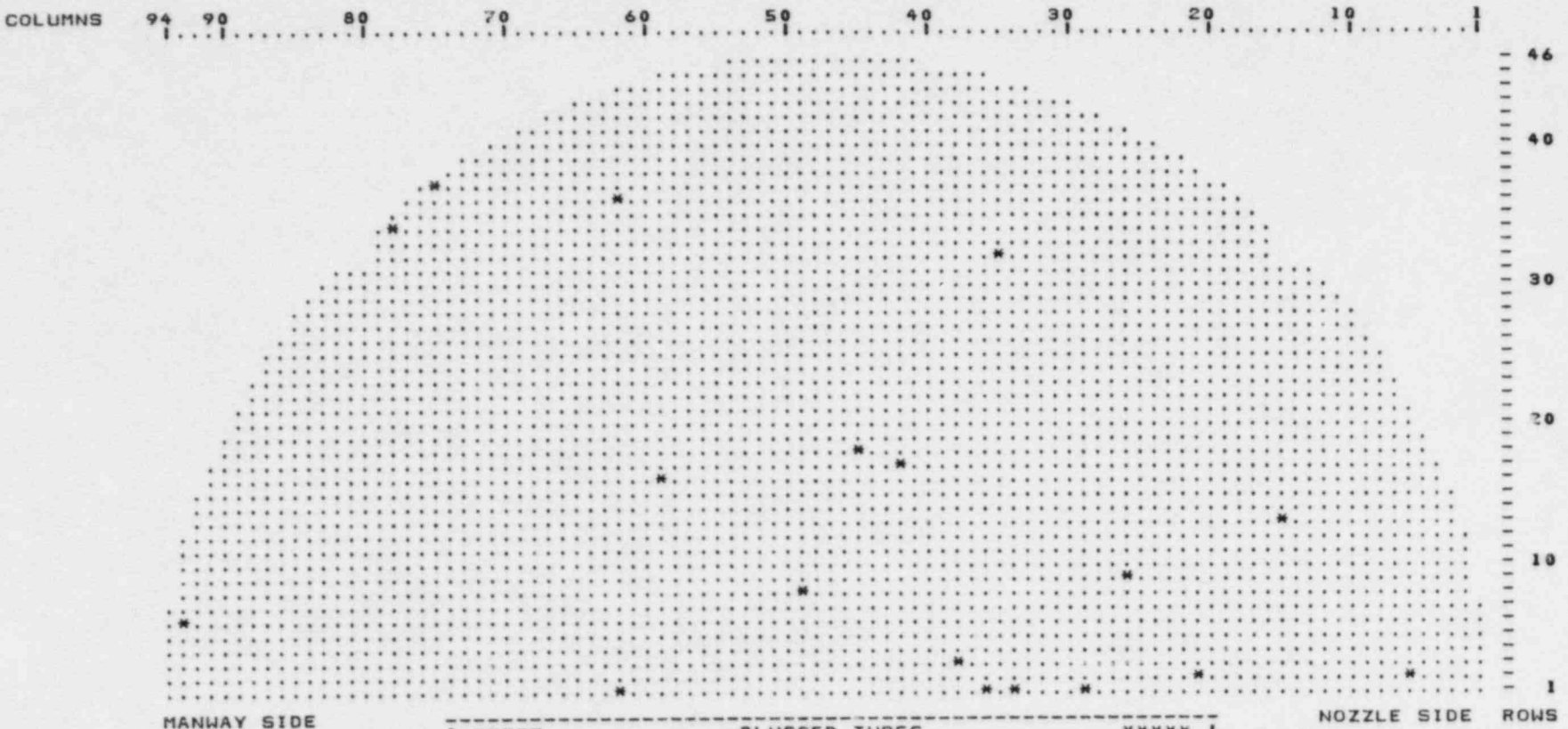


NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51

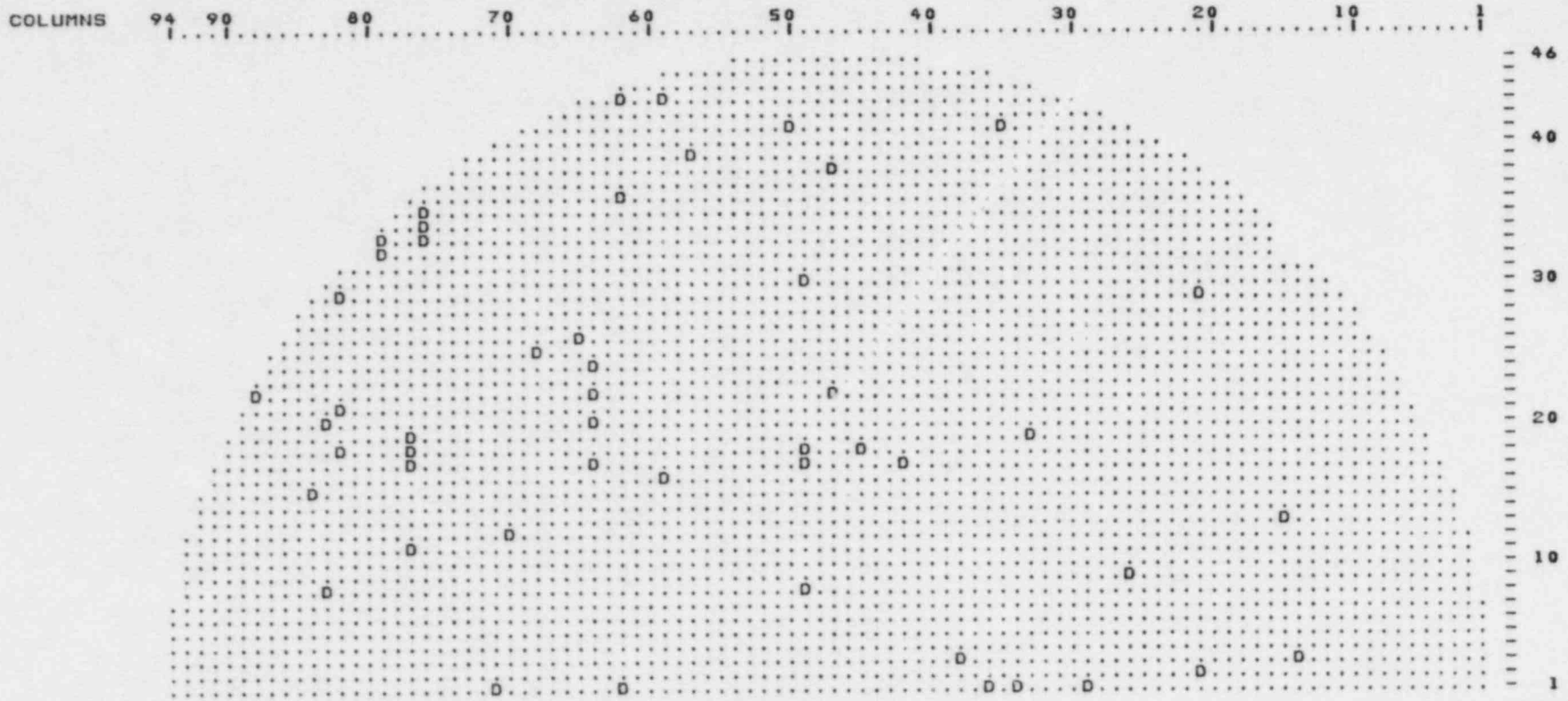


****** DEGRADED TUBES (ALL) ******
STEAM GENERATOR NO. : 12
INLET OR OUTLET : OUTLET (COLD LEG)
INSPECTIONS MAPPED : 73 THROUGH 84
REGION MAPPED : TUBE SHEET
TO : AROUND U-BEND

NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51



NORTHERN STATES POWER COMPANY
POWER PRODUCTION MATERIALS AND SPECIAL PROCESSES SECTION
PRAIRIE ISLAND NUCLEAR GENERATING PLANT STEAM GENERATOR TUBE MAP - WESTINGHOUSE SERIES 51



****** DEGRADED TUBES (ALL) ******
STEAM GENERATOR NO. : 12
INLET OR OUTLET : INLET (HOT LEG)
INSPECTIONS MAPPED : 73 THROUGH 84
REGION MAPPED TO : TUBE SHEET AROUND U-BEND

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PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF PLUGGED STEAM GENERATOR TUBES

GEN NO.	SIDE	ROW	COL	YEAR	REMARKS/COMMENTS
12	INLET	1	29	83-	
			34	83-	
			36	83-	
			62	83-	
		2	6	81-	S/O
			21	80-	
		3	38	83-	
		4	93	84-	S/O
		8	49	83-	
		9	26	84-	
		13	15	84-	
		16	59	83-	
		17	42	84-	
		18	45	84-	
		32	35	81-	S/O
		34	78	84-	S/O
		36	62	83-	
		37	75	84-	S/O
	OUTLET	1	29	83-	S/I
			34	83-	S/I
			36	83-	S/I
			62	83-	S/I
		2	6	81-	
			21	80-	S/I
		3	38	83-	S/I
		8	49	83-	S/I
		9	26	84-	S/I
		13	15	84-	S/I
		16	59	83-	S/I
		17	42	84-	S/I
		18	45	84-	S/I
		32	35	81-	AVB
		34	78	84-	
		36	62	83-	S/I
		37	75	84-	

DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
12	INLET	1	29	83	12" BELOW	TUBE SH	THINNING	98	
			34	83	11" BELOW	TUBE SH	THINNING	<20	SQUIRREL
			36	83	11" BELOW	TUBE SH	THINNING	<20	
			62	83	11" BELOW	TUBE SH	THINNING	<20	SQUIRREL
			72	82		1ST SUP	THINNING		POSSIBLE BEND
		2	14	82	11" BELOW	TUBE SH	THINNING	100	
				83	16TH SUP	ABOVE	THINNING	<20	
				83	16TH SUP	ABOVE	THINNING	<20	
			38	83	11" BELOW	TUBE SH	THINNING	<20	SQUIRREL
		8	83	83	10" BELOW	TUBE SH	THINNING	<20	SQUIRREL
			86	84		4TH SUP	THINNING	<20	
		9	87	82	16" BELOW	TUBE SH	THINNING	<20	
		11		82		1ST SUP	THINNING	<20	
				82		1ST SUP	THINNING	<20	
		12	78	82		2ND SUP	THINNING	<20	
		13	154	84	12" BELOW	TUBE SH	THINNING	60	
		15	8	78		2ND SUP	THINNING	<20	
				82		2ND SUP	THINNING	<20	
				82		2ND SUP	THINNING	<20	
		16	59	83	8" BELOW	TUBE SH	THINNING	<20	
		17	49	84	11" BELOW	TUBE SH	THINNING	<20	
				83		2ND AVB	THINNING	20	
				83		2ND AVB	THINNING	<20	
				83		3RD AVB	THINNING	80	
			64	83		3RD AVB	THINNING	<20	
				82		1ST AVB	THINNING	<20	
			77	82		2ND AVB	THINNING	<20	
				83		1ST SUP	THINNING	<20	
		18	45	84	10" BELOW	TUBE SH	THINNING	<20	
				84	11" BELOW	TUBE SH	THINNING	10	
			49	82		2ND AVB	THINNING	11	
				83		2ND AVB	THINNING	<20	
				83		3RD AVB	THINNING	<20	
			77	83		3RD AVB	THINNING	<20	
				83		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	40	
				83		2ND SUP	THINNING	<20	
		19	33	82		1ST AVB	THINNING	60	
			77	83		2ND AVB	THINNING	<20	
				83		2ND SUP	THINNING	<20	
		20	64	82		1ST SUP	THINNING	<20	
				83		1ST SUP	THINNING	60	
				83		2ND SUP	THINNING	<20	
		21	82	82		2ND SUP	THINNING	80	
		22	74	82		1ST AVB	THINNING	<20	
			64	82		2ND SUP	THINNING	<20	
				83		2ND SUP	THINNING	<20	
			88	83		1ST SUP	THINNING	<20	
		24	48	82		1ST AVB	THINNING	<20	
		25	68	82		1ST AVB	THINNING	<20	
				82		1ST SUP	THINNING	40	
		26	51	82	2 " ABOVE	TUBE SH	THINNING	<20	
				83	3 " ABOVE	TUBE SH	THINNING	<20	
			82	84		1ST SUP	THINNING	20	
				84		1ST SUP	THINNING	99	
		30	49	84	2" BELOW	1ST AVB	THINNING	00	
		33	76	84		2ND SUP	THINNING	<20	
			79	84		3RD SUP	THINNING	00	
			76	84		3RD SUP	THINNING	00	
		34	62	84		2ND SUP	THINNING	<20	
		35	42	83		TUBE SH	THINNING	40	
		36	47	83		2ND AVB	THINNING	20	
		38	50	84		4TH AVB	THINNING	00	
		41	55	84		4TH AVB	THINNING	<20	
			50	83		3RD AVB	THINNING	<20	
				83		3RD AVB	THINNING	20	
		43	52	82		1ST SUP	THINNING	<20	
			62	83		1ST SUP	THINNING	<20	
	OUTLET	6	93	84	19" BELOW	TUBE SH	THINNING	75	

DEC 31, 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
12	OUTLET	13	91	83	1ST SUP		THINNING	22	
				84	1STD SUP		THINNING	25	
		17	49	84	2ND AVB		THINNING	54	
				84	3RD AVB		THINNING	46	
			90	83	1ST SUP		THINNING	< 20	
				84	1STT SUP		THINNING	46	
		18	49	84	1ST AVB		THINNING	40	
				84	2ND AVB		THINNING	42	
		19	33	84	1ST AVB		THINNING	20	
				84	2ND AVB		THINNING	< 20	
				84	3RD AVB		THINNING	< 20	
				84	4TH AVB		THINNING	< 20	
		22	47	84	3RD AVB		THINNING	< 20	
			86	84	1ST SUP		THINNING	30	
		23	71	84	3RD SUP		THINNING	39	
		24	52	84	2ND AVB		THINNING	20	
			85	82	1STT SUP		THINNING	< 20	
				83	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	< 20	
			86	83	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	30	
		25	68	84	1ST AVB		THINNING	31	
			77	84	TUBE SH		THINNING	20	
			84	84	1STT SUP		THINNING	< 20	
			86	83	1STT SUP		THINNING	20	
				84	1STT SUP		THINNING	20	
		26	77	84	TUBE SH		THINNING	20	
			78	84	TUBE SH		THINNING	< 20	
			86	84	1ST SUP		THINNING	< 20	
		27	85	82	1STT SUP		THINNING	30	
				83	1STT SUP		THINNING	29	
				84	1STT SUP		THINNING	30	
		28	84	82	1STT SUP		THINNING	< 20	
				83	1STT SUP		THINNING	< 20	
				80	1STT SUP		THINNING	< 20	
				81	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	20	
		29	82	83	1STT SUP		THINNING	51	
			83	83	1STT SUP		THINNING	20	
				84	1STT SUP		THINNING	< 20	
		30	21	75	20 " ABOVE	1STT SUP	THINNING	< 20	
		31	80	82	1STT SUP		THINNING	< 20	
				83	1STT SUP		THINNING	58	
				84	1STT SUP		THINNING	24	
		32	35	81	2ND AVB		THINNING	49	
		34	77	83	3RD AVB		THINNING	20	
				84	1STT SUP		THINNING	20	
			78	82	1STT SUP		THINNING	48	
				83	1STT SUP		THINNING	30	
				84	1STT SUP		THINNING	34	
		35	78	84	1STT SUP		THINNING	25	
		36	74	83	1STT SUP		THINNING	41	
				84	1STT SUP		THINNING	20	
			75	83	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	< 20	
			76	82	1STT SUP		THINNING	20	
				83	1STT SUP		THINNING	20	
				84	1STT SUP		THINNING	69	
		37	71	83	1STT SUP		THINNING	50	
				84	1STT SUP		THINNING	< 20	
			73	83	1STT SUP		THINNING	43	
				84	1STT SUP		THINNING	35	
			75	83	1STT SUP		THINNING	42	
				84	1STT SUP		THINNING	62	
		38	48	84	1ST AVB		THINNING	< 20	
				84	2ND AVB		THINNING	< 20	
			66	84	1ST SUP		THINNING	< 20	
			68	83	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	20	
			72	83	1STT SUP		THINNING	< 20	
				84	1STT SUP		THINNING	20	
		39	68	82	1STT SUP		THINNING	30	
				83	1STT SUP		THINNING	37	
				84	1ST SUP		THINNING	37	

DEC 31. 1984

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
LIST OF IMPERFECT, DEGRADED, AND DEFECTIVE TUBES

GEN NO.	SIDE	ROW	COL	YEAR	FROM	TO	DEFECT OR OBS	%	REMARKS/COMMENTS
12	OUTLET	40	29	82-	6TH SUP	7TH SUP	THINNING	20	BETWEEN
				83-	37 " ABOVE 6TH SUP		THINNING	<20	
				81-	39 " ABOVE 6TH SUP		THINNING	<20	
			68	83-	1ST SUP		THINNING	<20	
				84-	1ST SUP		THINNING	<20	
		41	35	84-	4TH AVB		THINNING	<20	
			50	84-	3RD AVB		THINNING	<20	
		42	57	83-	34 " ABOVE 3RD SUP		THINNING	<20	
				82-	18" BELOW 4TH SUP		THINNING	<20	
			60	83-	1ST SUP		THINNING	<20	
		43	62	83-	1ST SUP		THINNING	<20	
		44	60	83-	1ST SUP		THINNING	20	
				84-	1ST SUP		THINNING	25	
		45	50	84-	1ST SUP		THINNING	25	

APPENDIX D

FORM NIS-1, OWNERS DATA REPORT FOR INSERVICE INSPECTION

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

(As Required by the Provisions of the ASME Code Rules)

1.) Owner NORTHERN STATES POWER COMPANY

Address 414 NICOLLET MALL, MINNEAPOLIS, MN 55401

2.) Plant PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Address WELSH, MN

3.) Plant Unit 1 4.) Owner (Certificate of Authorization) - - -

5.) Commercial Service Date 12-16-73 6.) National Board Number for Unit - - -

7.) Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
STEAM GENERATOR TUBING				
STEAM GENERATOR #11	WESTINGHOUSE	1101	MN	6824
STEAM GENERATOR #12	WESTINGHOUSE	1102	MN	6825

FORM NIS-1 (back)

8.) Examination Dates Oct. 23 to Nov.4,1984 9.) Inspection Interval Dec.,1973 to Dec.,1983

10.) Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.

EXAMINED VARIOUS TUBES IN EACH GENERATOR. EXAMINATIONS FOCUSED ON TURING ADJACENT TO LEAKERS AND IN HISTORICALLY PREVALENT DEGRADED AREAS.

11.) Abstract of Conditions Noted.

MINIMAL OVER-ALL DEGRADATION DETECTED WITH EXCEPTIONS BEING TUBES WHICH EXHIBITED LEAKS VISUALLY.

12.) Abstract of Corrective Measures Recommended and Taken.

ALL DEFECTIVE TUBING WAS REMOVED FROM SERVICE VIA MECHANICAL PLUGGING OF THE TUBE ENDS.

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.

Date 1/9/ 1984 Signed NORTHERN STATES POWER (Owner) By Michael L. Anderson

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

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of MINNESOTA and employed by HARTFORD STM BOILER INT of HARTFORD, CONN have inspected the components described in this Owner's Data Report during the period 10-23-84 to 11-4-84, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of 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 Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date Jan. 9 1985

R. J. Kuylen
Inspector's Signature

Commissions NB 9904 MN 85-34
National Board, State, Province & No.

ATTACHMENT 1

NRC COMMITTMENT REFERENCE

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 6 1984

Docket No. 50-282

Mr. D. M. Musolf
Nuclear Support Services Department
Northern States Power Company
414 Nicollet Mall
Midland Square - 4th Floor
Minneapolis, Minnesota 55401

Dear Mr. Musolf:

We have completed our review of your reevaluation of the eddy current test results transmitted by letter dated June 18, 1984. The eddy current test results are from the December 1983 steam generator tube inspection data of the Prairie Island Generating Plant Unit No. 1. This reevaluation was prompted by a small primary to secondary leak (approximately 0.015 gpm) detected in February 1984.

Based on our review of your submittal we conclude that, since the identified defects are located within the tubesheet of the steam generator, they do not at this time constitute an undue hazard to public health and safety. On this basis, the Prairie Island Nuclear Generating Plant Unit No. 1 can continue to operate provided that the primary to secondary leakage does not exceed 0.3 gpm. Based on your commitment, if the 0.3 gpm leak rate is exceeded, the unit must be shut down and the defective tubes repaired. In addition, you are requested to inform us of your plans for corrective action if leak rate exceeds 0.15 gpm.

Since your reevaluation has uncovered three defective tubes, an inconsistency exists with the technical specification, TS 4.12.D.2. In order to correct this matter, you are requested to submit a technical specification change request by July 9, 1984 so that a one-time amendment to TS 4.12.D.2 would permit continued operation with the three defected tubes in service until the end of the current cycle (December 1984).

Our Safety Evaluation is enclosed.

Sincerely,

James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing

Enclosure:
As stated

cc: See next page