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Byron Nuclear Power Station, Unit 2
Facility Operating License NPF-66
NRC Docket No. 50-455

Subject: Byron Station Unit 2 Steam Generator Inservice Inspection Summary Report

In accordance with Technical Specification 5.6.9, "Steam Generator (SG) Tube Inspection Reports," Item b, we are reporting the results of the steam generator inspections which were completed during the Byron Station Unit 2, Cycle 10 Refueling Outage (ie., B2R10). The attached report is also being submitted in accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, 1989 Edition, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Article IWA-6000, "Records and Reports," and Article IV-7000, "Report of Examination," of Mandatory Appendix IV, "Eddy Current Examination of Non-Ferromagnetic Steam Generator Heat Exchanger Tubing." Also included in this report are the results from the forced outage (B2F23) SG inspection conducted in June of 2002.

If there are any questions regarding this report, please contact W. Grundmann, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,

Richard P. Lopriore
Site Vice President
Byron Nuclear Generating Station

Attachment: Steam Generator Eddy Current Inspection Report (B2R10)

RL/JS/DD/rah

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Exelon Generation Company, LLC

BYRON STATION UNIT 2
4450 North German Church Road
Byron, Illinois 61010

COMMERCIAL OPERATION: 08/21/87

STEAM GENERATOR EDDY CURRENT INSPECTION REPORT

CYCLE 10 REFUELING OUTAGE (B2R10)

September 2002

Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

Documentation Completed Date: December 3, 2002

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1.0 INTRODUCTION

Byron Station Unit 2 operates with four Westinghouse Model D-5 recirculating steam generators (SGs) in the four loop pressurized water reactor system. The steam generators contain thermally treated Inconel-600 U-tubes that have a nominal outside diameter of 0.750 inches and a nominal thickness of 0.043 inches. The tubes are hydraulically expanded into the full depth of the tubesheet. The tubes are supported by stainless steel quatrefoil support plates (TSP's) and chrome plated Inconel-600 anti-vibration bars (AVB's). See Figure A.1 for a diagram of the D-5 steam generator configuration.

In compliance with Byron Station Technical Specification 5.5.9, "Steam Generator Tube Surveillance Program," and American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code Section XI 1989 Edition, IWB 2500-1, Examination Category B-Q, Item B16.20, SG eddy current examinations were performed during the Byron Station Unit 2 Cycle 10 refueling outage (i.e., B2R10).

The inspections were performed consistent with the Electric Power Research Institute (EPRI) "PWR Steam Generator Examination Guidelines: Revision 5" and Nuclear Energy Institute (NEI) 97-06, "Steam Generator Program Guidelines." The field inspection activities were conducted September 20 through September 25, 2002, by Westinghouse Electric Company Ltd. The following inspections were performed during this outage.

- 100% Full Length Bobbin Coil in all four SGs
- 75% Hot Leg Top of Tubesheet Plus-Point in all four SGs
- 75% Row 1 and Row 2 U-bend Plus-Point in all four SGs
- Hot Leg Dents/Dings >5.0 volts Plus-Point as follows:
  - 25% in SGs A/B
  - 100% in SGs C/D
- 25% Pre-heater baffle expansion Plus-Point in SGs B/C/D
- 100% Visual Inspection of Previously Installed Welded Tube Plugs in all SGs
- 100% Visual Inspection of Previously Installed Mechanical Tube Plugs in all SGs
- 100% Visual Inspection of Newly Installed Tube Plugs in all SGs

In addition, eddy current inspections were conducted on June 24 through June 25, 2002, during a forced outage (B2F23) caused by a primary to secondary leak in SG C. The primary to secondary leak was attributed to tube wear caused by a foreign object. The B2F23 inspections were limited to the leaking tube and the tubes surrounding the leaking tube. The tubes were inspected with a bobbin coil probe and a plus-point probe. The inspections were performed consistent with the EPRI "PWR Steam Generator Examination Guidelines: Revision 5" and Nuclear Energy Institute (NEI) 97-06, "Steam Generator Program Guidelines." Westinghouse Electric Company Ltd conducted the field inspection activities.

2.0 SUMMARY

The guidance in Revision 5 of the EPRI "PWR Steam Generator Examination Guidelines" (i.e., EPRI Guidelines) was used during this inspection. A degradation assessment was performed prior to each inspection to ensure the proper EPRI Appendix H, "Performance Demonstration for Eddy current Examination," qualified inspection techniques were used to detect any existing and potential modes of degradation. Each technique was evaluated to ensure that the detection and sizing capabilities are applicable to the Byron Station Unit 2 site specific condition in accordance with Section 6.2.4 of the EPRI Guidelines. All data analysts were qualified to Appendix G, "Qualification of Nondestructive Examination Personnel for Analysis of NDE Data," of the EPRI

Guidelines (i.e., Qualified Data Analyst (QDA)). All data analyst and acquisition personnel satisfactorily completed site specific performance training and testing. An independent QDA process control review was employed to randomly sample the data to ensure that the analysis resolution process was properly performed and that the field calls were properly reported. An analysis feedback process was implemented that required the data analysts to review their missed calls and overcalls on a daily basis.

The modes of tube degradation found during the B2R10 inspection were anti-vibration bar wear, foreign object wear, and pre-heater wear. Pursuant to Technical Specification 5.5.9.c, "Inspection Results Classification," the results of the inspection were classified as inspection category C-1 for SGs B/C/D and C-2 for SG A. There were no scanning limitations during the examinations.

As a result of the B2R10 eddy current inspections, a total of fourteen (14) tubes were repaired by tube plugging. During B2F23, three (3) tubes were repaired by tube stabilization and tube plugging. Table 2.1 provides the tube plugging levels for each SG. Table 2.2 and Table 2.3 provides the total number of tubes plugged in B2R10 and B2F23 by degradation mode.

TABLE 2.1
Equivalent Tube Plugging Level

	SG A	SG B	SG C	SG D	TOTAL
Tubes Previously Plugged	50	113	41	19	223
Tubes Plugged in B2F23	0	0	3	0	3
Tubes Plugged in B2R10	2	0	9	3	14
Total Tubes Plugged	52	113	53	22	240
Total Tubes Plugged (%)	1.14%	2.47%	1.16%	0.48%	1.31%

TABLE 2.2
Tubes Repaired During B2R10

Mode of Degradation	SG A	SG B	SG C	SG D	Total
Foreign Object Wear	0	0	8	3	**11**
Anti-Vibration Bar Wear	2	0	0	0	**2**
Pre-heater Wear	0	0	1	0	**1**
B2R10 Plugging Totals	**2**	**0**	**9**	**3**	**14**

TABLE 2.3
Tubes Repaired During B2F23

Mode of Degradation	SG A	SG B	SG C	SG D	Total
Foreign Object Wear	0	0	3	0	**3**
B2R10 Plugging Totals	**0**	**0**	**3**	**0**	**3**

3.0 CERTIFICATIONS

3.1 Procedures/Examinations/Equipment

3.1.1 The examination and evaluation procedures used during the eddy current inspection were approved by personnel qualified to Level III in accordance with the 1984 Edition of the American Society for Nondestructive Testing Recommended Practice SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing." Exelon Special Process Procedures Manual procedure NDT-E-2, "Multifrequency Eddy Current Data Acquisition of Steam generator Tubing at Braidwood and Byron Nuclear Stations," Revision 4 and procedure ER-AP-335-040, "Evaluation of Eddy Current Data for Steam Generator Tubing," Revision 0, were used for data acquisition and analysis.

3.1.2 The examinations, equipment, and personnel were in compliance with the requirements of the Exelon and Westinghouse Quality Assurance Programs for Inservice Inspection, Byron Station Technical Specification 5.5.9, 1989 Edition of the ASME B&PV Code Sections XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," and V, "Nondestructive Examination," Revision 5 of the EPRI PWR SG Examination Guidelines, and NEI 97-06, "Steam Generator Program Guidelines," Revision 1.

3.1.3 Certification packages for examiners, data analysts, and equipment are available at Byron Station. Table A.1 and Table A.2 lists all personnel who performed, supervised, or evaluated the data during the B2R10 inspection. Table A.3 lists all personnel who performed, supervised, or evaluated the data during the B2F23 inspection.

3.1.4 R/D Tech Incorporated Model TC6700 Remote Data Acquisition Units (RDAUs) with ANSER Versions 01.2.2 (B2F23/B2R10) and ANSER Version 0.1.2.4 (B2R10) software was used to acquire the eddy current data. Analysis was performed with Westinghouse ANSER-ANALYSIS Version 01.2.3 (B2F23) and ANSER-ANALYSIS Version 01.2.4 (B2R10) computer software.

3.1.5 The bobbin coil examinations were performed with a 0.610 inch diameter bobbin coil eddy current probe. For low row U-Bend tubing, a 0.590 inch diameter bobbin probe was utilized to achieve the complete full tube examination in tubes where there was difficulty using the 0.610 inch diameter probe.

3.1.6 The top of tubesheet, baffle plate expansion, dent/ding and special interest rotating coil examinations were performed with a 0.610 inch diameter three coil rotating plus-point probe that contains a plus-point coil, a 0.115 inch diameter pancake coil and a 0.080 inch diameter high frequency pancake coil.

3.1.7 The row 1 and row 2 rotating coil examinations were performed with a 0.580 inch diameter high frequency plus-point coil probe.

3.2 Personnel

3.2.1 The personnel who performed the eddy current inspections were qualified to Level I and Level II in accordance with SNT-TC-1A, 1984 Edition. The Level I personnel performed the inspections under the direct supervision of Level II or Level III personnel.

3.2.2 The personnel who performed the SG eddy current data analysis were qualified to a minimum of Level II, with special analysis training (i.e., Level IIA) in accordance with the 1984 Edition of SNT-TC-1A and Article IV-2000 of ASME Section XI, 1989 Edition.

3.2.3 All SG eddy current data analysts were qualified in accordance with EPRI Appendix G for Qualified Data Analysts (QDAs). In addition, all data analysts were trained and tested in accordance with a site specific performance demonstration program in both the bobbin coil and plus-point inspection data analysis. Resolution analysts were also trained and tested specifically for the performance of data resolution. All analysts were required to achieve a score of 80% or greater on both the written and practical examinations prior to analyzing data.

3.2.4 All SG eddy current data acquisition personnel were trained and tested in accordance with a site specific performance demonstration program. The data acquisition operators were required to achieve a written test score of 80% or greater prior to acquiring data.

3.2.5 The SG eddy current analysis was subject to two independent analyses. Primary analysis of all data was performed by Westinghouse, Anatec, NDE Technologies, Verner & James and Quantum. An independent company, CoreStar, performed the secondary analysis. Discrepancies between the two parties required Level III concurrence between both parties for the final resolution.

3.2.6 An independent SG eddy current Level III QDA who was not part of the resolution team was employed to serve as a process control reviewer, in accordance with EPRI Guidelines, Section 6.3.3.4. The Independent Level III QDA randomly sampled the data to ensure the resolution process was properly performed and that the field calls were properly reported. The Independent Level III QDA also provided data acquisition oversight to ensure that the data collection process was in compliance with appropriate procedures, that all essential variables were set in accordance with the applicable Examination Technique Specification Sheet (ETSS) and to provide a data quality check of acquired data. The Independent Level III QDA reported directly to the Exelon Level III inspector.

3.2.7 Personnel from Westinghouse performed data acquisition.

4.0 EXAMINATION TECHNIQUE AND EXAMINATION SCOPE

All eddy current examination techniques used are qualified in accordance with Appendix H of the EPRI PWR SG Examination Guidelines. Each examination technique was evaluated to be applicable to the tubing and conditions of the Byron Unit 2 SGs.

4.1 Examination Techniques

4.1.1 The bobbin coil examinations were performed with a 0.610 inch diameter bobbin coil eddy current probe described in Section 3.1.5. For low row U-Bend regions where there was difficulty using the 0.610 inch diameter probe, a 0.590 inch diameter bobbin probe was utilized to achieve the complete full tube inspection. Nominal probe inspection speed was 40 inches per second for rows 5 through 49 and 24 inches per second for rows 1 through 4 U-bend region. Sufficient sampling rates were used to maintain a minimum of 30 samples per inch. The bobbin coil probes were operated at frequencies of 550 kHz, 300 kHz, 130 kHz, and 20 kHz operating in the differential and absolute test modes. In addition, suppression mixes were used to enhance the inspection. These mixes were as follows: 550/130 kHz differential mix, and a 300/130 kHz absolute mix for flat wear and a 300/130 kHz absolute mix for tapered wear.

4.1.2 The plus-point examinations at top of tubesheet and pre-heater baffle plate expansion transition regions, dents/dings and special interest locations were performed with a 0.610 inch diameter three coil plus-point eddy current probe described in Section 3.1.6. Nominal probe speed was 0.5 inches per second and 0.15 inches per second for the examination of dent and dings. A sampling rate was used to maintain a minimum of 30 samples per inch in the circumferential direction and 25 samples per inch in the axial direction. The rotating probes were operated at frequencies of 300 kHz, 200 kHz, 100 kHz and 20 kHz. In addition to the four base frequencies, three process channels were used to display axial indications in the positive trace.

4.1.3 The plus-point examinations at row 1 and row 2 U-bend regions were performed with a 0.580 inch diameter plus-point eddy current probe described in Section 3.1.7. Nominal probe speed was 0.15 inches per second. A sampling rate was used to maintain a minimum of 30 samples per inch in the circumferential direction and 25 samples per inch in the axial direction. The rotating probes were operated at frequencies of 400 kHz, 300 kHz, 150 kHz and 20 kHz. In addition to the four base frequencies, three process channels were used to display axial indications in the positive trace.

4.1.4 Non-quantifiable bobbin coil indications identified by an "I-Code" were examined with a three coil rotating plus-point probe that contains a plus-point coil, a 0.115 inch diameter pancake coil and a 0.080 inch diameter high frequency pancake coil. Nominal probe speed was 0.5 inches per second with a sampling rate to maintain a minimum of 30 samples per inch. The probe was operated at frequencies of 300 kHz, 200 kHz, 100 kHz and 20 kHz. Three process channels were created to display axial indications in a positive trace.

4.1.5 The eddy current calibration standards used for the bobbin coil and plus-point inspections met the requirements of Section 6.2.7 of the EPRI PWR Steam Generator Examination Guidelines, Revision 5 and Sections V and XI of the ASME B&PV Code, 1989 Edition.

4.1.6 The SG eddy current examination techniques used during this inspection were equivalent to the EPRI Appendix H techniques listed in Table 4.1. Each Examination Technique Specification Sheet (ETSS) was evaluated and determined to be applicable to the site conditions.

Table 4.1
EPRI Appendix H Techniques

EPRI Technique ETSS	Probe	Description
96004.3	Bobbin	AVB/Pre-Heater/TSP/Foreign Object Wear, Freespan Flaws
96007.1	Bobbin	Tube Support Plate Outer Diameter Stress Corrosion Cracking
96511.1	Plus-Point	Low Row U-bend Primary Water Stress Corrosion Cracking
96703.1	Plus-Point	Dent/Ding Primary Water Stress Corrosion Cracking
96910.1	Plus-Point	Foreign Object Wear/Freespan Flaw Sizing
21409.1	Plus-Point	Sludge Pile Outer Diameter Stress Corrosion Cracking
21410.1	Plus-Point	Expansion Transition Circumferential Stress Corrosion Cracking
20510.1	Plus-Point	Expansion Transition Axial Outer Diameter Stress Corrosion Cracking
20511.1	Plus-Point	Expansion Transition Axial Primary Water Stress Corrosion Cracking

4.2 Steam Generator Inspection Scope

4.2.1 (B2R10) 100% of the tubes in all SGs were inspected full length, tube end to tube end, with a bobbin coil probe described in Section 4.1.1 above.

4.2.2 (B2R10) 75% of the tubes in all SGs were inspected at the hot leg top of tubesheet expansion transition region (+/- 3 inches) with a plus-point probe described in Section 4.1.2.

4.2.3 (B2R10) 75% of the tubes in all SGs were inspected in the Row 1 and Row 2 U-bend region with a plus-point probe described in Section 4.1.3.

4.2.4 (B2R10) 25% of the pre-heater baffle plate expansion transitions (+/- 2 inches) in SGs B/C/D were inspected with a plus-point probe described in Section 4.1.2.

4.2.5 (B2R10) 75% of the hot leg dents/dings that were greater than 5.0 volts were inspected with a plus-point probe described in Section 4.1.2. The SG distribution of the inspection was 25% in SGs A/B and 100% in SGs C/D.

4.2.6 (B2R10) Diagnostic examinations were conducted on non-quantifiable indications that were detected by the bobbin coil examination. Diagnostic examinations were also conducted on tubes in the vicinity of potential foreign objects in order to determine the extent of tubes potentially

affected by the objects. These examinations were performed with the three coil plus-point probe described in Section 4.1.4 above. A total of 141 tubes were inspected as a result of these diagnostic examinations.

4.2.7 (B2F23) A total of 8 tubes in SG C were inspected with a bobbin coil probe described in Section 4.1.1. The leaking tube R43-C23 was inspected full-length and the surrounding 7 tubes were tested from the cold leg tube end through to the 03C tube support plate.

4.2.8 (B2F23) A total of 11 tubes in SG C were inspected with a plus-point probe described in Section 4.1.4. Eight (8) tubes were inspected at the 02C and 03C tube support plates (+/- 2 inches) and three (3) tubes were inspected at the 02C tube support plate (+/- 2 inches).

4.2.9 Figures A.2 through A.24 contain tube sheet maps indicating the tube inspections that were performed during B2R10.

4.2.10 Figure A.25 and A.26 contains the tubesheet map indicating the tube inspections that were performed during B2F23.

4.3 Recording of Examination Data

The raw eddy current data and analysis results were recorded on optical disks. The data was then loaded into the Westinghouse Eddy Current Data Management System, "ST2000," version 1.09.01 (B2F23) and version 1.10.00 (B2R10). This system was used to track the proper examination of all tubes and it was also used to generate the final eddy current report summaries.

4.4 Witness and Verification of Examination

Eddy current inspections were witnessed and/or verified by the Authorized Nuclear Inservice Inspectors, Mr. Jeff Hendricks and Mr. Robert Ward, of the Hartford Steam Boiler of CT of Hartford Connecticut, Chicago Branch, 2443 Warrenville Road, Suite 500, Lisle, Illinois 60532-9871.

The B2R10 ASME Form NIS-1, "Owners Report for Inservice Inspections," is contained in Attachment A.6. The B2F23 ASME Form NIS-1 is contained in Attachment A.7.

5.0 EXAMINATION RESULTS

5.1 Indications Found

5.1.1 Anti-Vibration Bar (AVB) Wear – Tube degradation was found by the B2R10 bobbin coil examination in the U-bend region due to fretting of the Anti-Vibration Bars on the tube. A total of 757 indications in 453 tubes were reported. The EPRI Appendix H bobbin coil examination technique 96004.3 was utilized in this inspection for the depth sizing of AVB wear. The largest indication found was 40% through wall (TW) and was found in two tubes. Both tubes were subsequently plugged. Table 5.1.1 provides a summary of AVB Wear degradation.

Table 5.1.1
B2R10 AVB Wear Summary

	SG A		SG B		SG C		SG D	
	Tubes	Ind.	Tubes	Ind.	Tubes	Ind.	Tubes	Ind.
<20% TW*	66	77	98	121	80	101	52	59
20-39% TW*	76	116	112	170	50	61	39	50
>= 40% TW*	2	2	0	0	0	0	0	0
TOTAL *	111	195	165	291	102	162	75	109

* Tubes may contain indications in more than one category.

5.1.2 Foreign Object Wear – Tube degradation was found in eleven (11) tubes that was attributed to foreign object wear during the B2R10 inspection. The indications ranged from 3% TW to 32% TW. The EPRI Appendix H plus point qualified examination technique 96910.1 was applied to size the indications. All 11 tubes that contained indications of foreign object wear were removed from service. No indications of foreign object wear were left inservice. All foreign objects that caused the tube damage were removed from the SGs. Tube R34-C59 in SG C contained an indication at the top of the tubesheet that was indicative of a foreign object wear scar. Visual inspection did not identify any foreign objects in the vicinity. The location of this tube is in a region where the object may have been removed by the sludge lancing operation. Table 5.1.2a provides a summary of the tubes that contained foreign object wear during B2R10.

A forced outage B2F23 was a result of a 75 gallon per day primary to secondary leakage in the 2C SG. Pressure testing and eddy current identified the leak source as foreign object wear in tube R43-C23 at the second TSP on the cold leg side (TSP 02C). Subsequent eddy current examinations identified two additional adjacent tubes that contained foreign object wear. The foreign object that caused this damage was removed from the SG during B2R10. Table 5.1.2b provides a summary of the tubes that contained foreign object wear during B2F23.

Table 5.1.2a
B2R10 Foreign Object Wear Summary

SG	Row	Column	Depth	Location
2C	17	25	22%	01H+0.42"
2C	22	30	4%	01H+0.42"
2C	23	30	30%	01H+0.46"
2C	23	31	11%	01H+0.41"
2C	24	33	3%	01H+0.41"
2C	25	33	15%	01H+0.47"
2C	34	59	8%	TSH+0.12"
2C	49	34	24%	02C+0.41"
2D	35	99	32%	02C+0.48"
2D	36	99	14%	02C+0.41"
2D	37	99	8%	02C+1.09"

Table 5.1.2b
B2F23 Foreign Object Wear

SG	Row	Column	Depth	Location
2C	43	22	37%	02C+0.49"
2C	43	23	71%*	02C+0.53"
2C	43	24	11%/13%	02C+0.46"/+0.85"

* Tube confirmed by pressure testing to contain a through-wall indication.

5.1.3 Pre-Heater Wear – Fifteen (15) tubes were found that contained signals of pre-heater wear. The depth of the pre-heater wear ranged from 6% TW to 19% TW as measured by the EPRI Appendix H qualified bobbin coil examination technique 96004.3. Tube R48-C36 in SG C was preventatively removed from service. Table 5.1.3 below provides a summary of tubes that contain Pre-Heater wear.

TABLE 5.1.3
B2R10 Pre-heater Wear Summary

SG	Row	Column	Depth	Location
2B	47	75	6%	02C+0.31"
2B	48	50	13%	07C+0.34"
2B	48	53	12%	07C+0.40"
2B	48	54	8%	07C+0.34"
2B	48	55	10%	07C+0.40"
2B	48	59	12%	07C-0.46"
2B	49	50	15%	07C+0.25"
2B	49	53	16%	07C+0.15"
2B	49	63	9%	07C+0.40"
2C	48	36	17%	02C+0.5"
2C	49	48	14%	07C-0.5"
2C	49	62	18%	07C-0.08"
2C	49	63	19%	07C-0.05"
2C	49	73	7%	07C-0.41"
2D	49	52	8%	07C+0.36"

5.2 Other Results

5.2.1 Visual Inspection of Installed Tube Plugs – All previously installed welded plugs and previously installed mechanical plugs were visually inspected for signs of degradation and leakage. A total of 25 welded plugs and 491 mechanical plugs were visually inspected. In addition, all plugs installed during this outage (i.e., 28 mechanical plugs in 14 tubes) were also visually inspected and the installation parameters were reviewed for acceptable installation. No anomalies were found.

5.2.2 Attachments A.1 through A.5 contain tube lists with axial elevations of all imperfections that contain measurable through wall depth that were found during the B2R10 eddy current inspection.

5.2.3 Attachment A.5 contains a tube list with axial elevations of all imperfections that contain measurable through wall depth that were found during the B2F23 eddy current inspection.

6.0 REPAIR SUMMARY

Repairs were conducted in accordance with ASME Section XI, 1989 Edition. All tube plugging was performed by Westinghouse using Inconel-690 mechanical tube plugs. All repairs were performed in accordance with approved Westinghouse procedures. Table 6.1 depicts the repairs conducted during B2R10. Table 6.2 lists the tube locations that were repaired in B2R10. Table 6.3 depicts the repairs conducted during B2F23. Table 6.4 lists the tube locations that were repaired in B2F23.

TABLE 6.1
Summary of B2R10 Tube Plugging

REPAIRS PERFORMED	SG A	SG B	SG C	SG D	TOTAL
Tubes Plugged*	2	0	9	3	14
Tubes Stabilized	0	0	0	0	0

* Includes number of tubes stabilized and plugged.

TABLE 6.2
SG Tubes Repaired During B2R10

SG	Row	Col.	Repair	Depth	Volts	Channel	Phase	Location
2A	40	21	Plug	40%	4.68	P2	0	AV2+0.00"
2A	41	93	Plug	40%	4.87	P2	0	AV2+0.00"
2C	17	25	Plug	22%	0.32	P4	0	01H+0.42"
2C	22	30	Plug	4%	0.08	P4	0	01H+0.42"
2C	23	30	Plug	30%	0.43	P4	0	01H+0.46"
2C	23	31	Plug	11%	0.15	P4	0	01H+0.41"
2C	24	33	Plug	3%	0.07	P4	0	01H+0.41"
2C	25	33	Plug	15%	0.21	P4	0	01H+0.47"
2C	34	59	Plug	8%	0.11	P4	0	TSH+0.12"
2C	48	36	Plug	17%	0.99	P3	0	02C+0.5"
2C	49	34	Plug	24%	0.34	P4	0	02C+0.41"
2D	35	99	Plug	32%	0.5	P4	0	02C+0.48"
2D	36	99	Plug	14%	0.16	P4	0	02C+0.41"
2D	37	99	Plug	19%	0.23	P4	0	02C+1.09"

P4 – Suppression Mix 300/100 kHz – Plus-Point
P3 – Suppression Mix 300/130 kHz – Bobbin Absolute – TSP Wear Scar
P2 – Suppression Mix 300/130 kHz – Bobbin Absolute – AVB Wear Scar

TABLE 6.3
Summary of B2F23 Tube Plugging

REPAIRS PERFORMED	SG A	SG B	SG C	SG D	TOTAL
Tubes Plugged*	0	0	3	0	3
Tubes Stabilized	0	0	3	0	3

* Includes number of tubes stabilized and plugged.

TABLE 6.4
SG Tubes Repaired During B2F23

SG	Row	Col.	Repair	Stabilizer	Indication	Volts	Channel	Phase	Location
2C	43	22	Plug	Cold Leg	37%	0.42	P4	0	02C+0.49"
2C	43	23	Plug	Cold Leg	71%*	2.02	P4	0	02C+0.53"
2C	43	24	Plug	Cold Leg	11%	0.07	P4	0	02C+0.46"
					13%	0.08	P4	0	02C+0.85"

* As sized by eddy current. Pressure Testing confirmed flaw to be 100% throughwall.

7.0 DOCUMENTATION

All original optical disks have been provided to Exelon and are maintained at Byron Station. The final data sheets and pertinent tube sheet plots are contained in the Westinghouse Final Outage Reports for Byron Station Unit 2, B2R10 and B2F23. The reports are also maintained at Byron Station.

8.0 FIGURES/TABLES/ATTACHMENTS

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Attachment A.1 SG A ASME Form NIS-BB for B2R10
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Attachment A.6 B2R10 ASME Form NIS-1, "Owners Report for Inservice Inspections"
Attachment A.7 B2F23 ASME Form NIS-1, "Owners Report for Inservice Inspections"

TABLE A.1
B2R10
DATA ACQUISITION PERSONNEL CERTIFICATIONS

No.	Name	Company	Level	QDA (Y/N)
1	Bradley, GD	Westinghouse	II	N
2	Chiplasky, GA	Westinghouse	II	N
3	Conner, MG	Westinghouse	II	N
4	Dvorak, DJ	Spec/TMP	I	N
5	Estel, JW	Westinghouse	II	N
6	Evering, DP	Westinghouse	II	N
7	Groh, TA	Westinghouse	II	N
8	Hopper, JM	Westinghouse	II	N
9	Mains, PJ	Westinghouse	II	N
10	Mardell, DM	Westinghouse	II	N
11	McElhinny, JW	Westinghouse	II	N
12	Provencher, C	Westinghouse	II	N
13	Reif, DL	Westinghouse	II	N
14	Schachte, DM	Westinghouse	II	N
15	Schaffner, KR	Spec/TMP	I	N
16	Scott, AW	Westinghouse	II	N
17	Scott, KL	Westinghouse	II	N
18	Shipley, EB	Westinghouse	II	N
19	Smith, AO	Westinghouse	II	N
20	Smith, DR	Westinghouse	II	N
21	Stitt, AL	Westinghouse	II	N
22	Tedrick, JE	Westinghouse	I	N
23	Whalen, DJ	Westinghouse	II	N
24	Young, JA	Westinghouse	II	N

TABLE A.2
B2R10
DATA ANALYSIS PERSONNEL CERTIFICATIONS
(Page 1 of 2)

No.	Name	Company	Level	QDA (Y/N)
1	Anderson, DA	NDE Tech	IIA	Y
2	Beehner	Westinghouse	III	Y
3	Bowser, GC	CoreStar	III	Y
4	Breuel, K	Verner & James	IIIA	Y
5	Brown, ME	NDE Tech	IIIA	Y
6	Causby, GW	CoreStar	IIIA	Y
7	Croyle, RJ	CoreStar	III	Y
8	DeLaPintiere, L	Anatec	III	Y
9	Ethridge, GJ	NDE Tech	IIIA	Y
10	Herold, MJ	V & J	IIA	Y
11	Himmelspach, R*	Anatec	III	Y
12	Hover, L	Verner & James	IIIA	Y
13	Humphrey, RA	CoreStar	III	Y
14	Ingenthron, GJ	V & J	IIA	Y
15	Ingraham, RH	NDE Tech	IIIA	Y
16	Ives, DH	CoreStar	III	Y
17	Jerina, FJ	NDE Tech	IIIA	Y
18	Johnson, JR	CoreStar	IIA	Y
19	Kirk, MB	CoreStar	III	Y
20	Lewis, CL	NDE Tech	IIA	Y
21	Lohner, ET	NDE Tech	IIIA	Y
22	Maben, DE	Anatec	III	Y
23	Martin, AP	CoreStar	IIA	Y
24	McChesney, WD	CoreStar	III	Y
25	Miller, HN	CoreStar	III	Y
26	Overly, ES	CoreStar	IIA	Y
27	Pocratsky, RJ	Westinghouse	III	Y
28	Popovich, RA	Westinghouse	III	Y
29	Prentice, RV	Quantum	IIA	Y
30	Radovanic, JI	Anatec	III	Y
31	Raper, LJ	Anatec	III	Y
32	Richmond, MA	NDE Tech	IIIA	Y
33	Roberts, CJ	Anatec	IIA	Y
34	Robertson, RR	CoreStar	IIA	Y
35	Rogers, GF	Quantum	III	Y
36	Seutter, AE	CoreStar	IIA	Y
37	Sheldon, JT	NDE Tech	IIIA	Y
38	Smith, JS	CoreStar	IIA	Y
39	Spake, CD	CoreStar	III	Y
40	Stach, GJ	CoreStar	IIA	Y

**** Independent Qualified Data Analyst***

TABLE A.2
B2R10
DATA ANALYSIS PERSONNEL CERTIFICATIONS
(Page 2 of 2)

No.	Name	Company	Level	QDA (Y/N)
41	Stokke, TF	NDE Tech	IIIA	Y
42	Stump, TJ	CoreStar	III	Y
43	Thompson, KA	NDE Tech	IIA	Y
44	Thompson, VA	NDE Tech	IIIA	Y
45	Thulien, TA	CoreStar	III	Y
46	Tobin, RJ	Westinghouse	III	Y
47	Traves, DJ	CoreStar	IIA	Y
48	Turner, DG	CoreStar	IIA	Y
49	Visconti, CG	CoreStar	IIA	Y
50	Welch, LC	V & J	IIIA	Y
51	Wieber, JA	Anatec	IIA	Y
52	Williamson, LR	Anatec	III	Y
53	Zevchak, JJ	CoreStar	IIA	Y

TABLE A.3
B2F23
DATA ANALYSIS/ACQUISITION PERSONNEL CERTIFICATIONS

AN - Analysis AQ – Acquisition

No.	Name	Company	Level	Crew	QDA (Y/N)
1	Akerlind, Bruce	NDE Tech	III	AN	Y
2	Barnes, Robert*	Anatec	III	AN	Y
3	Bowser, Craig	Corestar	III	AN	Y
4	Bradley, George	West.	II	AQ	N
5	Case, John	NDE Tech	III	AN	Y
6	Croyle, Rodney	Corestar	III	AN	Y
7	Dvorak, Douglas	Spec	I	AQ	N
8	Ethridge, Gary	NDE Tech	III	AN	Y
9	Gootz, Timothy	West.	III	AN	Y
10	Mains, Phillip	West.	II	AQ	N
11	Nelson, David	NDE Tech	III	AN	Y
12	Popovich, Roy	West.	III	AN	Y
13	Richmond, Mark	NDE Tech	III	AN	Y
14	Scott, Allen	West.	II	AQ	N
15	Skirpan, James	NDE Tech	IIA	AN	Y
16	Smith, Anthony	West.	II	AQ	N
17	Spence, William	West.	III	AN	Y
18	Stitt, Alan	West.	II	AQ	N
19	Taylor, Scott	West.	III	AN	Y
20	Terning, Gary	West.	III	AN	Y

**** Independent Qualified Data Analyst***

FIGURE A.1
Westinghouse Model D-5 Tube Support Configuration

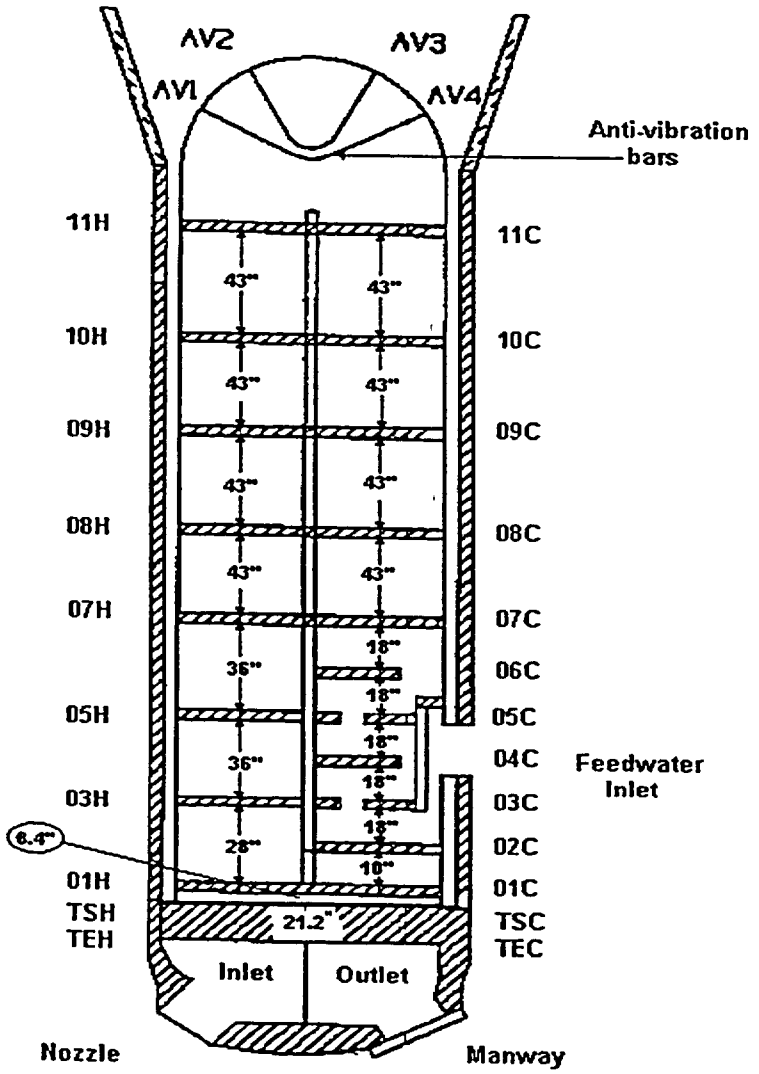


Figure A.2 B2R10 SG A Cold Leg Bobbin Coil Inspection Scope

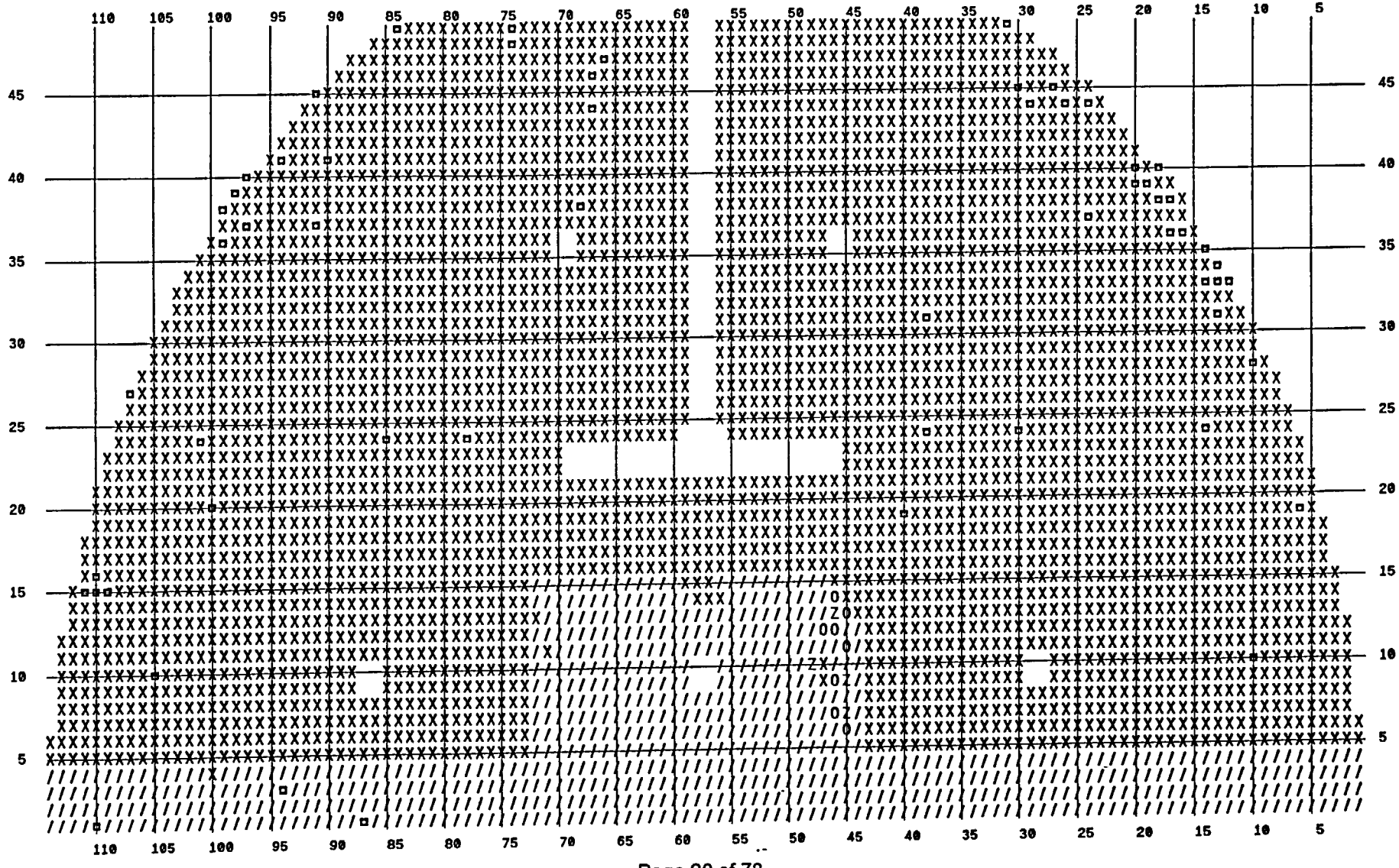
X 3769 TESTED TEH THROUGH TEC

Z 4 TESTED 09H THROUGH TEC

0 8 TESTED 10H THROUGH TEC

/ 739 TESTED 11H THROUGH TEC

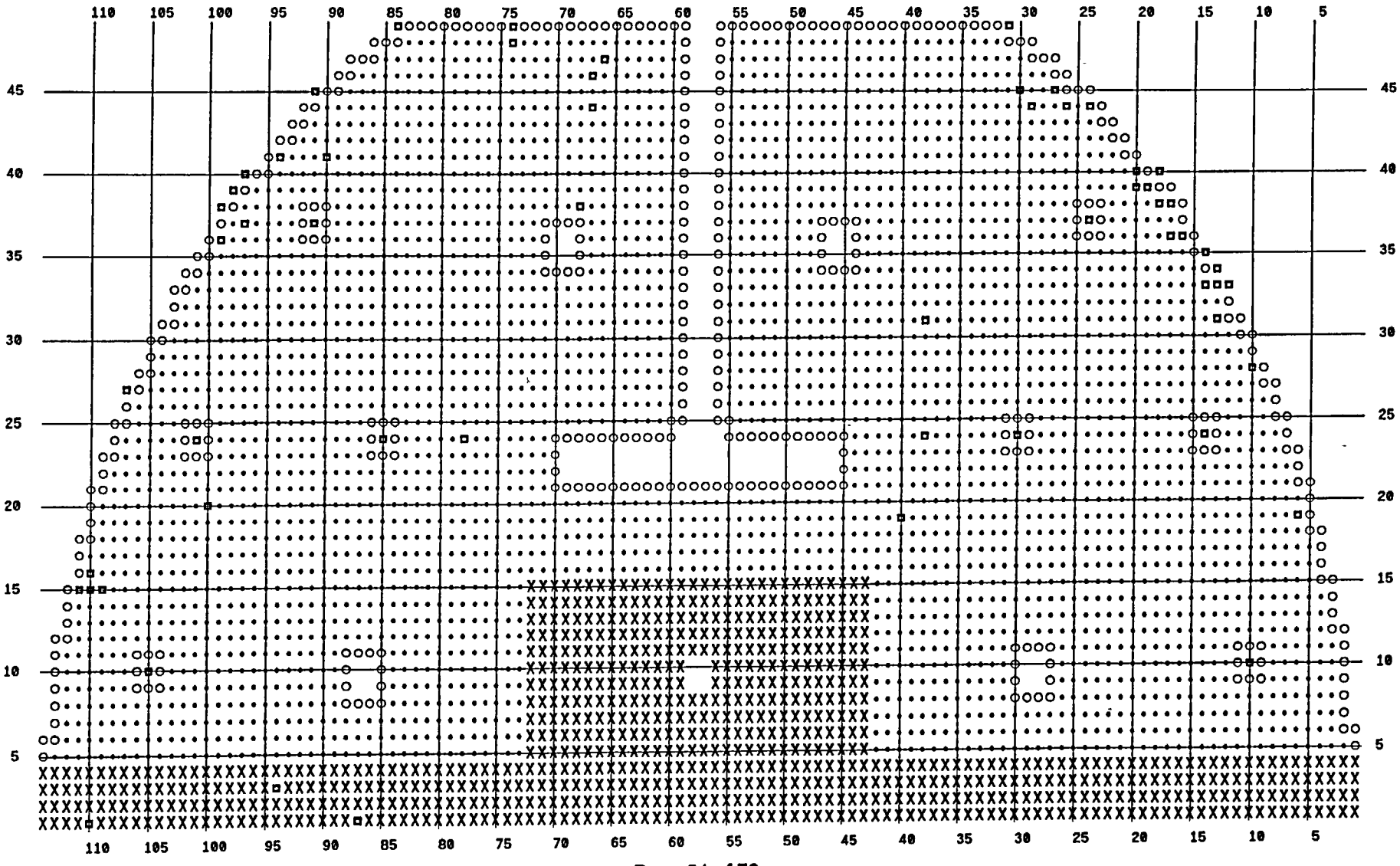
▫ 58 PLUGGED TUBE



X 779 TESTED 11H THROUGH TEH

□ 58 PLUGGED TUBE

Figure A.3 B2R10 SG A Hot Leg Bobbin Coil Inspection Scope



X 3388 TEST TOP OF TUBESHEET WITH +POINT PROBE

▫ 58 PLUGGED TUBE

Figure A.4 B2R10 SG A Hot Leg Top of Tubesheet Plus-Point Inspection Scope

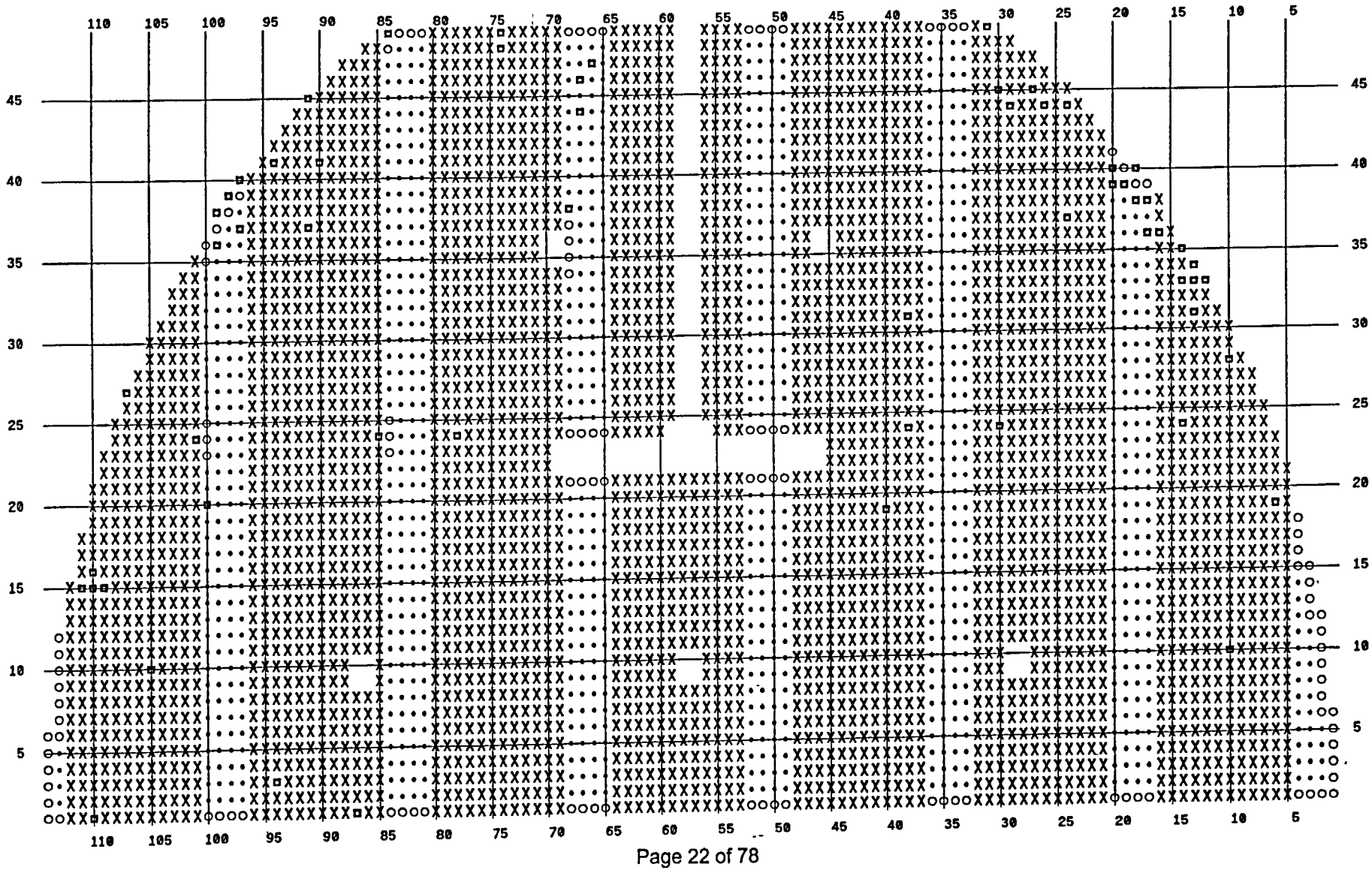


Figure A.5 B2R10 SG A Row 1 & Row 2 Plus-Point Inspection Scope

X 164 TUBE TESTED THROUGH THE U-BEND FROM THE HOT LEG

▫ 58 PLUGGED TUBE

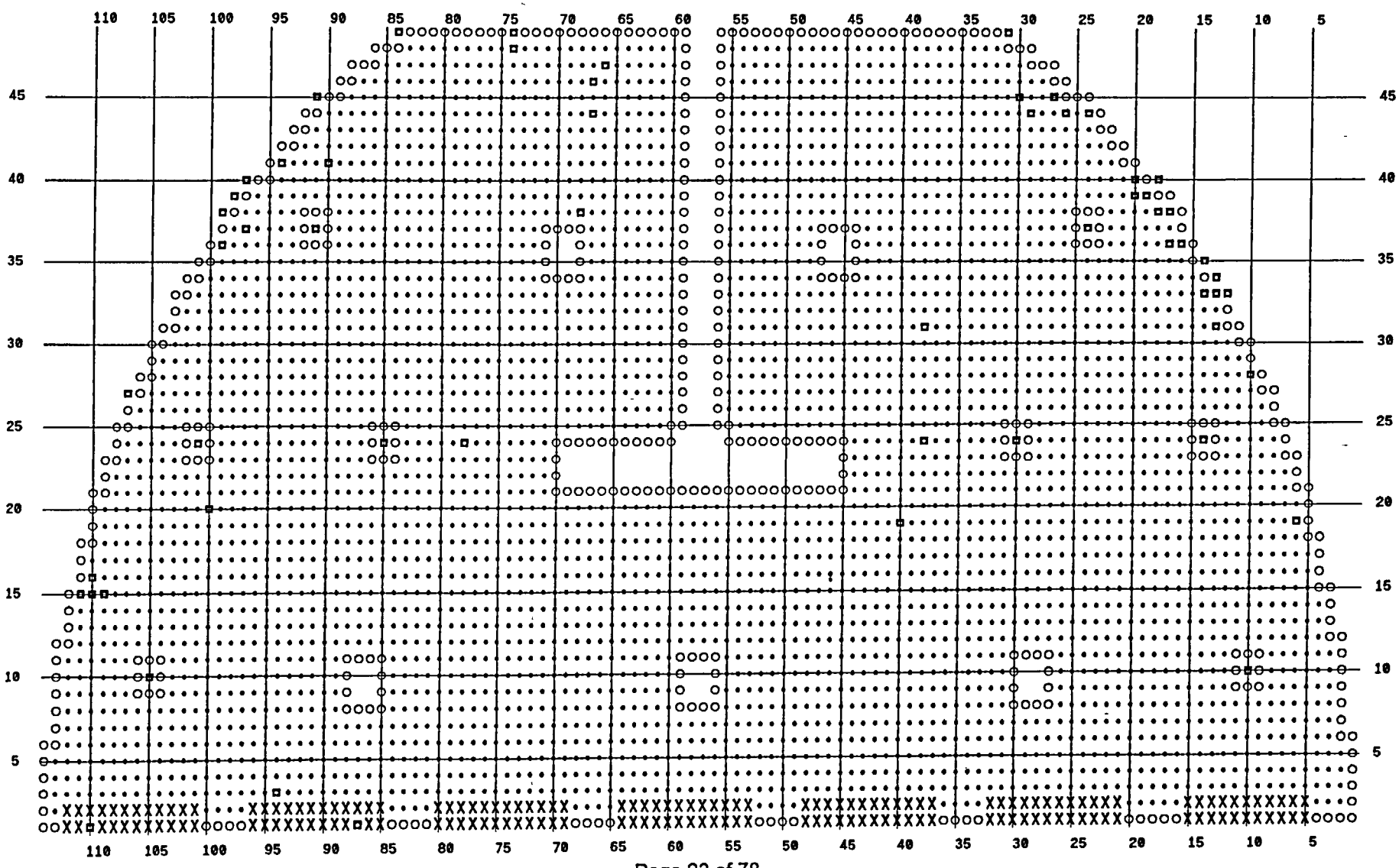
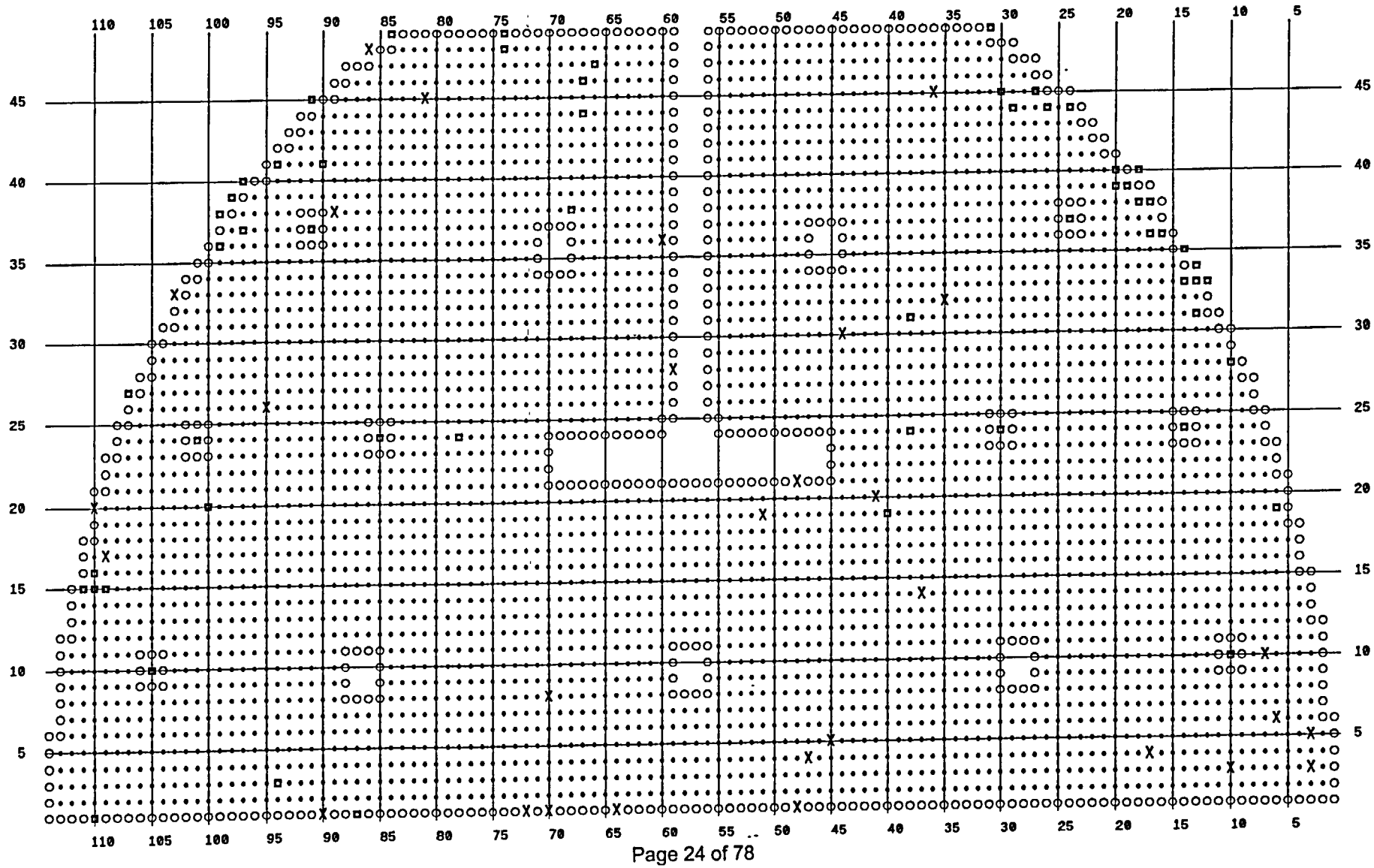


Figure A.6 B2R10 SG A Hot Leg Dent/Ding Plus-Point Inspection Scope

X 30 TUBE WITH DENT AND/OR DING IN THE HOT LEG TO INSPECT WITH +POINT PROBE

▫ 58 PLUGGED TUBE



X 1 TUBE TO TEST 10H THROUGH 11H FOR SPECIAL INTEREST

▫ 58 PLUGGED TUBE

Figure A.7 B2R10 SG A Hot Leg Special Interest Plus-Point Inspection Scope

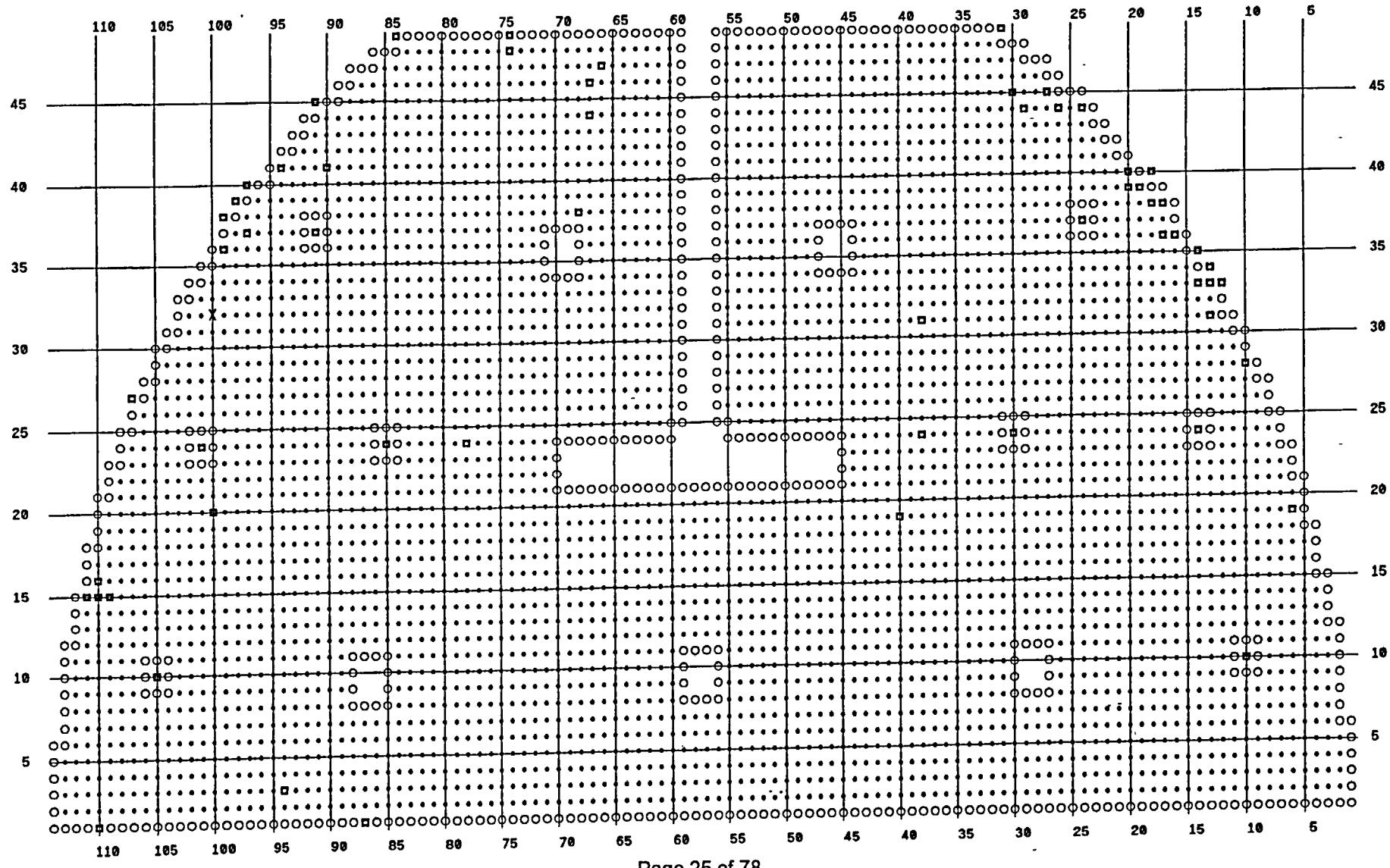


Figure A.8 B2R10 SG A Cold Leg Special Interest Plus-Point Inspection Scope

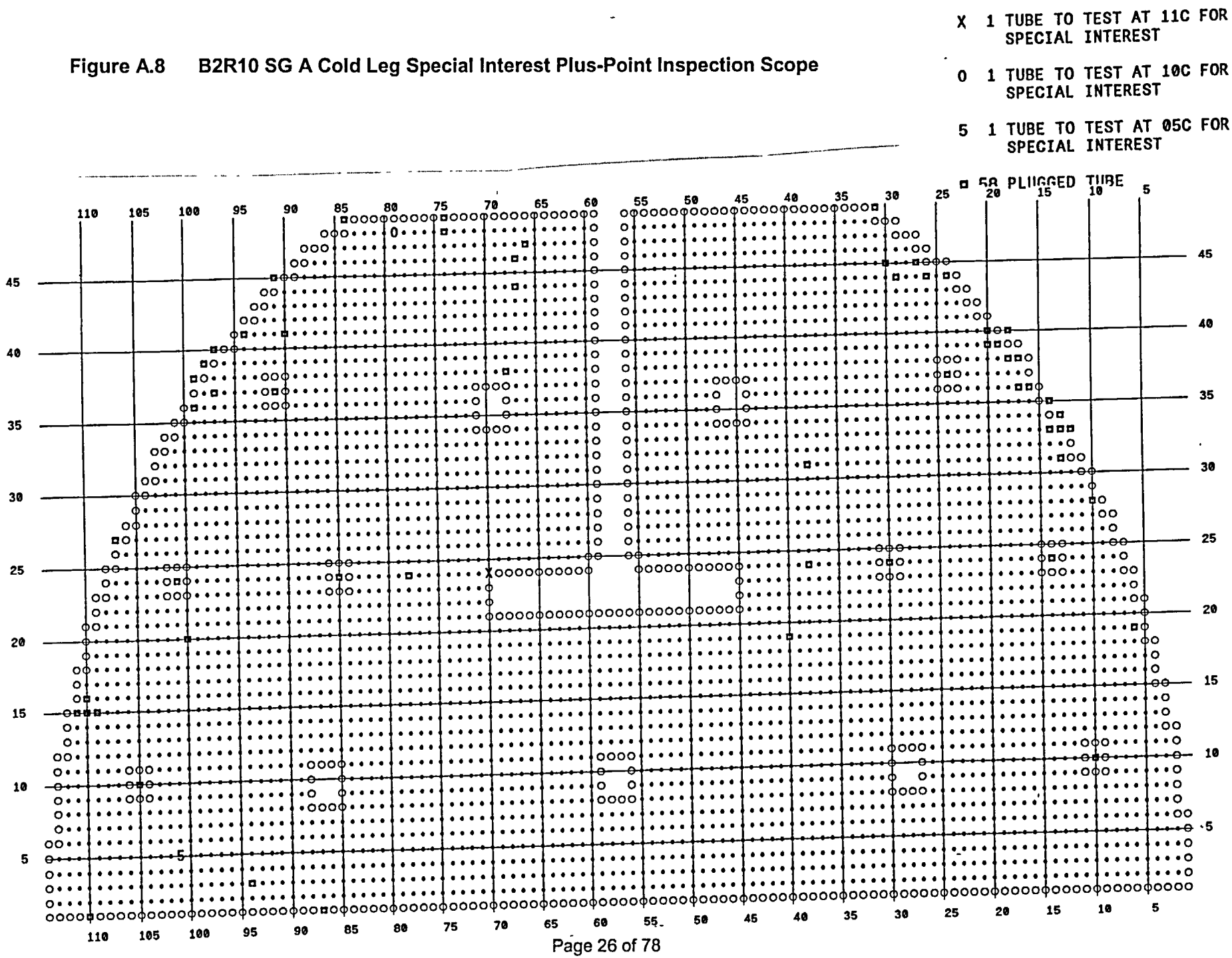


Figure A.9 B2R10 SG B Cold Leg Bobbin Coil Inspection Scope

X 3677 TESTED TEH THROUGH TEC

0 5 TESTED 10H THROUGH TEC

/ 775 TESTED 11H THROUGH TEC

▫ 121 PLUGGED TUBE

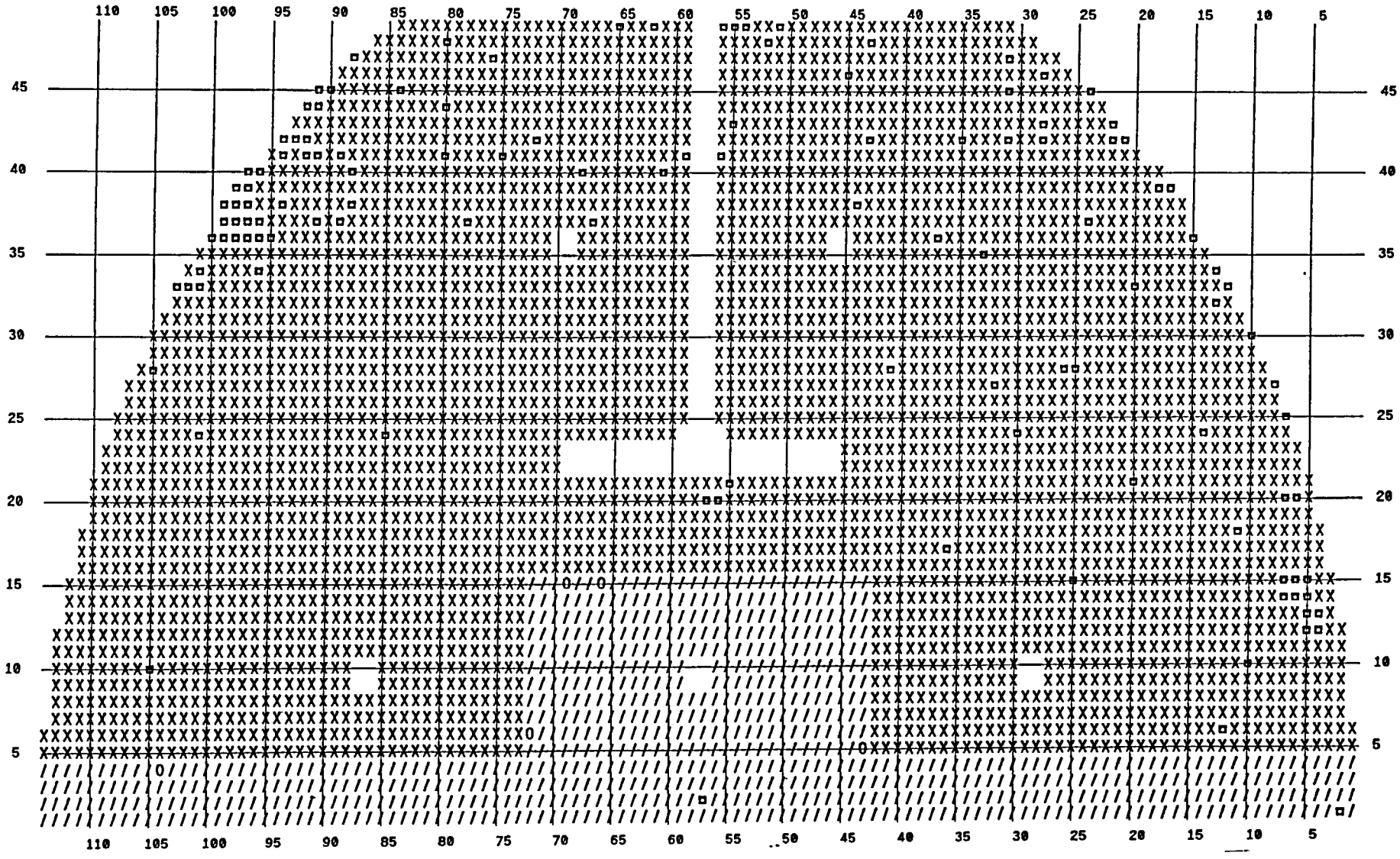
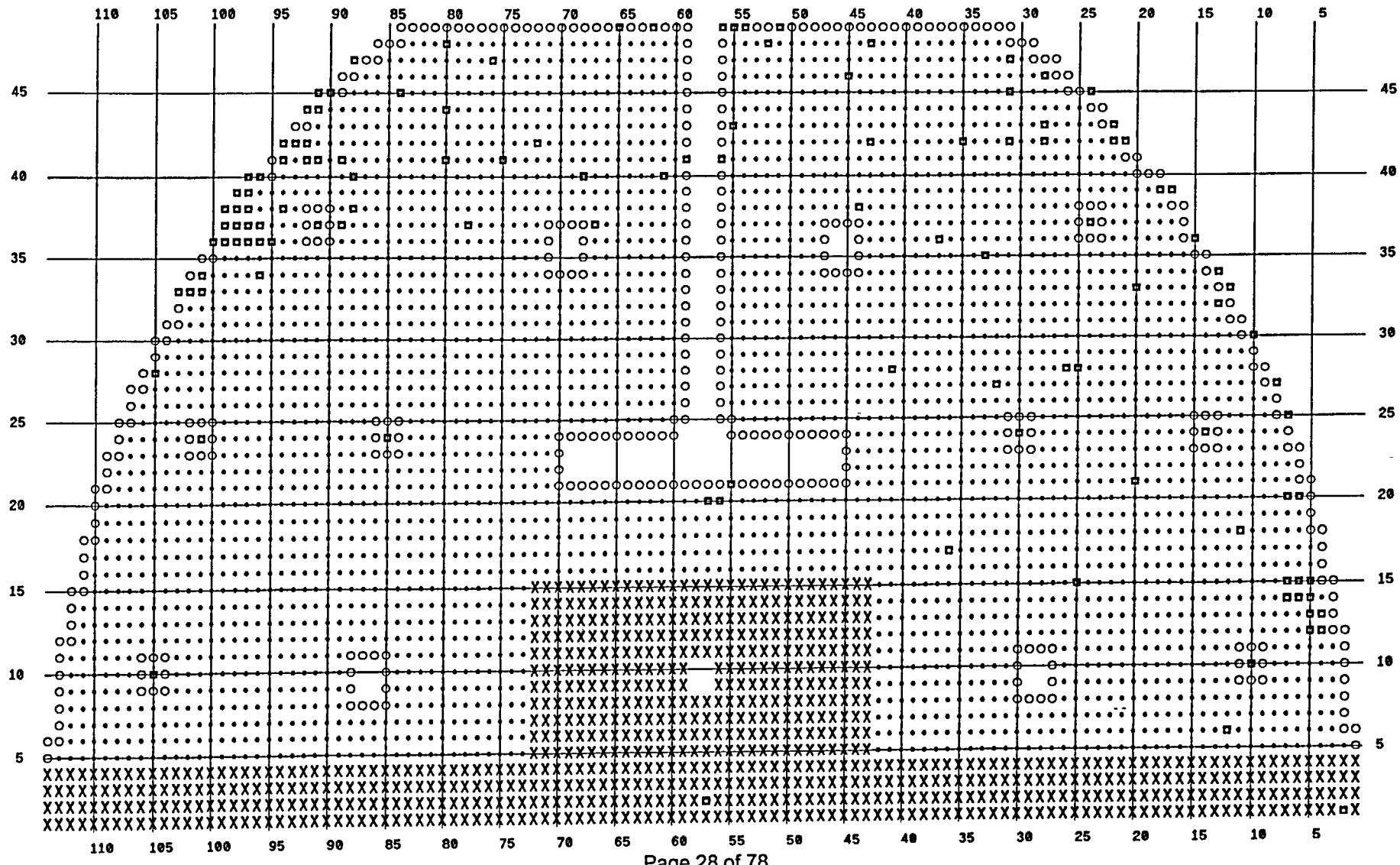


Figure A.10 B2R10 SG B Hot Leg Bobbin Coil Inspection Scope

X 780 TESTED 11H THROUGH TEH

▫ 121 PLUGGED TUBE



X 3336 TEST TOP OF TUBESHEET WITH +POINT PROBE

▫ 121 PLUGGED TUBE

Figure A.11 B2R10 SG B Hot Leg Top of Tubesheet Plus-Point Inspection Scope

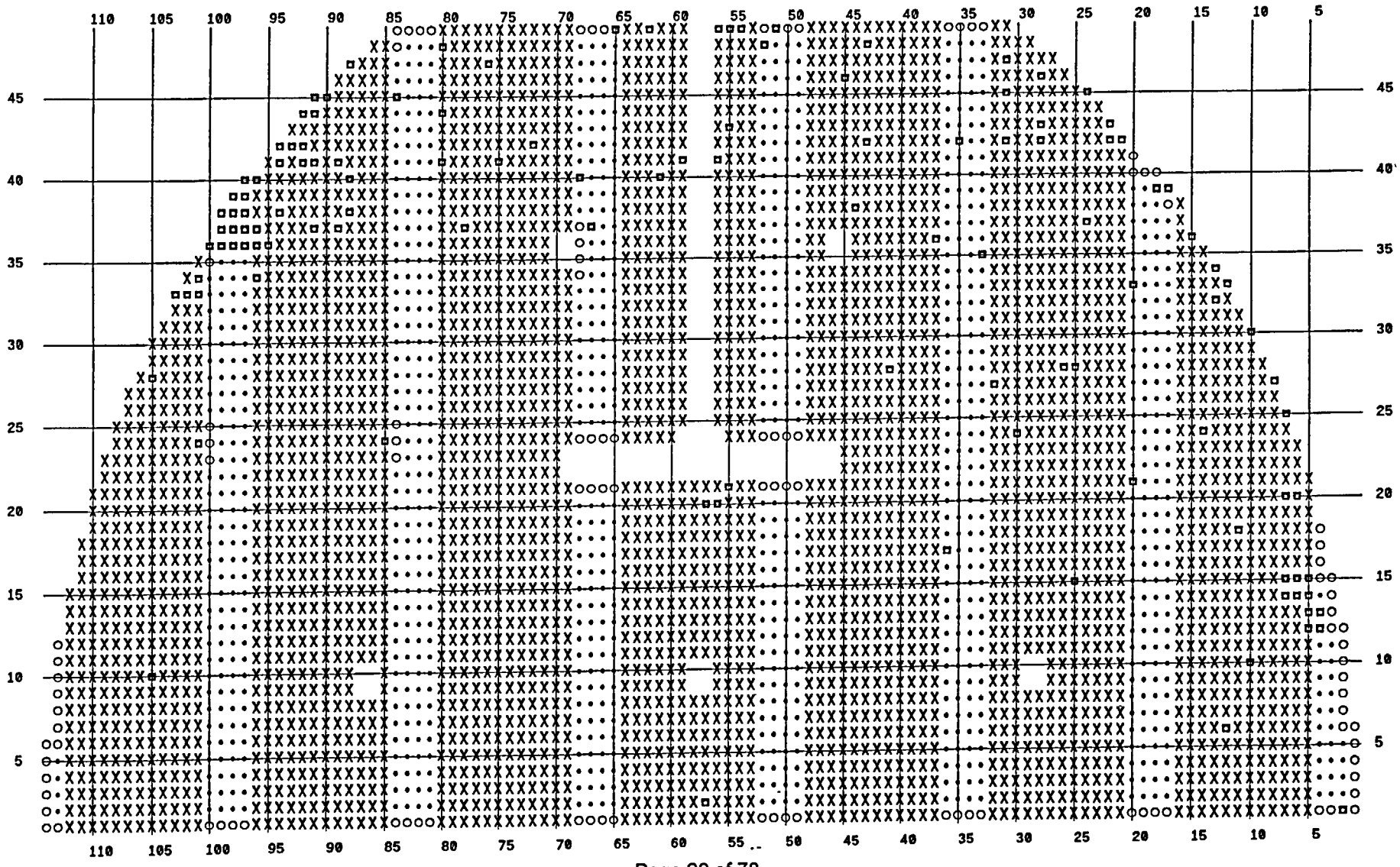


Figure A.12 B2R10 SG B Row 1 & Row 2 Plus-Point Inspection Scope

X 74 TUBE TESTED THROUGH THE U-BEND FROM THE COLD LEG

X 93 TUBE TESTED THROUGH THE U-BEND FROM THE HOT LEG

▫ 121 PLUGGED TUBE

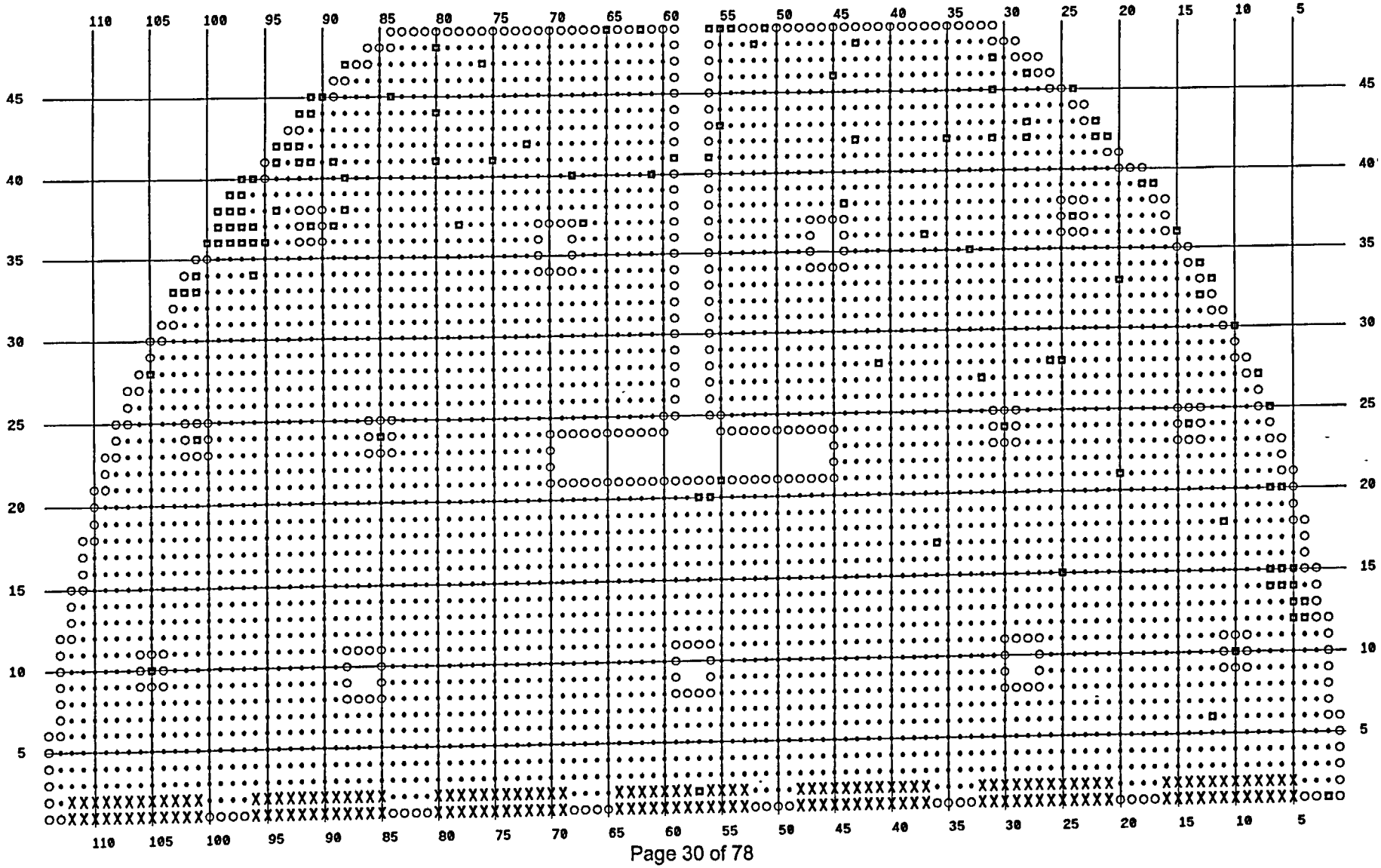


Figure A.13 B2R10 SG B Baffle Plate Expansion Plus-Point Inspection Scope

X 35 TEST 02C AND 03C WITH +POINT PROBE

▫ 121 PLUGGED TUBE

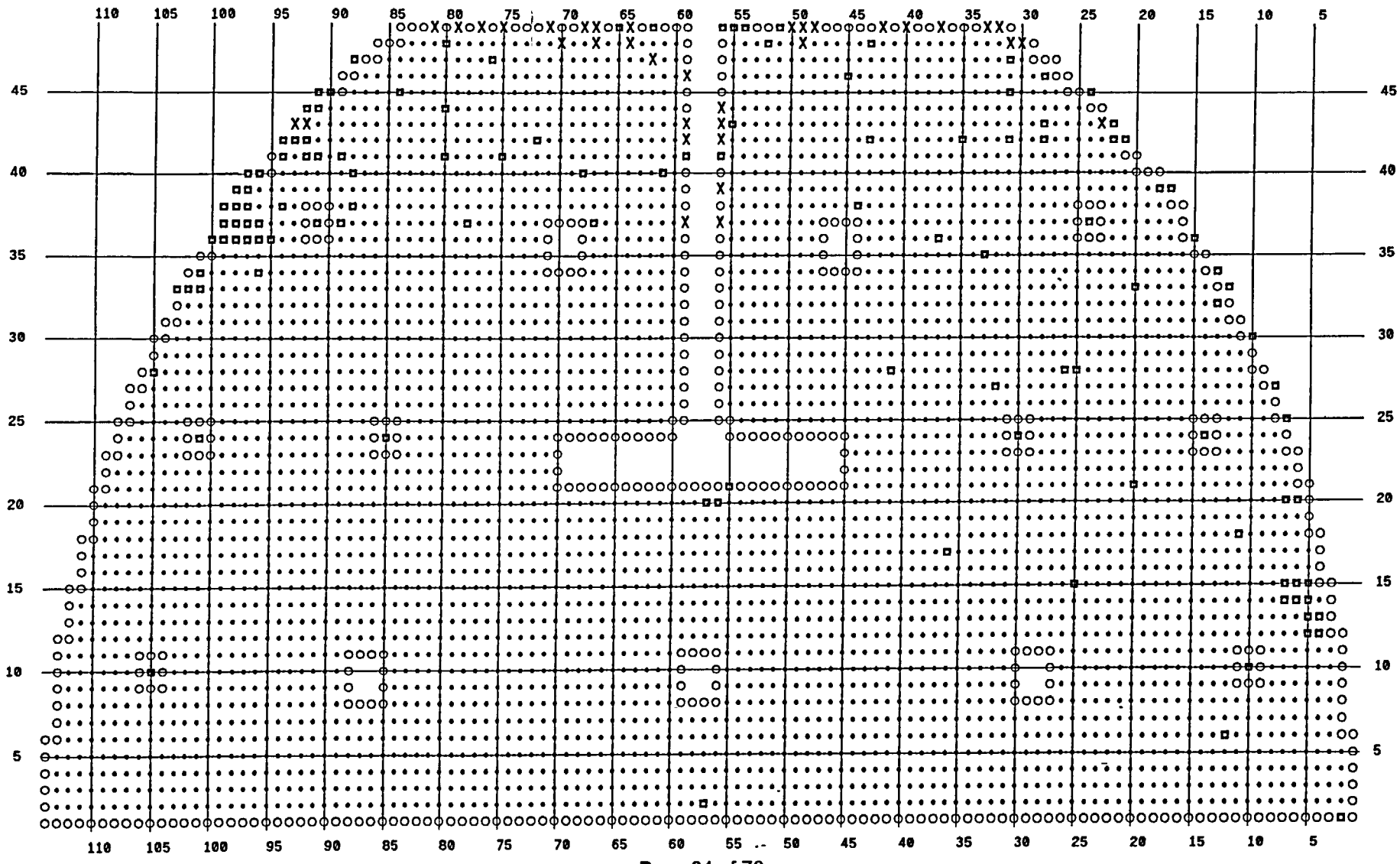
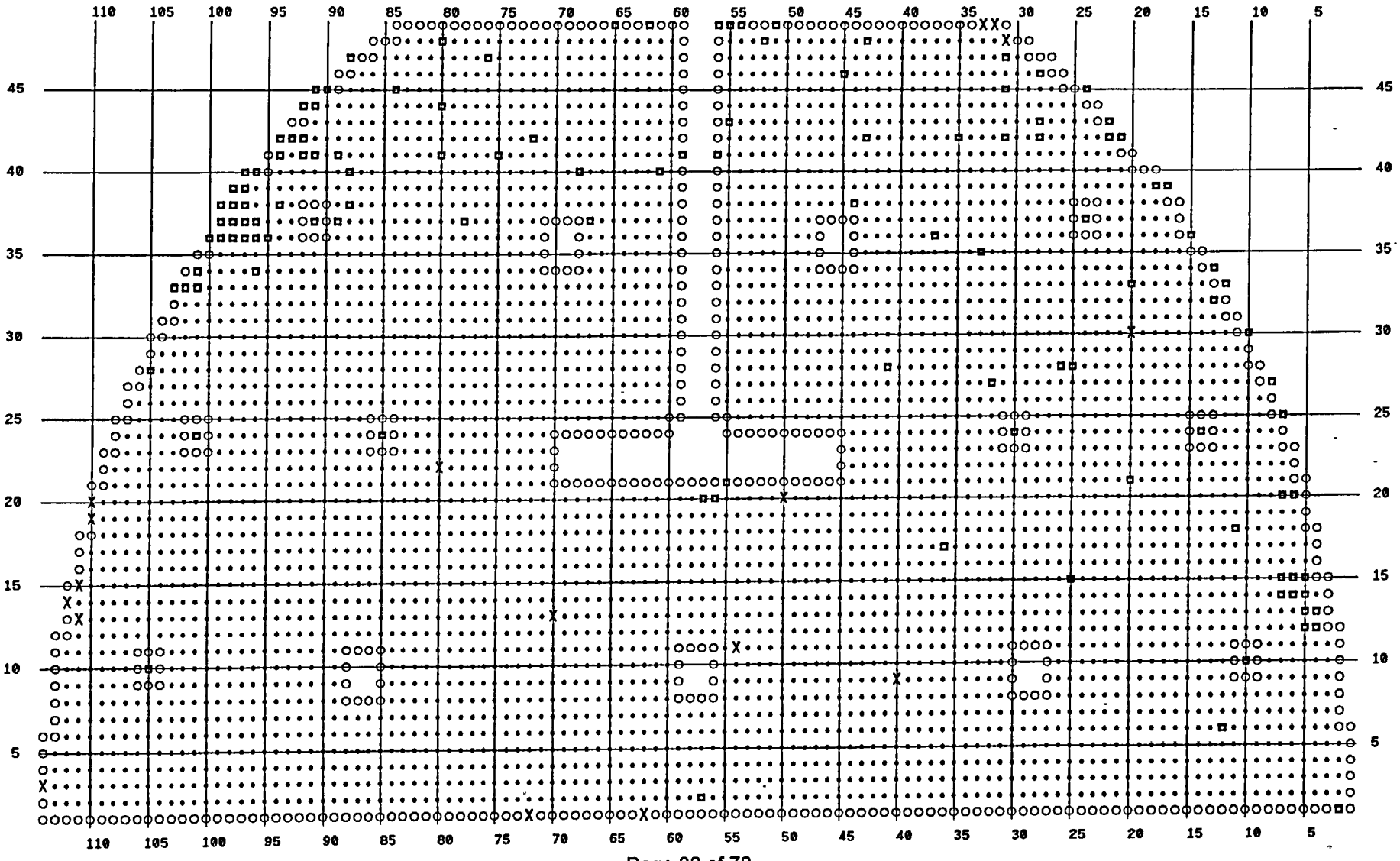


Figure A.14 B2R10 SG B Hot Leg Dent/Ding Plus-Point Inspection Scope

X 17 TUBE WITH DENT AND/OR DING IN THE HOT LEG TO INSPECT WITH +POINT PROBE

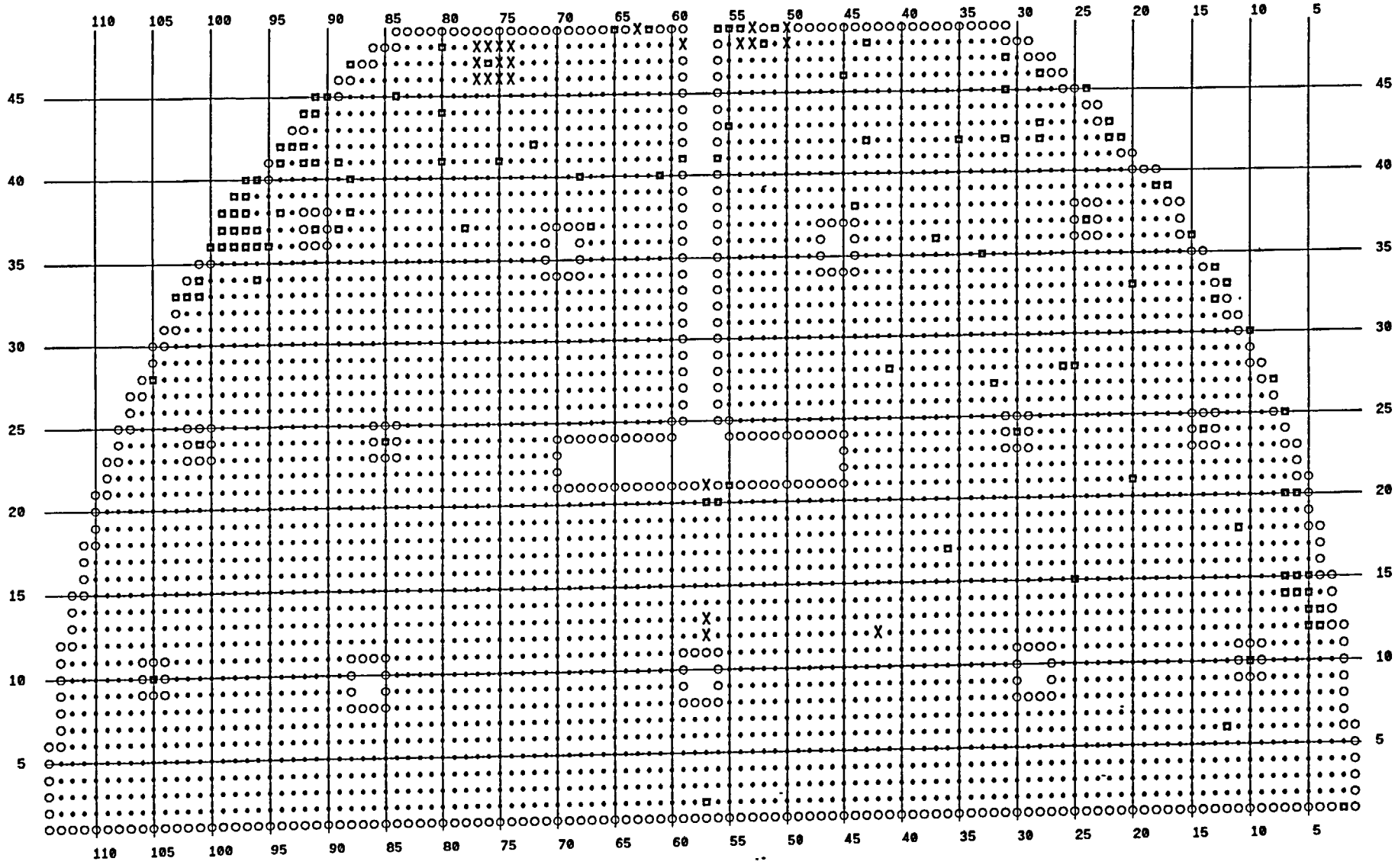
▫ 121 PLUGGED TUBE



X 22 TUBE TO TEST - SEE ATTACHMENT 5

Figure A.15 B2R10 SG B Hot Leg Special Interest Plus-Point Inspection Scope

▫ 121



X 24 TUBE TO TEST - SEE ATTACHMENT 5

□ 121

Figure A.16 B2R10 SG B Cold Leg Special Interest Plus-Point Inspection Scope

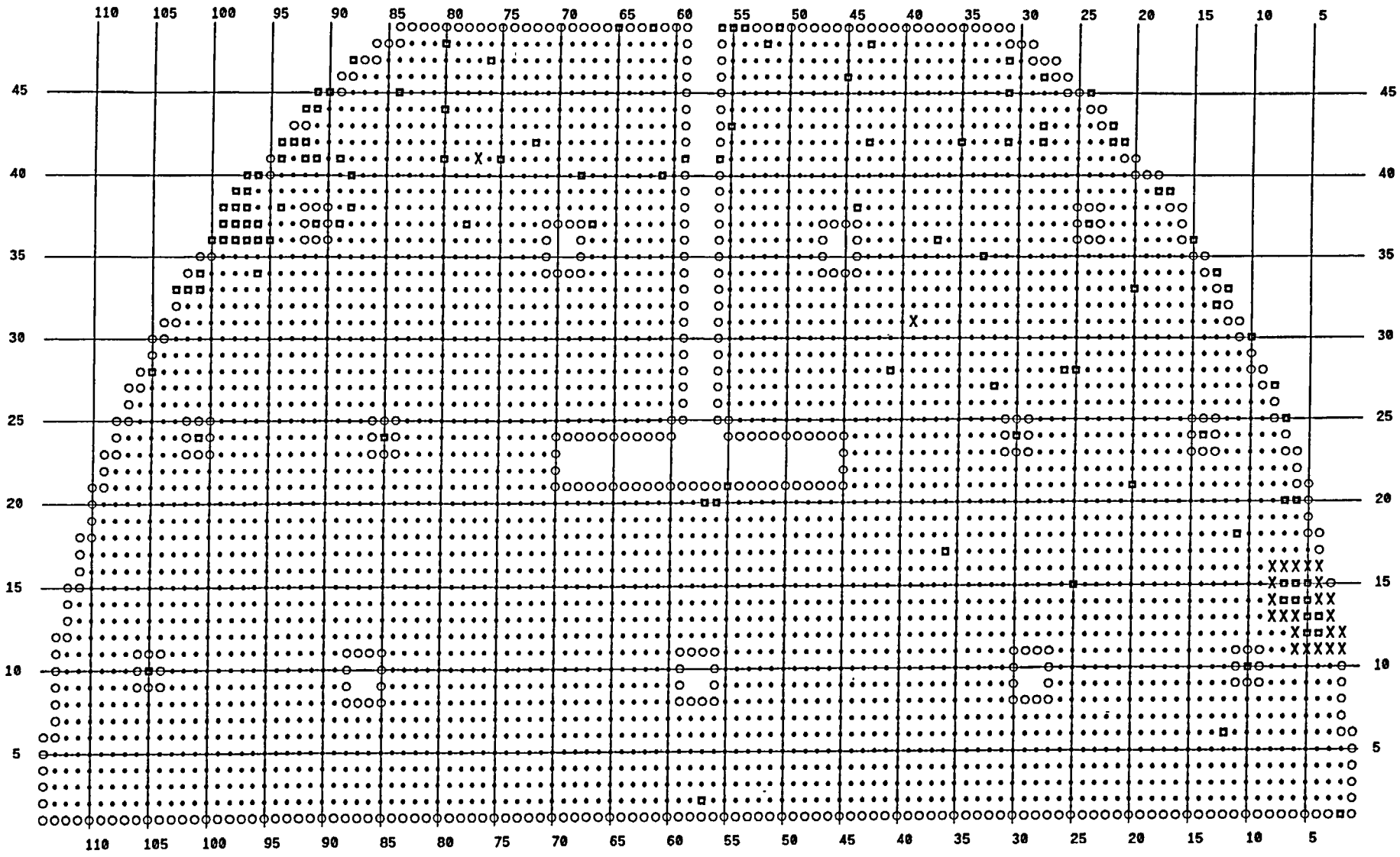


Figure A.17 B2R10 SG C Cold Leg Bobbin Coil Inspection Scope

X 3744 TESTED TEH THROUGH TEC

/ 782 TESTED 10H THROUGH TEC

▫ 52 PLUGGED TUBE

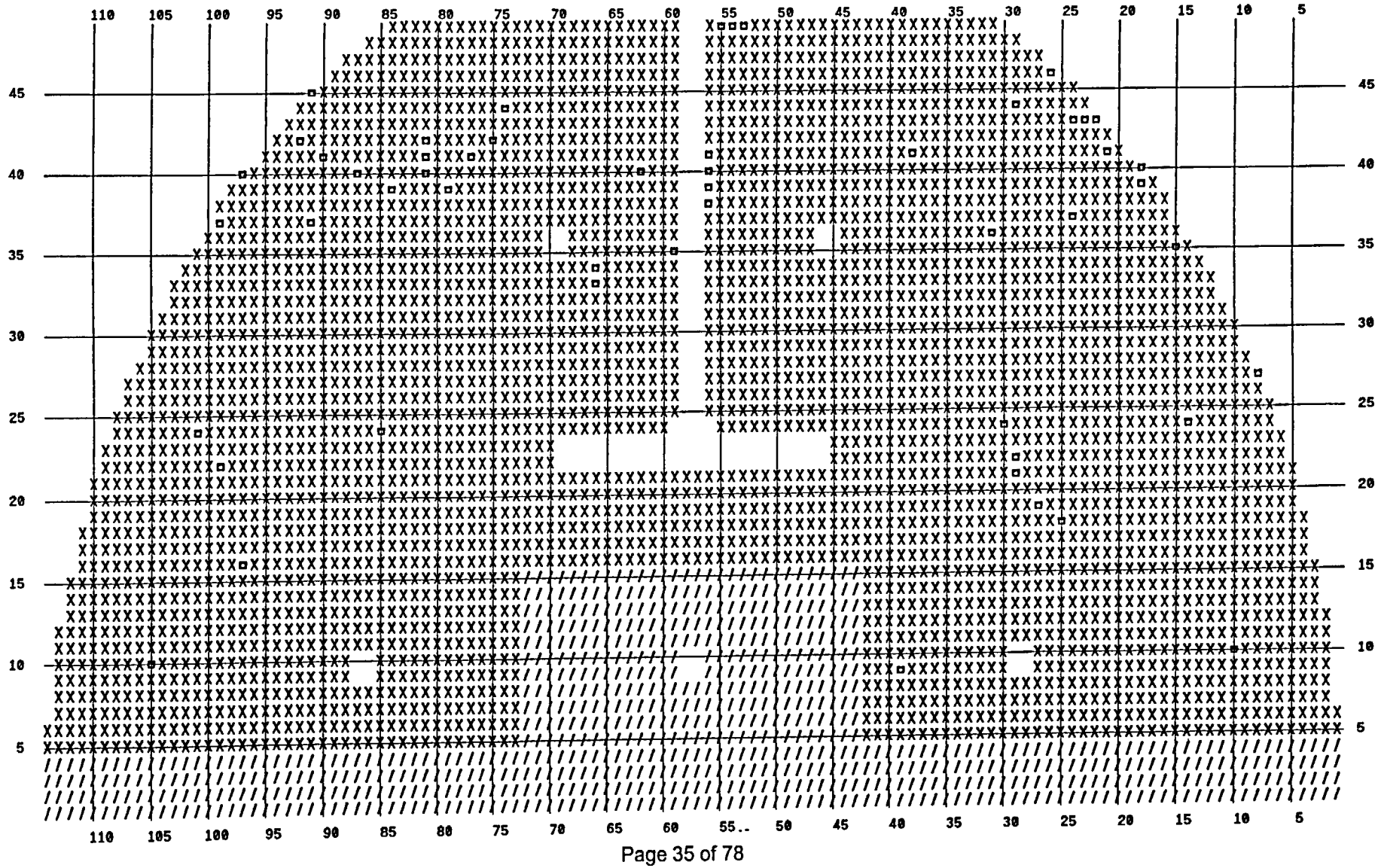


Figure A.18 B2R10 SG C Hot Leg Bobbin Coil Inspection Scope

X 782 TESTED 11H THROUGH TEH

▫ 52 PLUGGED TUBE

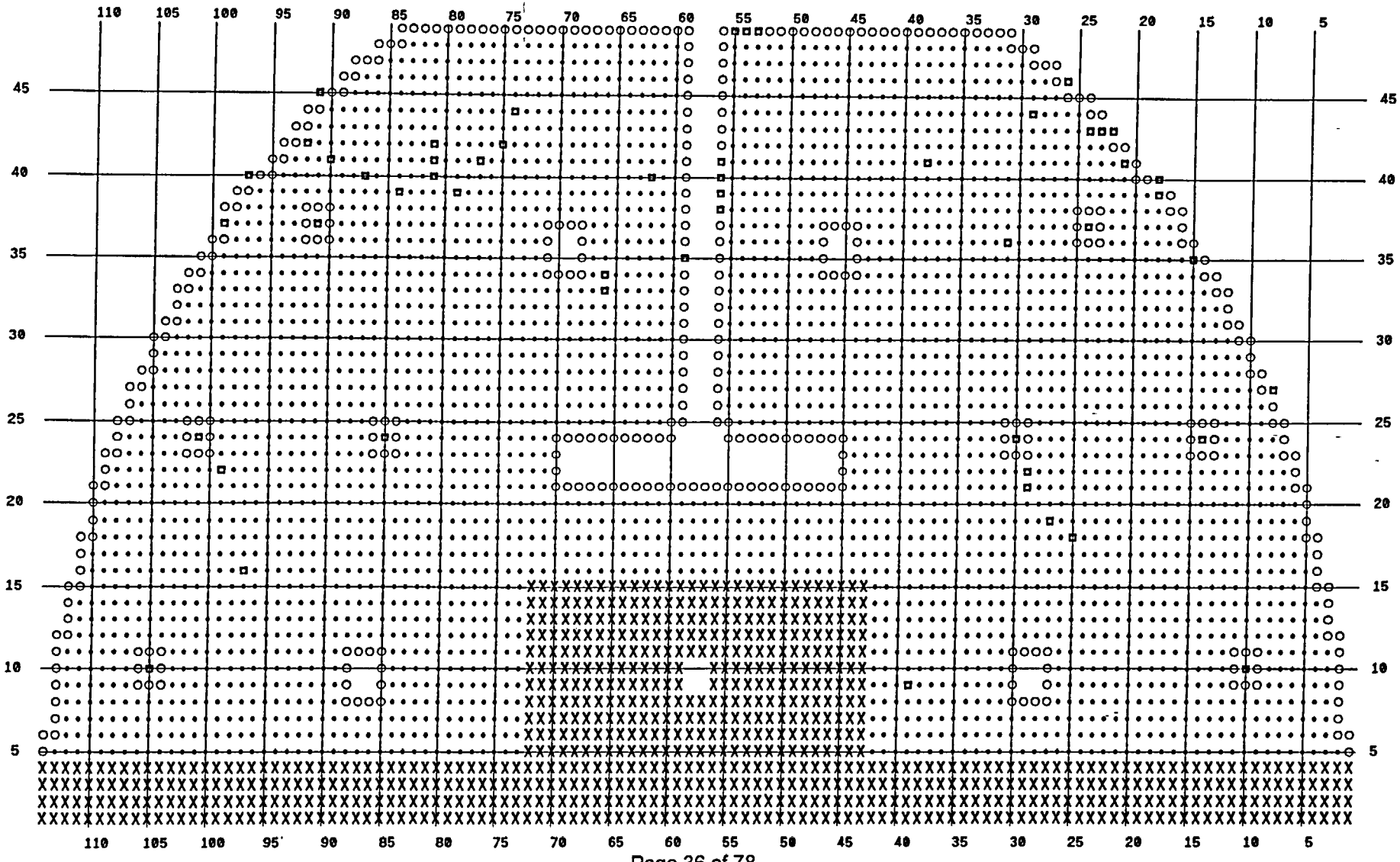


Figure A.19 B2R10 SG C Hot Leg Top of Tubesheet Plus-Point Inspection Scope

X 3388 TEST TOP OF TUBESHEET WITH +POINT PROBE

▫ 52 PLUGGED TUBE

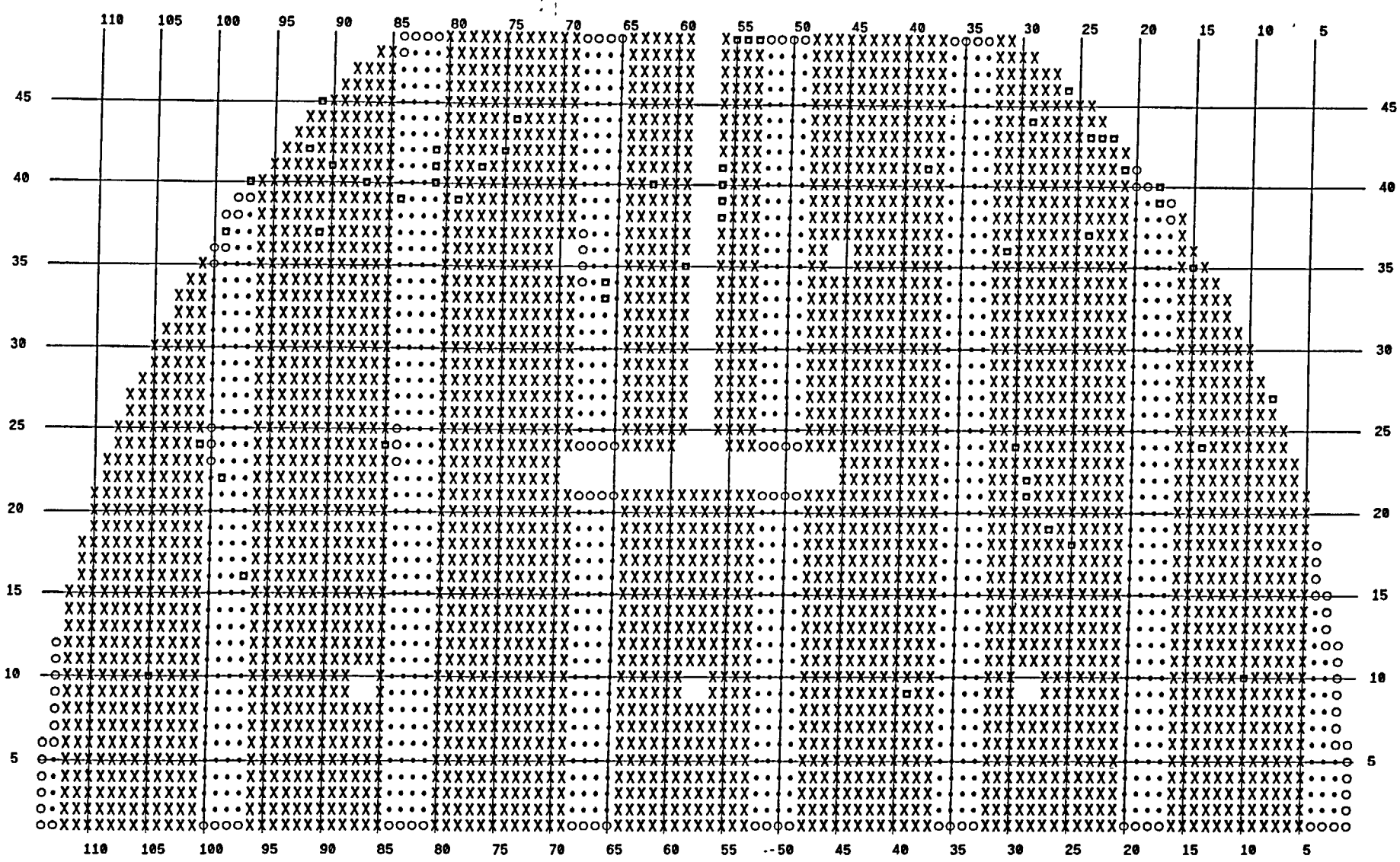


Figure A.20 B2R10 SG C Row 1 & Row 2 Plus-Point Inspection Scope

X 122 TUBE TESTED THROUGH THE U-BEND FROM THE COLD LEG

X 46 TUBE TESTED THROUGH THE U-BEND FROM THE HOT LEG

▫ 52 PLUGGED TUBE

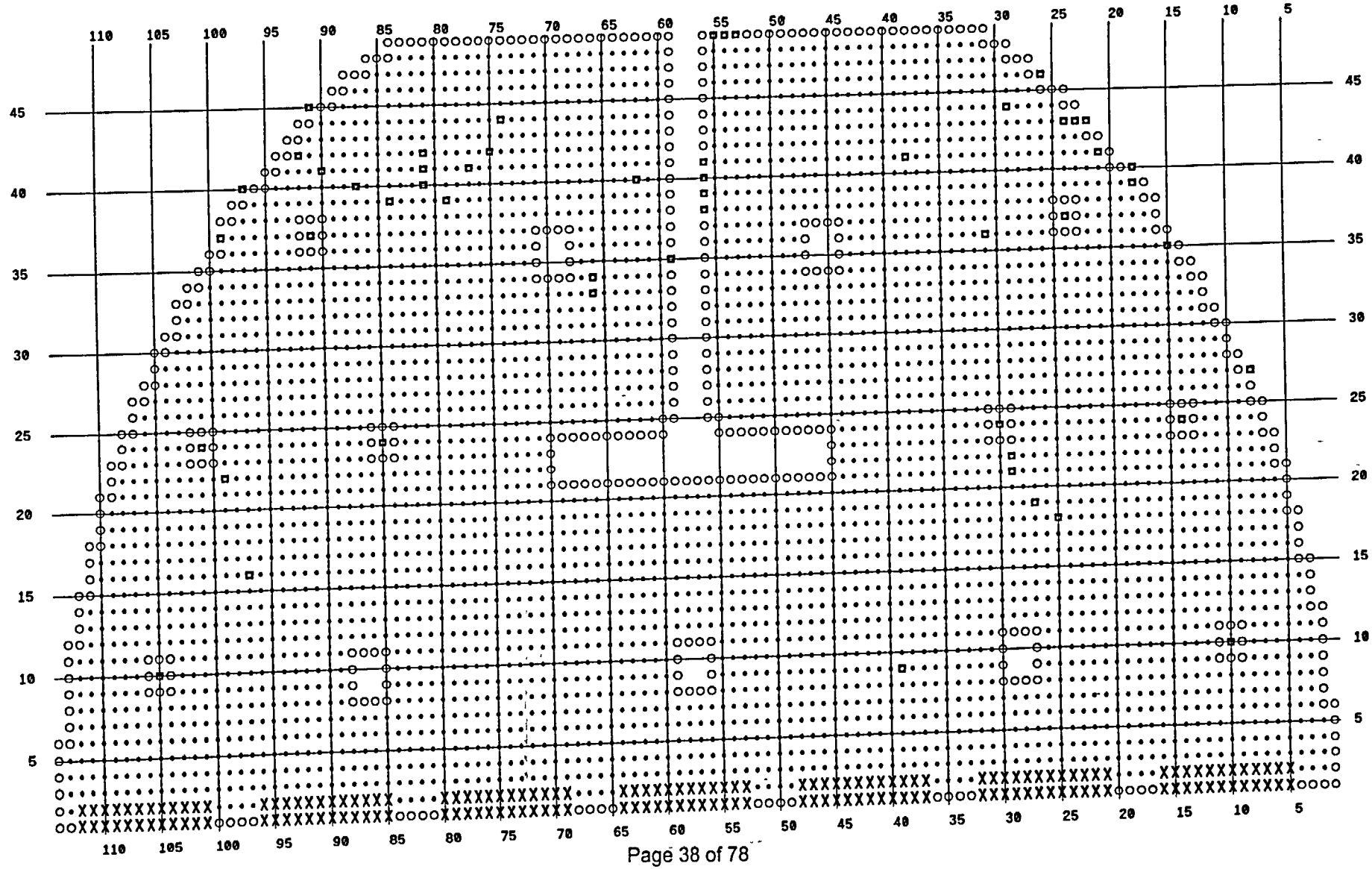


Figure A.21 B2R10 SG C Baffle Plate Expansion Plus-Point Inspection Scope

X 35 TEST 02C AND 03C WITH +POINT PROBE

□ 52 PLUGGED TUBE

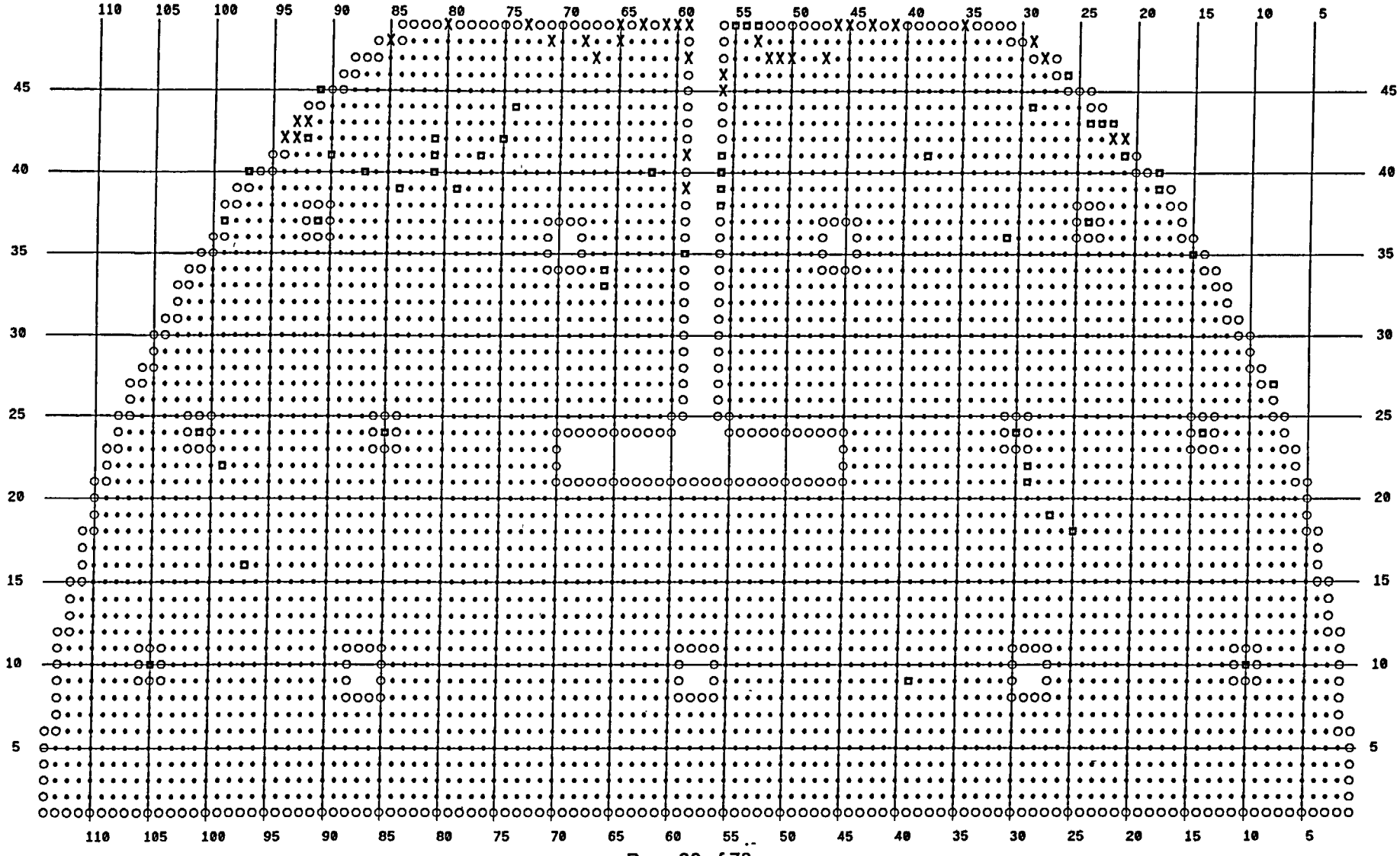


Figure A.22 B2R10 SG C Hot Leg Dent/Ding Plus-Point Inspection Scope

X 180 TUBE WITH DENT AND/OR DING IN THE HOT LEG TO INSPECT WITH +POINT PROBE

▫ 52 PLUGGED TUBE

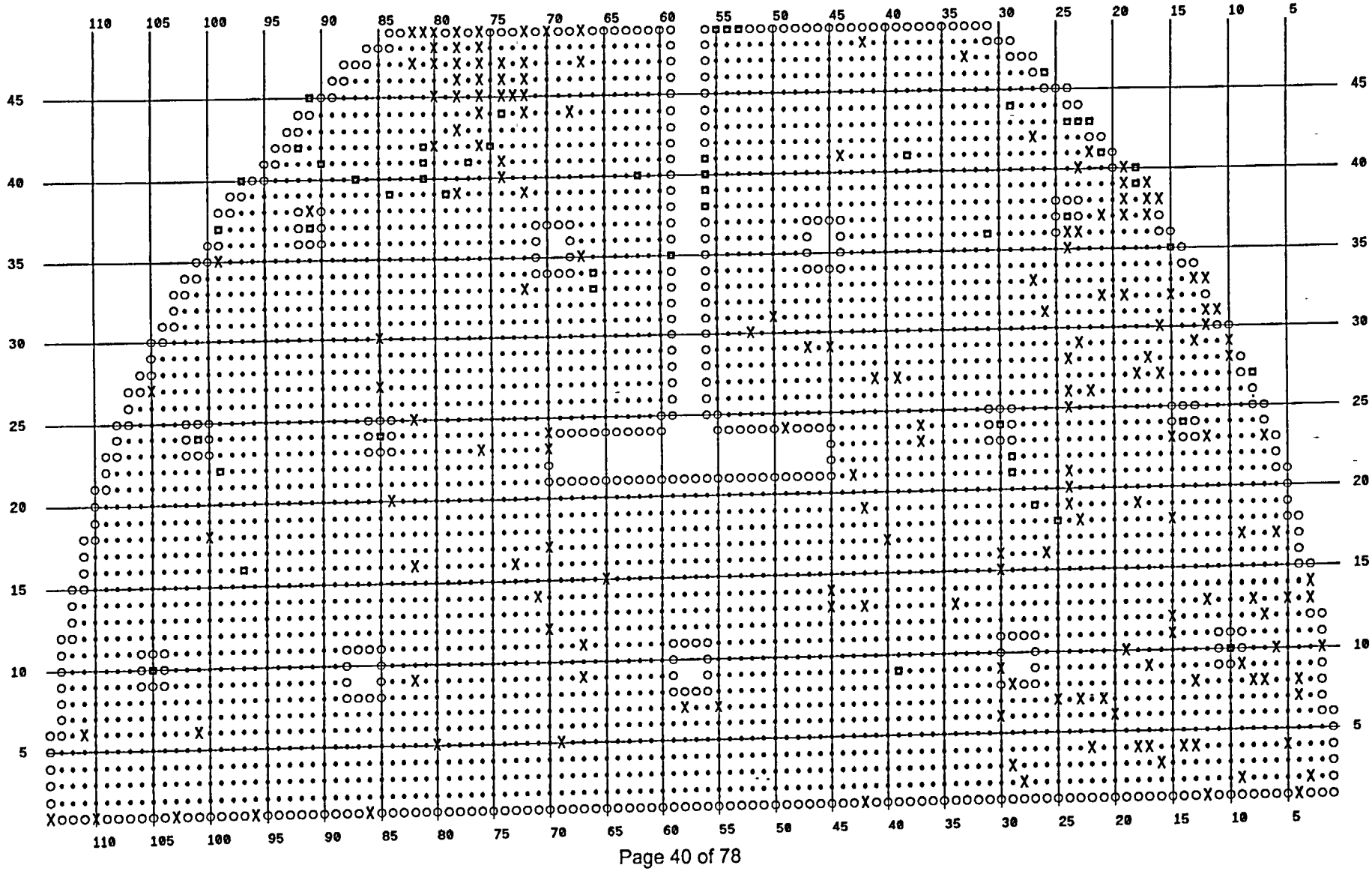


Figure A.23 B2R10 SG C Hot Leg Special Interest Plus-Point Inspection Scope

X 43 SEE ATTACHMENT 5

1 6 TUBE TO TEST AT 01H FOR SPECIAL INTEREST

3 1 TUBE TO TEST AT 03H FOR SPECIAL INTEREST

▫ 52 PLUGGED TUBE

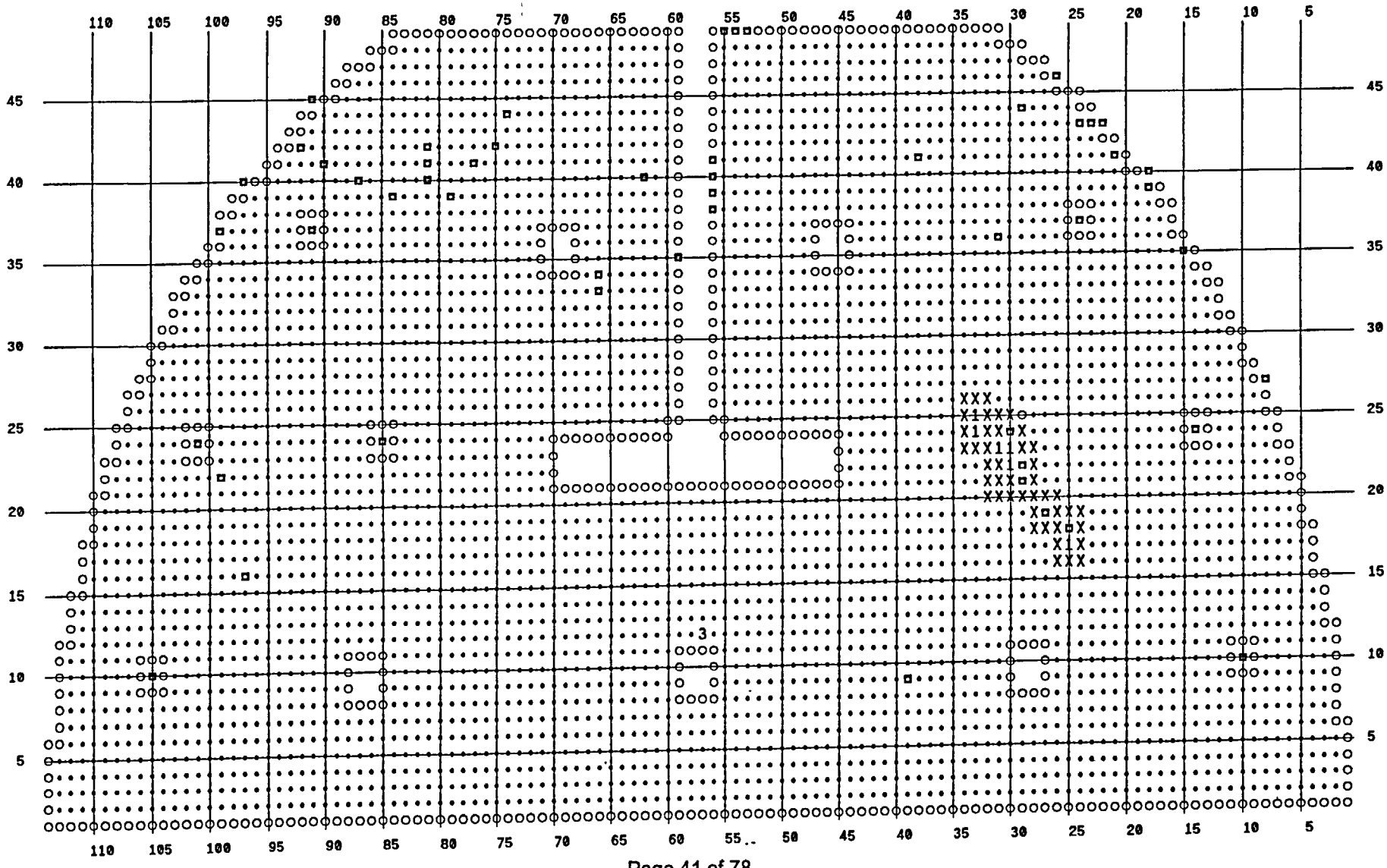


Figure A.24 B2R10 SG C Cold Leg Special Interest Plus-Point Inspection Scope

X 1 TUBE TO TEST AT 02C THROUGH 04C FOR SPECIAL INTEREST

0 4 TUBE TO TEST AT 10C THROUGH 11C FOR SPECIAL INTEREST

2 2 TUBE TO TEST AT 02C FOR SPECIAL INTEREST

7 3 TUBE TO TEST AT 07C FOR SPECIAL INTEREST

▫ 52 PLUGGED TUBE

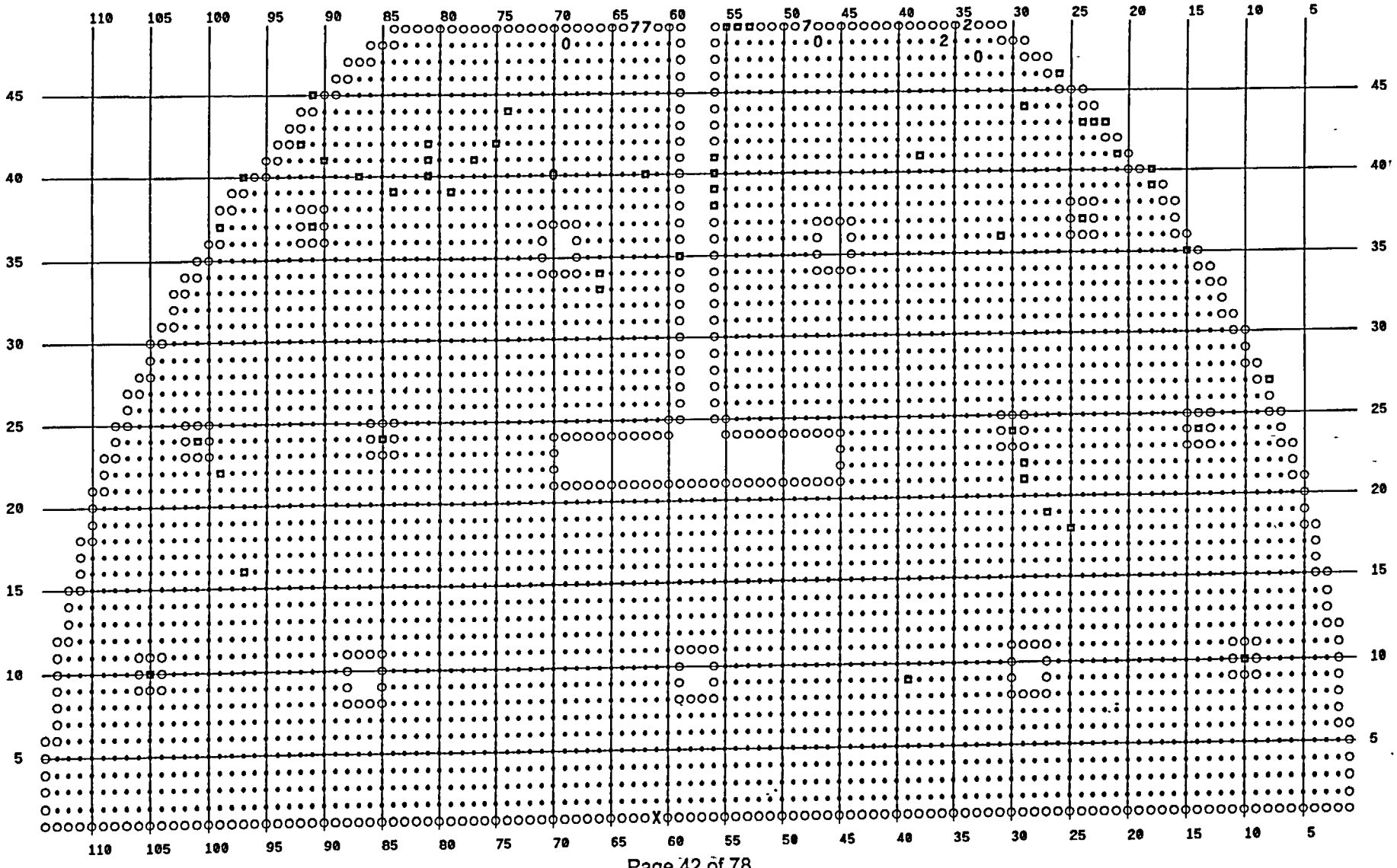


Figure A.25 B2R10 SG D Cold Leg Bobbin Coil Inspection Scope

X 3769 TESTED TEH THROUGH TEC

/ 782 TESTED 10H THROUGH TEC

▫ 27 PLUGGED TUBE

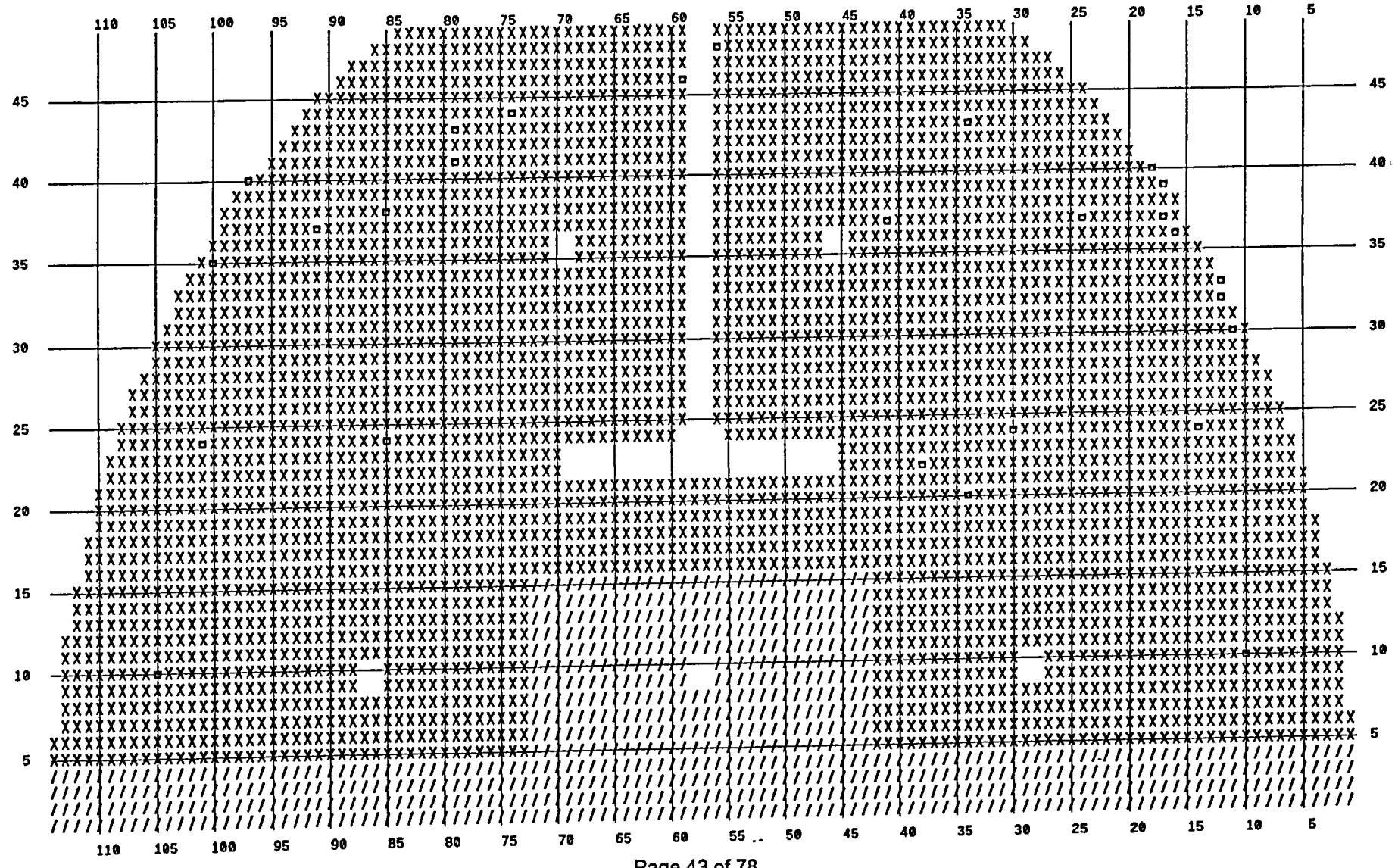


Figure A.26 B2R10 SG D Hot Leg Bobbin Coil Inspection Scope

X 2 TESTED 11C THROUGH TEH

X 780 TESTED 11H THROUGH TEH

▫ 27 PLUGGED TUBE

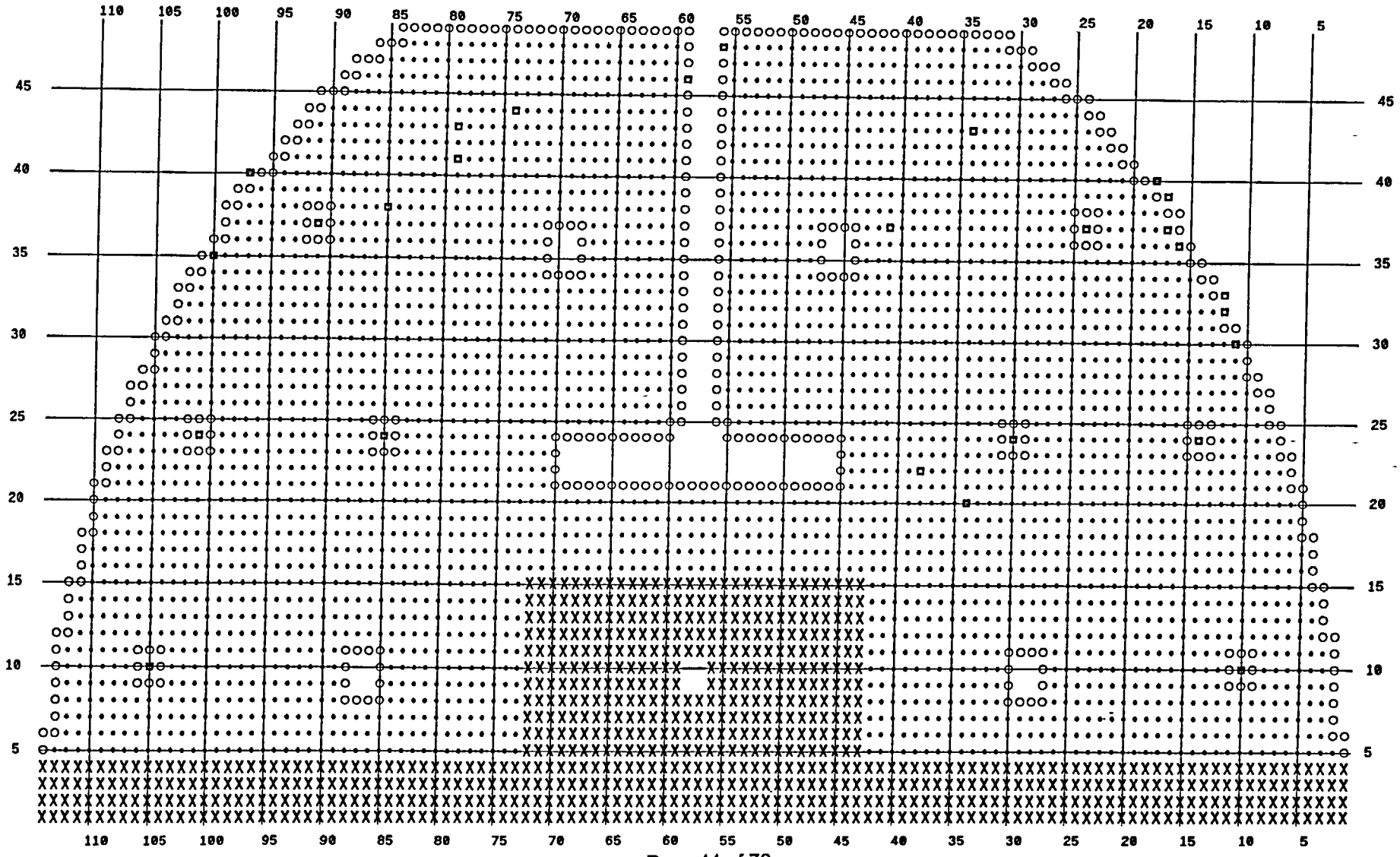


Figure A.27 B2R10 SG D Hot Leg Top of Tubesheet Plus-Point Inspection Scope

X 3408 TEST TOP OF TUBESHEET WITH +POINT PROBE

▫ 27 PLUGGED TUBE

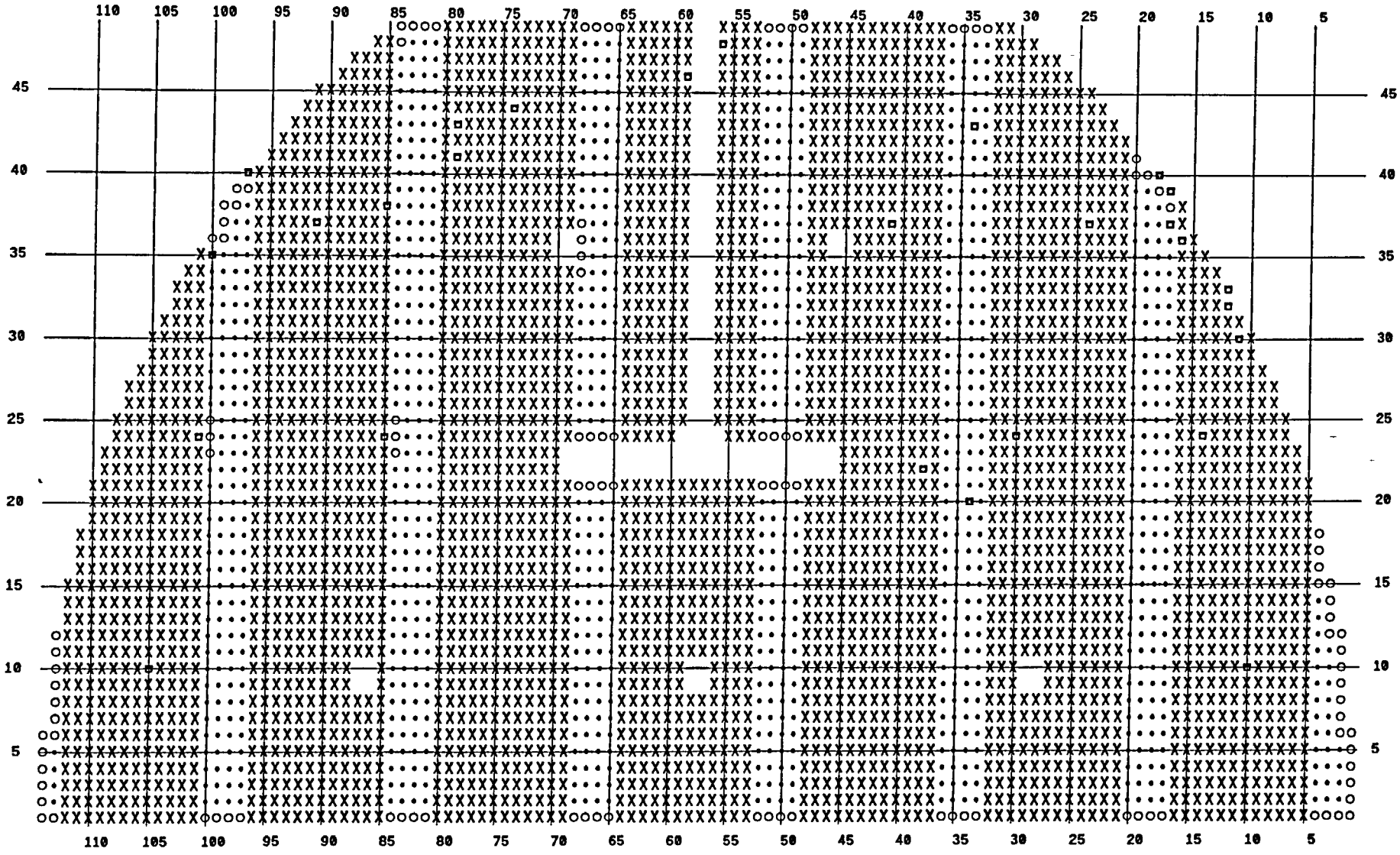


Figure A.28 B2R10 SG D Row 1 & Row 2 Plus-Point Inspection Scope

X 146 TUBE TESTED THROUGH THE U-BEND FROM THE COLD LEG

X 22 TUBE TESTED THROUGH THE U-BEND FROM THE HOT LEG

▫ 27 PLUGGED TUBE

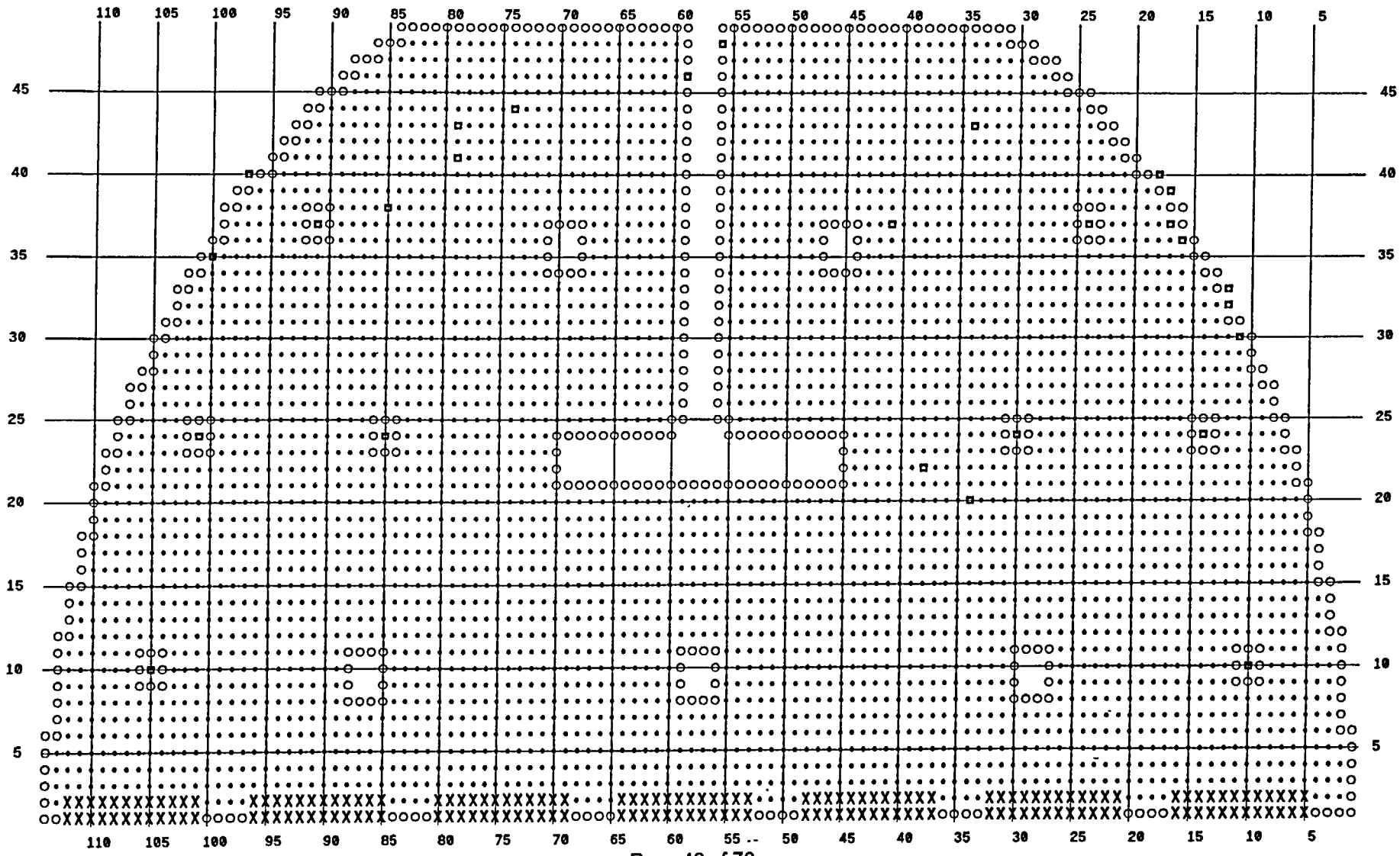


Figure A.29 B2R10 SG D Baffle Plate Expansion Plus-Point Inspection Scope

X 35 TEST 02C AND 03C WITH +POINT PROBE

□ 27 PLUGGED TUBE

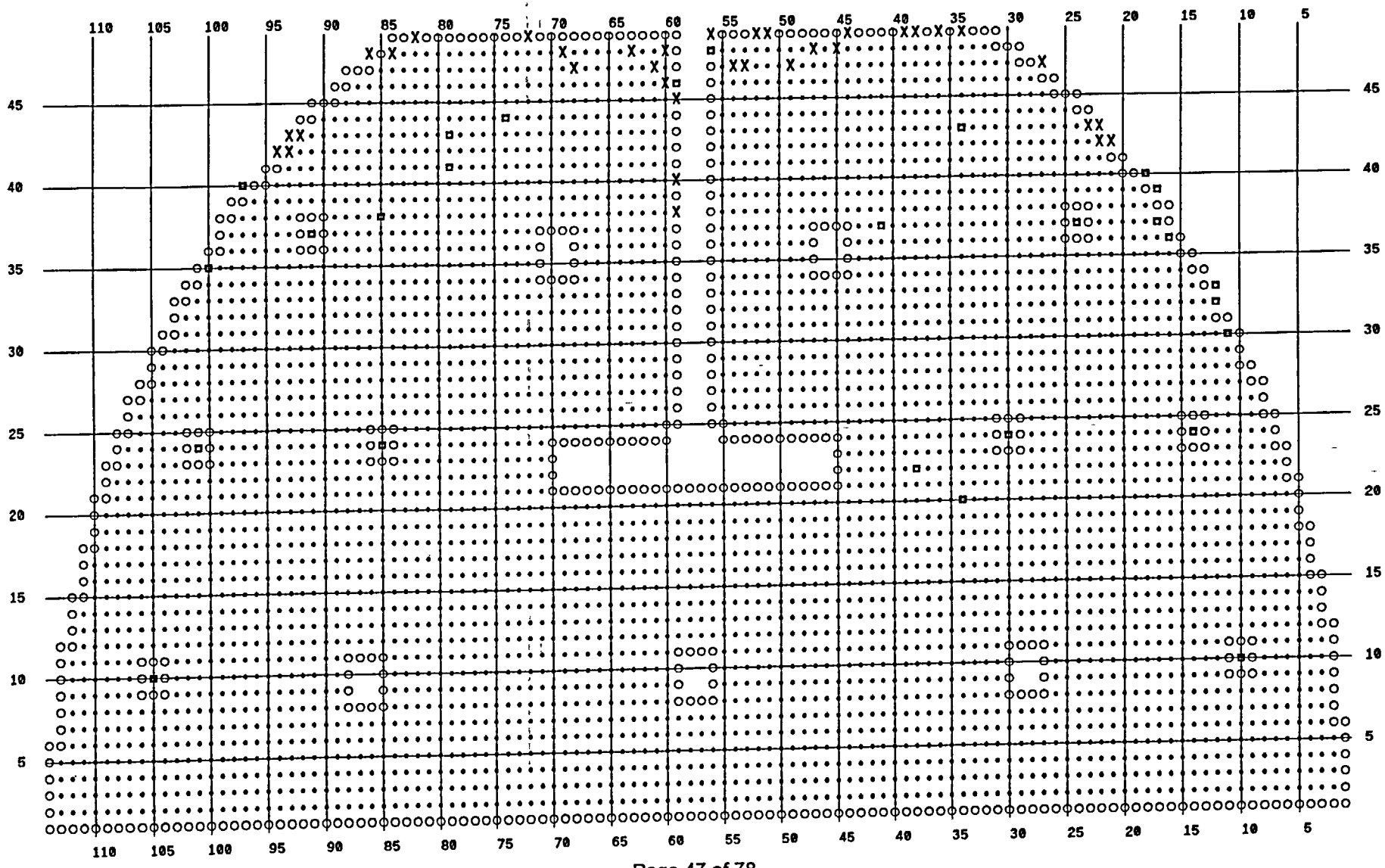


Figure A.30 B2R10 SG D Hot Leg Dent/Ding Plus-Point Inspection Scope

X 194 TUBE WITH DENT AND/OR DING IN THE HOT LEG TO INSPECT WITH +POINT

▫ 27 PLUGGED TUBE

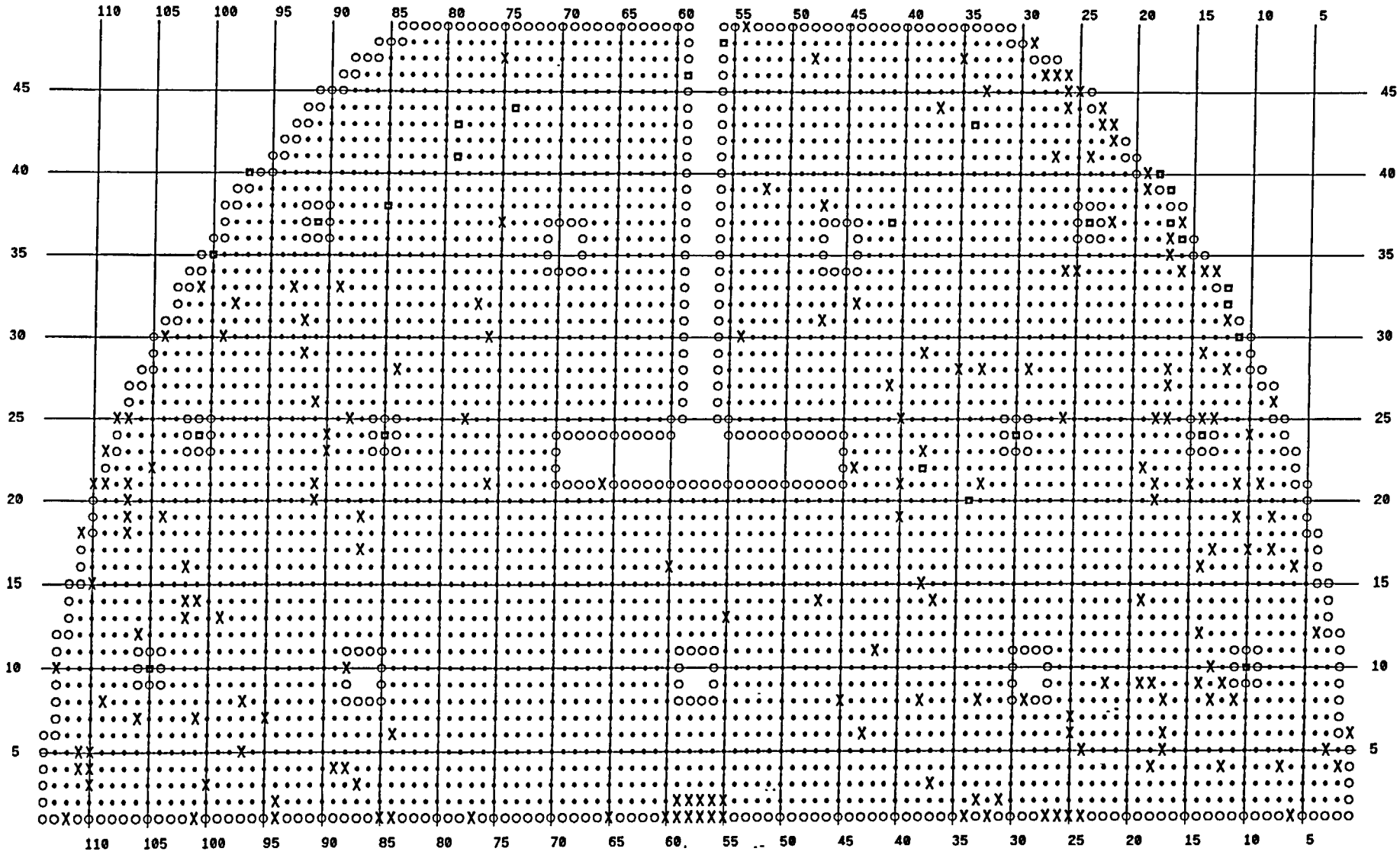
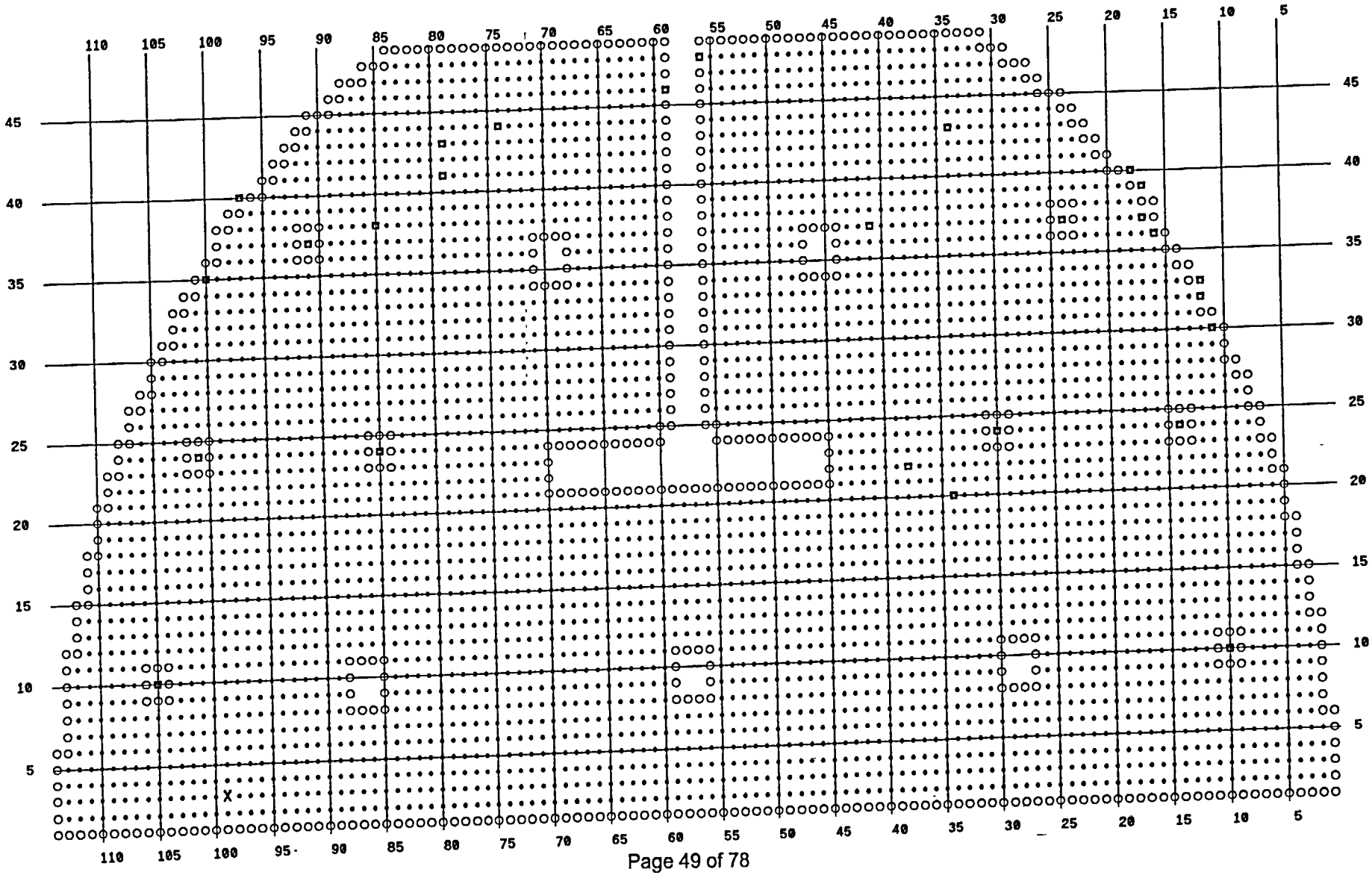


Figure A.31 B2R10 SG D Hot Leg Special Interest Plus-Point Inspection Scope

X 1 TUBE TO TEST AT 10H THROUGH 11H FOR SPECIAL INTEREST

□ 27 PLUGGED TUBE



X 30 TUBE TO TEST - SEE ATTACHMENT 5

▫ 27 PLUGGED TUBE

Figure A.32 B2R10 SG D Cold Leg Special Interest Plus-Point Inspection Scope

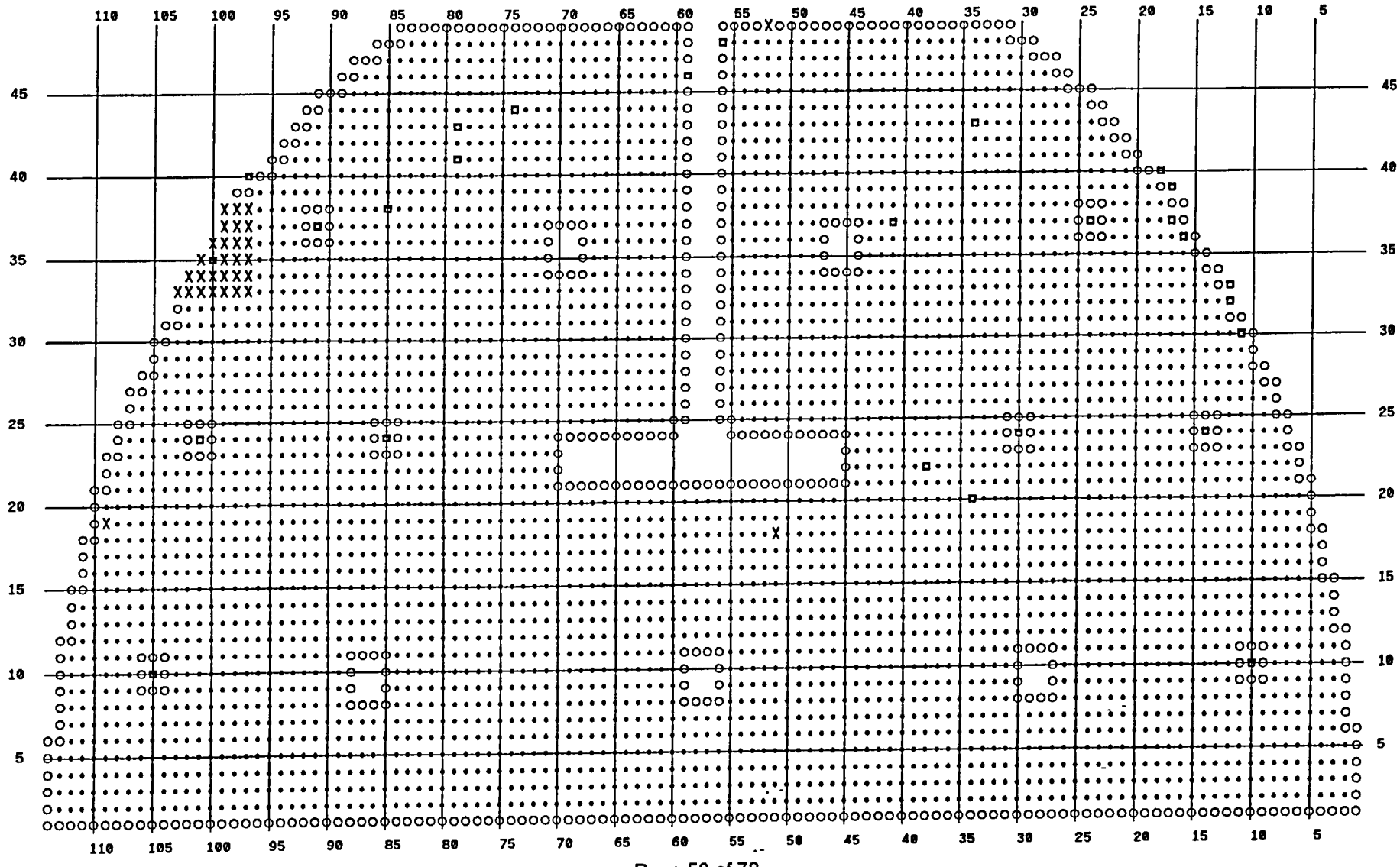


Figure A.33 B2F23 SG C Bobbin Coil Inspection Scope

L 1 TEST FULL LENGTH (TEH - TEC)

X 7 TEST 3C + 2 INCHES THROUGH TEC

• 8 Existing Plugged Stub Tube

▫ 41 Existing Plugged Tube

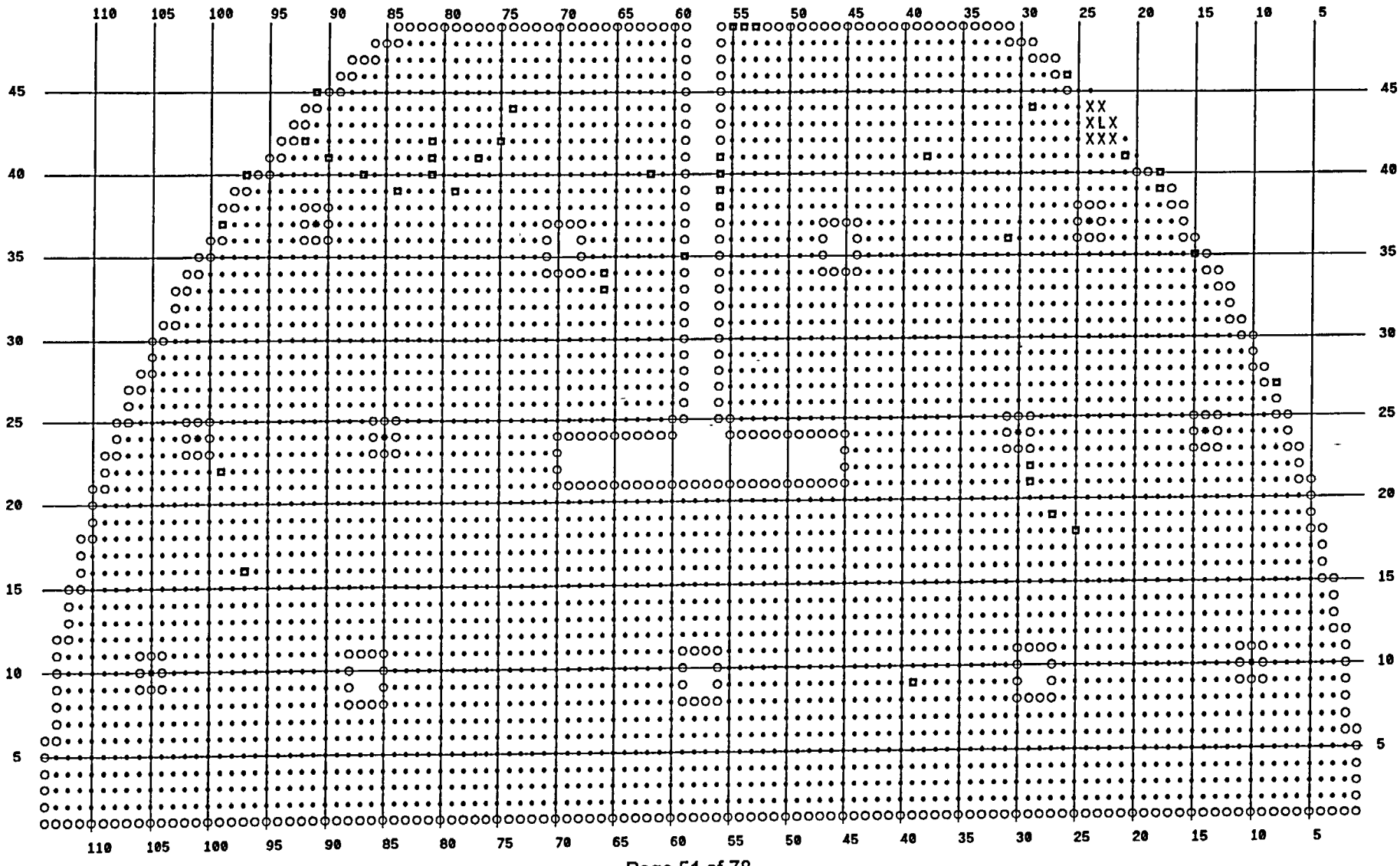


Figure A.34 B2F23 SG C Special Interest Plus-Point Inspection Scope

L 1 TEST 2C and 3C

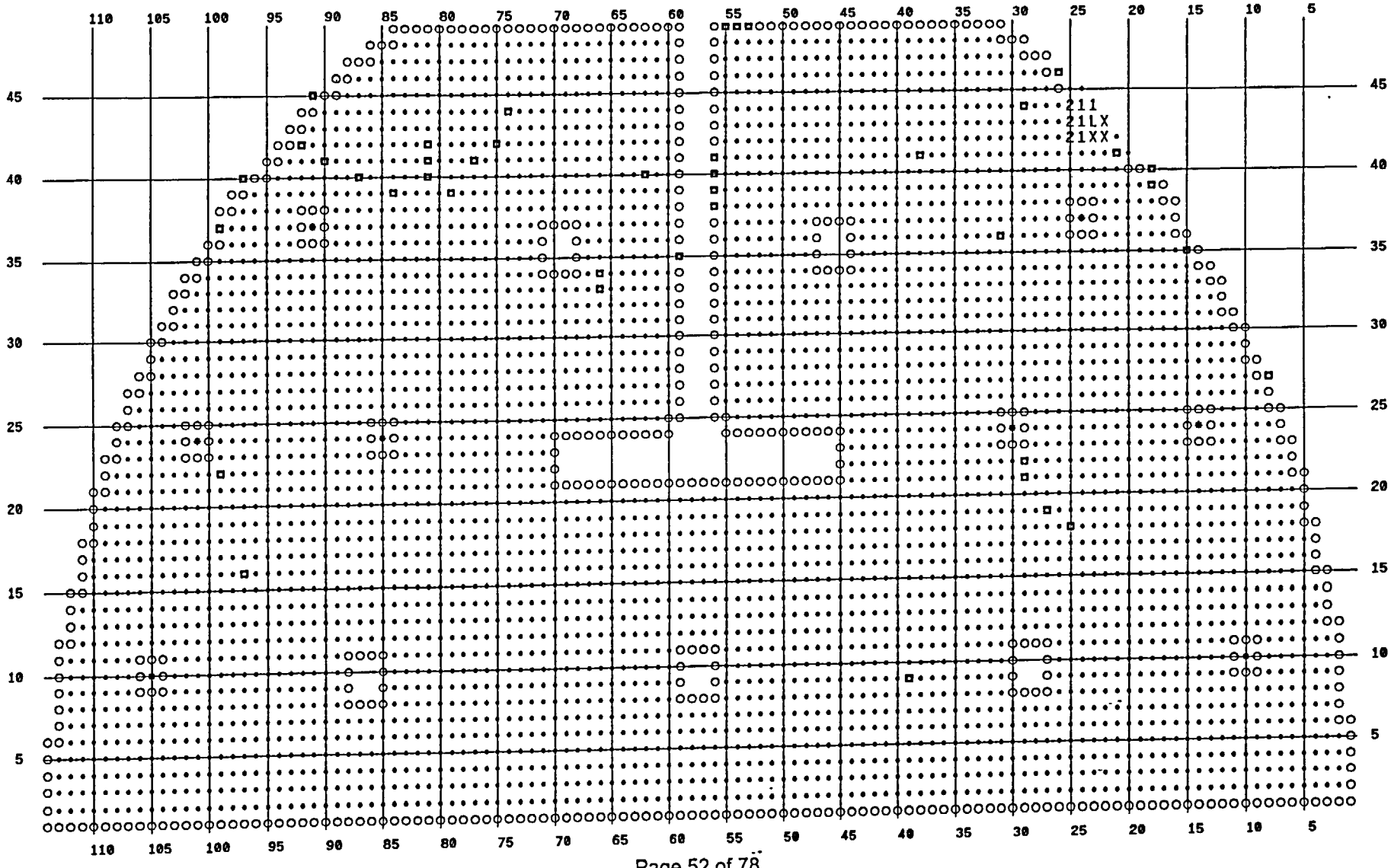
X 3 TEST 2C and 3C Boxin Level 0

1 4 TEST 2C and 3C Boxin Level 1

2 3 TEST 2C Boxin Level 2

• 8 Existing Plugged Stub Tube

▫ 41 Existing Plugged Tube



ATTACHMENT A.1
ASME SECTION XI FORM NIS-BB
2A Steam Generator

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BA

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
20	64	22	OD	AV1	0 22
22	109	15	OD	AV4	0
23	109	21	OD	AV4	0
25	8	24	OD	AV3	0.03
26	106	16	OD	AV1	0 11
26	106	15	OD	AV3	-0.06
26	107	18	OD	AV2	0 06
26	107	21	OD	AV3	-0.14
27	18	17	OD	AV1	-0.12
27	85	29	OD	AV2	0
27	104	19	OD	AV2	-0 08
27	106	26	OD	AV1	0
27	106	21	OD	AV2	0
27	106	29	OD	AV3	0
28	104	16	OD	AV4	-0.03
28	105	20	OD	AV3	0.17
28	105	21	OD	AV4	0
29	10	35	OD	AV3	0
29	11	16	OD	AV3	0
29	12	17	OD	AV2	0.29
29	12	19	OD	AV3	0
29	13	22	OD	AV3	0.22
29	104	15	OD	AV3	-0.14
30	68	17	OD	AV2	0
30	69	23	OD	AV2	0
30	69	17	OD	AV3	0
30	70	16	OD	AV2	0
30	103	22	OD	AV2	0
30	104	15	OD	AV2	0.06
31	12	19	OD	AV3	0
31	12	15	OD	AV4	0.03
31	14	16	OD	AV3	0
31	14	17	OD	AV4	0
31	67	25	OD	AV4	0
31	101	22	OD	AV2	0
31	101	24	OD	AV3	0
31	103	21	OD	AV2	0
31	103	21	OD	AV3	0
32	76	22	OD	AV3	-0.05
32	79	23	OD	AV4	0
34	14	22	OD	AV2	0.03

<<

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BA

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
34	90	21	OD	AV3	0.03
35	15	23	OD	AV3	0
35	15	16	OD	AV4	0
35	16	23	OD	AV2	0 06
35	16	22	OD	AV3	0.05
35	100	20	OD	AV3	0.03
36	15	15	OD	AV3	-0.11
36	15	20	OD	AV4	0
36	18	18	OD	AV2	0 03
36	18	18	OD	AV3	0.14
36	21	22	OD	AV3	0.11
36	21	16	OD	AV4	0 06
36	96	22	OD	AV2	0 03
37	17	27	OD	AV3	0
37	18	15	OD	AV2	0 03
37	19	20	OD	AV1	0.23
37	19	24	OD	AV3	0.06
37	19	17	OD	AV4	0
37	20	19	OD	AV3	-0.05
37	21	17	OD	AV3	0.03
37	23	28	OD	AV2	0
37	23	26	OD	AV3	0.09
37	23	15	OD	AV4	0
37	98	31	OD	AV2	0.11
37	98	29	OD	AV3	0 06
37	99	18	OD	AV3	0.03
38	16	24	OD	AV3	0.03
38	16	22	OD	AV4	0
38	19	24	OD	AV3	0.17
38	19	25	OD	AV4	0.03
38	20	26	OD	AV1	0.11
38	20	27	OD	AV2	0.14
38	20	15	OD	AV3	0.11
38	20	19	OD	AV4	0
38	21	18	OD	AV1	0.06
38	21	17	OD	AV3	-0.05
38	22	21	OD	AV2	0.06
38	23	22	OD	AV1	0.06
38	23	15	OD	AV2	-0.03
38	23	30	OD	AV3	0
38	23	24	OD	AV4	0

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BA

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
38	24	23	OD	AV2	0
38	24	17	OD	AV3	0.17
38	26	17	OD	AV2	0
38	27	20	OD	AV3	0
38	30	15	OD	AV2	0
38	30	21	OD	AV3	0
38	63	18	OD	AV2	0.22
38	63	16	OD	AV4	0.13
38	72	27	OD	AV3	0
38	72	17	OD	AV4	0
38	73	15	OD	AV2	0
38	73	27	OD	AV3	0
38	98	22	OD	AV1	0 3
38	98	30	OD	AV2	0 08
38	98	17	OD	AV3	0
39	17	19	OD	AV3	-0.05
39	21	31	OD	AV3	0 08
39	21	16	OD	AV4	-0.03
39	23	20	OD	AV2	0
39	23	25	OD	AV3	0
39	23	19	OD	AV4	0
39	84	17	OD	AV2	0
39	89	26	OD	AV2	0
39	89	31	OD	AV3	-0.31
39	89	18	OD	AV4	0.06
39	94	22	OD	AV1	0.08
39	94	33	OD	AV3	0.03
39	96	19	OD	AV3	0.03
39	96	16	OD	AV4	0.17
39	97	15	OD	AV4	-0.06
40	19	26	OD	AV2	0.06
40	19	18	OD	AV3	0 06
40	19	27	OD	AV4	0 03
40	21	40	OD	AV2	0
40	21	27	OD	AV3	0.03
40	21	21	OD	AV4	0
40	46	16	OD	AV1	0
40	46	22	OD	AV3	-0 03
40	64	17	OD	AV1	-0 08
40	66	21	OD	AV1	0
40	82	25	OD	AV2	0.19

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BA

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
40	82	20	OD	AV3	0
40	85	20	OD	AV3	0
40	90	26	OD	AV2	0.03
40	90	26	OD	AV3	0 08
40	90	15	OD	AV4	0
40	91	28	OD	AV3	0
40	92	18	OD	AV2	0
40	92	17	OD	AV3	0
40	95	21	OD	AV1	0
40	95	30	OD	AV2	0
40	95	29	OD	AV3	0 03
40	95	28	OD	AV4	0 03
41	20	19	OD	AV2	0
41	20	29	OD	AV3	0 05
41	20	24	OD	AV4	0.03
41	22	34	OD	AV2	0
41	33	15	OD	AV2	0.06
41	33	22	OD	AV3	0.03
41	84	19	OD	AV2	0
41	84	20	OD	AV3	0
41	85	16	OD	AV2	0
41	85	25	OD	AV3	0
41	87	31	OD	AV2	0.03
41	87	18	OD	AV3	0
41	88	20	OD	AV2	0
41	91	19	OD	AV2	0
41	92	22	OD	AV2	0
41	92	21	OD	AV3	0.03
41	92	24	OD	AV4	0 28
41	93	19	OD	AV1	0.14
41	93	40	OD	AV2	0
41	93	28	OD	AV3	0
41	93	16	OD	AV4	0
41	95	17	OD	AV2	0.11
41	95	25	OD	AV3	-0 06
41	95	26	OD	AV4	0
42	21	16	OD	AV4	0 03
42	25	20	OD	AV1	0
42	25	18	OD	AV2	0.06
42	25	35	OD	AV3	0
42	25	22	OD	AV4	0 03

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ATTACHMENT A.1
ASME SECTION XI FORM NIS-BB
2A Steam Generator
Page 5 of 5

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BA

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
43	34	39	OD	AV2	0
43	34	34	OD	AV3	0
43	34	33	OD	AV4	0
44	23	15	OD	AV1	0.06
44	23	20	OD	AV4	0
44	59	18	OD	AV3	0
44	81	31	OD	AV2	0
44	81	21	OD	AV3	0
44	88	24	OD	AV3	0 08
44	88	24	OD	AV4	-0.11
44	90	26	OD	AV2	0 06
44	90	32	OD	AV3	0 06
45	24	18	OD	AV3	0.03
45	24	21	OD	AV4	0.11
45	25	20	OD	AV3	0 11
45	25	20	OD	AV4	0
45	28	38	OD	AV3	0
45	28	34	OD	AV4	-0 08
45	89	18	OD	AV4	0
46	64	27	OD	AV3	0
46	64	31	OD	AV4	-0.03
46	89	17	OD	AV4	-0.03
47	28	15	OD	AV4	0 14
47	59	20	OD	AV1	0
47	61	20	OD	AV3	-0.19
47	61	19	OD	AV4	-0 08
48	56	29	OD	AV3	0
48	56	22	OD	AV4	0
49	50	16	OD	AV4	0
49	51	21	OD	AV4	0
49	60	18	OD	AV4	0.03

<<

ATTACHMENT A.2
ASME SECTION XI FORM NIS-BB
2B Steam Generator
Page 1 of 8

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
18	48	31	OD	AV1	-0.41
23	7	16	OD	AV4	0
23	108	33	OD	AV2	0.06
23	108	16	OD	AV3	0.03
24	106	15	OD	AV2	-0.06
24	107	19	OD	AV2	0.08
24	107	17	OD	AV3	-0.23
24	108	25	OD	AV4	-0.11
25	91	16	OD	AV3	0
25	103	21	OD	AV2	-0.17
25	104	21	OD	AV2	0.14
25	106	18	OD	AV4	-0.06
25	107	20	OD	AV2	0 48
25	107	24	OD	AV3	-0.17
25	108	15	OD	AV2	-0 2
25	108	30	OD	AV4	-0.2
26	11	15	OD	AV3	0 27
26	105	29	OD	AV3	-0.14
26	107	17	OD	AV2	0
27	10	21	OD	AV2	0
27	29	19	OD	AV3	0 09
27	31	23	OD	AV4	0
27	105	19	OD	AV1	0
27	105	28	OD	AV2	-0 26
27	105	18	OD	AV3	-0.17
27	105	16	OD	AV4	-0.23
28	11	21	OD	AV2	0.33
28	11	29	OD	AV3	-0.12
28	11	23	OD	AV4	0
28	12	20	OD	AV2	0
28	27	18	OD	AV2	0 12
28	27	20	OD	AV3	0
28	29	21	OD	AV2	0.18
28	29	21	OD	AV3	0.12
28	32	22	OD	AV2	0
28	37	20	OD	AV3	0
28	79	17	OD	AV3	-0.03
28	99	16	OD	AV2	-0 23
28	102	24	OD	AV3	-0.17
28	103	16	OD	AV1	0.08
28	103	15	OD	AV2	-0.11

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
28	103	21	OD	AV3	-0.2
28	104	16	OD	AV1	0.28
28	104	24	OD	AV2	0.23
28	104	16	OD	AV3	0
29	13	18	OD	AV3	0
29	15	17	OD	AV2	0.18
29	15	16	OD	AV4	0
29	98	16	OD	AV2	0
29	100	17	OD	AV2	0.14
29	105	21	OD	AV2	-0 2
29	105	25	OD	AV4	-0.25
30	13	18	OD	AV3	0
30	14	18	OD	AV3	0.12
30	99	21	OD	AV3	0
30	101	19	OD	AV1	0
30	102	28	OD	AV2	0
30	102	18	OD	AV3	-0 14
30	105	28	OD	AV4	0
31	12	21	OD	AV1	0.06
31	12	26	OD	AV2	-0.06
31	12	31	OD	AV3	-0.45
31	12	29	OD	AV4	-0 18
31	13	17	OD	AV1	0.06
31	13	15	OD	AV2	0.12
31	13	16	OD	AV3	-0 15
31	13	21	OD	AV4	0
31	15	25	OD	AV2	0
31	17	15	OD	AV2	0
31	34	17	OD	AV3	0
31	102	19	OD	AV3	-0.06
32	12	27	OD	AV2	0
32	28	31	OD	AV2	0.34
32	28	23	OD	AV3	0.12
32	28	18	OD	AV4	-0.03
32	32	22	OD	AV2	0
32	32	32	OD	AV3	0
32	32	22	OD	AV4	0.06
32	36	17	OD	AV2	0
32	36	25	OD	AV3	-0.06
32	40	17	OD	AV2	0.16
32	40	21	OD	AV3	0.12

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
32	40	17	OD	AV4	-0.09
32	98	19	OD	AV3	0
32	99	15	OD	AV3	0.06
33	13	20	OD	AV1	0.09
33	14	34	OD	AV1	-0.12
33	14	26	OD	AV2	0
33	14	19	OD	AV4	0
33	72	18	OD	AV3	0.08
33	72	16	OD	AV4	0
33	97	30	OD	AV3	0
33	98	16	OD	AV2	-0.03
33	98	22	OD	AV3	0.03
33	99	20	OD	AV1	0
33	99	25	OD	AV2	0
33	99	23	OD	AV3	0
33	99	15	OD	AV4	-0.03
34	14	30	OD	AV3	-0.03
34	14	15	OD	AV4	0
34	17	19	OD	AV3	0 03
34	19	17	OD	AV3	0
34	26	24	OD	AV3	-0.06
34	30	22	OD	AV1	0.09
34	30	26	OD	AV3	0.12
34	33	24	OD	AV2	0 41
34	36	19	OD	AV2	0
34	39	20	OD	AV2	0.29
34	95	17	OD	AV3	0.2
34	99	16	OD	AV3	0 03
34	100	18	OD	AV3	0.03
34	102	16	OD	AV4	-0 03
35	14	18	OD	AV2	0
35	14	23	OD	AV3	0
35	15	31	OD	AV2	0
35	16	18	OD	AV1	0 06
35	16	21	OD	AV3	-0.12
35	96	25	OD	AV3	-0.06
35	97	15	OD	AV2	-0 08
35	97	34	OD	AV3	0
35	98	24	OD	AV1	0
35	98	16	OD	AV3	0.14
35	98	24	OD	AV4	-0.08

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
35	99	19	OD	AV3	0.06
35	99	21	OD	AV4	-0.06
35	100	27	OD	AV2	-0.17
35	100	18	OD	AV3	0
35	100	24	OD	AV4	-0 03
35	101	35	OD	AV3	0
35	101	29	OD	AV4	0
36	16	18	OD	AV2	0
36	16	27	OD	AV3	-0.09
36	16	16	OD	AV4	0
36	17	20	OD	AV2	0.03
36	17	17	OD	AV3	-0.03
36	18	16	OD	AV2	0
36	20	18	OD	AV1	-0 09
36	20	24	OD	AV2	-0.18
36	20	16	OD	AV3	0
36	23	27	OD	AV2	0
36	29	18	OD	AV2	0.09
36	29	16	OD	AV3	0
36	78	21	OD	AV3	0 03
36	78	15	OD	AV4	-0 11
36	88	20	OD	AV3	-0.08
36	94	20	OD	AV2	0.03
37	17	16	OD	AV3	0.12
37	83	18	OD	AV2	0
37	90	17	OD	AV2	0
37	92	34	OD	AV2	0
37	93	16	OD	AV2	0
37	93	30	OD	AV3	0
37	95	19	OD	AV3	0
37	95	16	OD	AV4	0
38	71	18	OD	AV1	0
38	71	23	OD	AV2	0.14
38	71	34	OD	AV3	-0.06
38	93	16	OD	AV2	0.08
38	93	17	OD	AV3	0 03
38	93	16	OD	AV4	0
38	95	33	OD	AV1	0
38	95	23	OD	AV2	0
38	95	23	OD	AV3	0
38	95	26	OD	AV4	0

<<

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
38	96	30	OD	AV1	-0 06
38	96	25	OD	AV2	-0.09
38	96	18	OD	AV3	0 03
38	96	29	OD	AV4	0.06
39	19	32	OD	AV2	-0.03
39	19	28	OD	AV3	-0 03
39	19	15	OD	AV4	0.09
39	20	20	OD	AV2	0
39	21	17	OD	AV2	0.06
39	21	18	OD	AV3	-0.06
39	26	25	OD	AV2	-0.12
39	26	18	OD	AV3	-0.03
39	33	20	OD	AV4	0
39	39	24	OD	AV2	0.15
39	69	17	OD	AV2	0
39	69	19	OD	AV3	0.03
39	77	16	OD	AV3	0
39	88	19	OD	AV2	0
39	92	24	OD	AV4	-0 06
39	93	22	OD	AV3	0
39	93	17	OD	AV4	0.17
39	94	18	OD	AV2	-0.2
39	94	31	OD	AV3	-0 06
39	94	19	OD	AV4	0
39	95	22	OD	AV2	-0.11
39	95	23	OD	AV3	0
39	95	20	OD	AV4	-0.03
39	96	19	OD	AV1	-0.06
39	96	39	OD	AV2	0
39	96	17	OD	AV4	-0.06
40	18	20	OD	AV1	-0 06
40	18	39	OD	AV2	0
40	18	38	OD	AV3	0
40	20	24	OD	AV2	0
40	20	28	OD	AV3	0
40	24	24	OD	AV2	0.12
40	26	24	OD	AV2	0.18
40	27	25	OD	AV3	0.09
40	34	28	OD	AV2	0.22
40	41	19	OD	AV2	0.15
40	45	17	OD	AV2	0.24

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
40	54	18	OD	AV2	0
40	54	19	OD	AV3	-0.18
40	59	22	OD	AV3	0.09
40	59	16	OD	AV4	0
40	91	21	OD	AV2	0
40	92	29	OD	AV3	0.11
40	94	15	OD	AV1	0
40	94	32	OD	AV2	0.03
40	95	15	OD	AV3	0
40	95	18	OD	AV4	0.03
41	43	24	OD	AV1	0.12
41	43	28	OD	AV2	0.15
41	43	35	OD	AV3	0 03
41	79	18	OD	AV3	0 06
41	85	18	OD	AV2	0
41	87	22	OD	AV1	0
41	87	27	OD	AV2	0
41	87	21	OD	AV3	0.03
41	87	16	OD	AV4	0.06
41	93	23	OD	AV2	-0 06
41	93	27	OD	AV3	0
41	93	25	OD	AV4	0
41	95	21	OD	AV1	0
41	95	33	OD	AV2	0
41	95	29	OD	AV3	0
42	30	30	OD	AV1	0
42	30	24	OD	AV2	0.18
42	30	36	OD	AV3	0
42	34	24	OD	AV2	0
42	36	26	OD	AV2	0 21
42	37	15	OD	AV1	0 44
42	37	28	OD	AV2	0.41
42	37	31	OD	AV3	0.47
42	39	15	OD	AV3	0.18
42	44	19	OD	AV2	0.12
42	44	33	OD	AV3	0
42	44	21	OD	AV4	0.12
42	68	22	OD	AV2	0
42	68	20	OD	AV3	-0.06
42	84	19	OD	AV2	0
42	84	17	OD	AV3	0.14

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
42	86	21	OD	AV2	0
42	89	34	OD	AV1	0
42	89	33	OD	AV2	0
42	89	24	OD	AV3	-0.11
42	91	16	OD	AV4	0.03
43	25	25	OD	AV2	-0.09
43	25	20	OD	AV3	0
43	25	17	OD	AV4	0
43	29	21	OD	AV1	-0.12
43	29	37	OD	AV2	0
43	29	16	OD	AV3	0.03
43	91	24	OD	AV3	0
43	92	23	OD	AV3	0 06
43	93	16	OD	AV4	0 03
44	26	35	OD	AV2	0
44	26	18	OD	AV3	0
44	45	18	OD	AV2	0
44	45	25	OD	AV3	0.12
44	76	25	OD	AV2	0.03
44	76	17	OD	AV3	-0 08
44	85	24	OD	AV2	0
44	85	32	OD	AV3	0
44	85	24	OD	AV4	-0.08
44	90	33	OD	AV3	0.06
44	90	19	OD	AV4	0.03
45	26	33	OD	AV2	0
45	26	38	OD	AV3	0
45	26	28	OD	AV4	0
45	29	19	OD	AV4	-0.09
45	32	23	OD	AV2	0.12
45	32	29	OD	AV3	0.15
45	36	28	OD	AV3	0.15
45	36	33	OD	AV4	0
45	83	25	OD	AV2	0
45	83	21	OD	AV3	0
45	83	21	OD	AV4	0.06
45	86	29	OD	AV2	0.03
45	86	18	OD	AV3	-0 17
45	89	31	OD	AV2	0
45	89	22	OD	AV3	0
47	27	35	OD	AV2	0

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BB

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
47	27	29	OD	AV3	0
47	27	29	OD	AV4	0
47	56	31	OD	AV2	0
47	75	6	OD	02C	0.31
48	50	13	OD	07C	0.34
48	53	12	OD	07C	0.4
48	54	8	OD	07C	0.34
48	55	10	OD	07C	0.4
48	59	12	OD	07C	-0 46
49	50	15	OD	07C	0.25
49	53	16	OD	07C	0.15
49	63	9	OD	07C	0.4
49	69	16	OD	AV4	-0.06

ATTACHMENT A.3
ASME SECTION XI FORM NIS-BB
2C Steam Generator
Page 1 of 5

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
17	25	22	OD	01H	0.42
22	6	19	OD	AV1	0 08
22	6	18	OD	AV4	-0.22
22	30	4	OD	01H	0.42
23	6	22	OD	AV4	0.08
23	30	30	OD	01H	0.46
23	31	11	OD	01H	0 41
24	33	3	OD	01H	0 41
25	33	15	OD	01H	0 47
25	105	17	OD	AV2	0
25	106	21	OD	AV1	0 09
25	107	17	OD	AV4	-0.14
25	108	19	OD	AV1	0.11
25	108	18	OD	AV2	0
25	108	20	OD	AV3	0.06
26	8	22	OD	AV2	0
26	9	18	OD	AV2	0 14
26	9	18	OD	AV3	-0.03
26	9	26	OD	AV4	-0.06
26	85	22	OD	AV2	0.42
27	34	19	OD	AV3	0
27	106	17	OD	AV2	0
27	106	26	OD	AV3	0
28	35	15	OD	AV3	0.06
28	84	22	OD	AV3	0
28	103	27	OD	AV3	0
29	11	23	OD	AV1	-0.08
29	29	19	OD	AV2	0
29	29	18	OD	AV3	-0.11
29	38	15	OD	AV3	0
29	44	17	OD	AV2	0 08
30	35	22	OD	AV3	0.03
30	84	15	OD	AV2	0 14
30	85	18	OD	AV2	0
30	85	16	OD	AV3	0
30	100	15	OD	AV2	0
30	100	16	OD	AV3	0 08
30	100	16	OD	AV4	0.08
30	104	18	OD	AV2	0 08
30	104	16	OD	AV3	-0 11
31	14	17	OD	AV3	0

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
31	82	17	OD	AV3	0.14
32	13	17	OD	AV2	0.22
32	13	22	OD	AV3	0.16
32	28	16	OD	AV3	0
32	74	15	OD	AV3	0
32	82	21	OD	AV2	-0.17
32	83	18	OD	AV3	0
32	83	18	OD	AV3	0 14
33	39	17	OD	AV2	-0.08
33	39	16	OD	AV3	-0 03
33	50	17	OD	AV3	0
34	27	26	OD	AV2	0
34	29	19	OD	AV2	0.17
34	29	18	OD	AV3	0 03
34	59	8	OD	TSH	0.12
34	85	17	OD	AV2	0
34	92	24	OD	AV2	0.11
34	92	17	OD	AV3	0
34	94	19	OD	AV2	-0 11
34	94	16	OD	AV3	0
34	95	16	OD	AV2	0
35	19	15	OD	AV2	0
35	22	20	OD	AV3	0
35	25	22	OD	AV2	0
35	25	20	OD	AV3	-0.03
35	30	22	OD	AV2	0 03
35	82	17	OD	AV2	0.14
35	82	21	OD	AV3	0.06
35	85	18	OD	AV2	0.03
35	85	27	OD	AV3	0
35	86	15	OD	AV1	0.03
35	86	33	OD	AV2	-0.2
35	87	17	OD	AV3	0
35	88	19	OD	AV3	-0.06
35	95	19	OD	AV2	0
35	96	16	OD	AV2	-0.2
35	96	16	OD	AV4	0.03
36	17	17	OD	AV3	-0.03
36	19	27	OD	AV3	0.11
36	20	16	OD	AV3	0
36	21	25	OD	AV3	-0.08

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
36	22	21	OD	AV2	0
36	22	20	OD	AV3	0
36	24	15	OD	AV1	-0.28
36	24	26	OD	AV3	-0.22
36	25	16	OD	AV2	0 31
36	27	17	OD	AV3	0 03
36	80	16	OD	AV1	0
36	80	18	OD	AV3	-0.28
36	93	16	OD	AV2	0
36	94	19	OD	AV2	0 06
36	96	20	OD	AV2	-0.14
36	96	17	OD	AV3	0
37	17	19	OD	AV1	-0.17
37	23	16	OD	AV2	0
37	84	20	OD	AV3	0
38	16	23	OD	AV1	0
38	16	21	OD	AV2	0
38	22	24	OD	AV1	0.22
38	22	21	OD	AV2	0
38	25	15	OD	AV1	0.06
38	25	20	OD	AV2	0.28
38	62	25	OD	AV2	-0 09
38	62	18	OD	AV3	-0 08
39	19	27	OD	AV3	0.03
39	20	15	OD	AV2	0
39	25	16	OD	AV1	-0.03
39	25	16	OD	AV2	0
39	35	15	OD	AV1	0
39	35	32	OD	AV2	0
39	35	32	OD	AV3	0
39	38	17	OD	AV3	0 06
39	49	18	OD	AV2	0 08
39	83	20	OD	AV2	0 17
39	94	17	OD	AV2	-0.14
39	94	16	OD	AV3	0
40	21	29	OD	AV2	0.03
40	21	16	OD	AV3	0
40	82	16	OD	AV2	0.06
40	83	24	OD	AV2	-0 06
40	83	19	OD	AV3	-0.11
40	90	19	OD	AV2	0 06

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FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
40	90	18	OD	AV3	0
40	93	16	OD	AV1	0
40	93	22	OD	AV3	0
40	95	15	OD	AV1	0
40	95	23	OD	AV3	0
41	26	15	OD	AV2	0 17
41	26	17	OD	AV3	0.28
41	63	19	OD	AV1	-0 08
41	63	30	OD	AV2	0 22
41	63	19	OD	AV3	-0.03
41	84	15	OD	AV1	0
41	84	18	OD	AV3	0.03
41	88	21	OD	AV2	0.08
41	88	25	OD	AV3	-0.2
41	89	26	OD	AV1	0
41	89	18	OD	AV2	0
41	89	28	OD	AV3	0
41	89	21	OD	AV4	0
41	92	18	OD	AV1	0
41	92	33	OD	AV3	0.11
41	92	20	OD	AV4	-0.03
42	25	18	OD	AV3	0 08
42	29	18	OD	AV2	0 06
42	29	26	OD	AV3	0 06
42	86	19	OD	AV1	-0 06
42	86	26	OD	AV2	0.08
42	86	28	OD	AV3	-0 06
42	88	16	OD	AV2	0 14
42	89	18	OD	AV2	0
42	89	30	OD	AV3	0
42	90	31	OD	AV3	-0.2
42	90	19	OD	AV4	0
42	93	25	OD	AV1	0
42	93	15	OD	AV2	0
42	93	27	OD	AV3	0
42	94	18	OD	AV2	0.06
42	94	29	OD	AV3	0
42	94	16	OD	AV4	-0.11
43	34	17	OD	AV3	0.06
43	36	23	OD	AV3	0.03
43	36	17	OD	AV4	0.11

<<

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
43	93	16	OD	AV1	0
43	93	21	OD	AV2	0
43	93	17	OD	AV3	0
47	74	15	OD	AV3	0
48	36	17	OD	02C	0.5
48	43	15	OD	AV3	0
49	34	24	OD	02C	0 41
49	48	14	OD	07C	-0.5
49	59	16	OD	AV2	0 08
49	62	18	OD	07C	-0.08
49	63	19	OD	07C	-0 05
49	73	7	OD	07C	-0.41

<<

ATTACHMENT A.4
ASME SECTION XI FORM NIS-BB
2D Steam Generator

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BD

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
20	5	18	OD	AV4	0
21	57	18	OD	AV1	0
25	50	27	OD	AV2	0
25	108	20	OD	AV1	-0 06
25	108	19	OD	AV4	0
26	70	21	OD	AV2	-0.37
26	107	19	OD	AV3	0
26	107	15	OD	AV4	0.03
28	11	16	OD	AV2	0
28	28	29	OD	AV4	-0.34
28	36	28	OD	AV2	-0.14
28	78	17	OD	AV3	-0.03
28	102	16	OD	AV3	-0 09
30	103	21	OD	AV2	-0.09
31	13	17	OD	AV1	0 09
31	13	22	OD	AV3	0.03
31	14	16	OD	AV4	-0.14
31	44	37	OD	AV2	0
31	44	25	OD	AV3	0
31	50	20	OD	AV2	0.17
31	50	30	OD	AV3	-0 14
31	50	19	OD	AV4	0
31	84	25	OD	AV2	0.09
31	84	18	OD	AV3	0.06
31	103	22	OD	AV2	-0 06
31	103	20	OD	AV3	0
31	103	16	OD	AV4	-0.06
31	104	18	OD	AV3	-0.03
32	79	17	OD	AV3	0.03
33	34	19	OD	AV2	0.2
33	70	18	OD	AV3	0 06
34	87	16	OD	AV2	0
34	87	20	OD	AV3	-0.06
34	95	16	OD	AV3	0.06
34	97	17	OD	AV1	-0.03
34	97	29	OD	AV2	0.03
34	97	15	OD	AV3	0.06
34	98	23	OD	AV3	0.06
34	99	18	OD	AV3	0
34	99	37	OD	AV4	0
34	100	17	OD	AV3	0

<<

ATTACHMENT A.4
ASME SECTION XI FORM NIS-BB
2D Steam Generator
Page 2 of 3

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BD

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
35	14	19	OD	AV4	0
35	17	28	OD	AV2	0
35	17	15	OD	AV3	-0.06
35	20	28	OD	AV2	0
35	95	29	OD	AV2	0 03
35	95	16	OD	AV3	0 14
35	99	32	OD	02C	0.48
36	17	18	OD	AV2	0
36	18	19	OD	AV2	0.03
36	19	15	OD	AV3	-0.03
36	21	23	OD	AV2	0
36	37	31	OD	AV2	0
36	37	25	OD	AV3	0.06
36	62	17	OD	AV2	0.08
36	82	28	OD	AV2	0
36	82	17	OD	AV3	0.03
36	82	18	OD	AV4	0.03
36	83	23	OD	AV2	0.14
36	84	16	OD	AV2	0.17
36	95	18	OD	AV3	0 09
36	99	14	OD	02C	0 41
37	33	16	OD	AV1	0
37	33	25	OD	AV2	0
37	33	27	OD	AV3	-0.03
37	42	35	OD	AV2	0
37	87	15	OD	AV3	-0.03
37	99	19	OD	02C	1.09
38	25	18	OD	AV3	0
39	27	18	OD	AV3	0.17
39	72	19	OD	AV2	0
39	72	23	OD	AV3	0.14
39	80	15	OD	AV2	0
39	80	23	OD	AV3	0 06
39	90	26	OD	AV4	0
40	22	16	OD	AV4	-0 09
40	25	15	OD	AV3	-0.17
40	26	17	OD	AV3	0.03
40	28	19	OD	AV3	0.09
40	29	29	OD	AV2	0
40	29	22	OD	AV3	0
40	33	20	OD	AV2	0 31

<<

ATTACHMENT A.4
ASME SECTION XI FORM NIS-BB
2D Steam Generator
Page 3 of 3

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2R10

Site: Byron Station, Unit 2 Steam Generator: 2RC01BD

Test Frequency: 20, 130, 300, 550 kHz Date: 09/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
40	33	25	OD	AV3	0.17
40	36	17	OD	AV2	0 06
40	36	16	OD	AV3	-0.06
40	73	23	OD	AV2	0 17
40	76	25	OD	AV2	0 03
40	90	20	OD	AV3	0
40	92	16	OD	AV3	-0.11
41	20	22	OD	AV1	0.14
41	20	25	OD	AV2	0
41	32	19	OD	AV2	0
41	32	16	OD	AV3	0
41	33	25	OD	AV2	0.26
41	33	16	OD	AV3	-0 11
41	60	19	OD	AV1	0.14
41	60	17	OD	AV2	0.06
41	80	22	OD	AV1	0.17
41	86	17	OD	AV2	0 06
41	86	35	OD	AV3	0
42	36	34	OD	AV2	0.11
42	36	23	OD	AV3	-0.03
43	22	19	OD	AV1	0
43	22	19	OD	AV2	-0.14
43	85	16	OD	AV3	0
46	80	17	OD	AV4	0
46	89	16	OD	AV4	0 03
47	56	20	OD	AV3	0 08
47	56	31	OD	AV4	0.11
48	59	27	OD	AV3	0
48	59	20	OD	AV4	0
48	59	16	OD	AV4	-0.06
49	34	15	OD	AV2	0
49	52	8	OD	07C	0.36

<<

ATTACHMENT A.5
ASME SECTION XI FORM NIS-BB
2C Steam Generator
Page 1 of 1

FORM NIS-BB TUBE EXAMINATION REPORT

EDDY CURRENT EXAMINATION RESULTS - B2F23

Site: Byron Station, Unit 2 Steam Generator: 2RC01BC

Test Frequency: 20, 130, 300, 550 kHz Date: 06/25/2002

Row	Column	% Tube Wall Penetration	Origin	Location	Inch
43	22	37	OD	02C	0.49
43	23	71 *	OD	02C	0.53
43	24	11	OD	02C	0.46
43	24	13	OD	02C	0 85

<<

* Sized at 71% TW by eddy current. 100% TW flaw confirmed by pressure test.

ATTACHMENT A.6
FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As Required by the Provisions of the ASME Code Rules

1. Owner: Exelon Generation Company, LLC, 200 Exelon Way, Kennett Square, PA, 19348
(Name and Address of Owner)

2. Plant: Byron Station, 4450 North German Church Road, Byron, Illinois, 61010
(Name and Address of Plant)

3. Plant Unit: Two (2)

4. Owner Certificate of Authorization (if required): N/A

5. Commercial Service Date: 08/21/87

6. National Board Number for Unit: N-200

7. Components Inspected: Steam Generator Eddy Current Inspection – B2R10

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
2RC01BA	Westinghouse	2095	U-201435	15
2RC01BB	Westinghouse	2096	U-201436	16
2RC01BC	Westinghouse	2097	U-201437	17
2RC01BD	Westinghouse	2098	U-201438	18

FORM NIS-1 (Back)

8. Examination Dates 09/20/02 to 09/25/02 9. Inspection Interval from 08/21/98 (extended) to 08/21/07

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

Refer to the Attached Report

11. Abstract of Conditions Noted

Refer to the Attached Report

12. Abstract of Corrective Measures Recommended and Taken

Refer to the Attached 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) Not Applicable Expiration Date Not Applicable

Date 12/03/02 Signed For Exelon Generating Company, LLC By

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 Illinois and employed by HSB CT of Hartford, CT have inspected the components described in this Owner's Report during the period 9/20/02 to 9/25/02, 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 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 Owner's 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.

Commissions ILL-1254

Inspector's Signature National Board, State, Province, and Endorsements

Date December 3, 2002

ATTACHMENT A.7
FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As Required by the Provisions of the ASME Code Rules

1. Owner: Exelon Generation Company, LLC, 200 Exelon Way, Kennett Square, PA, 19348
(Name and Address of Owner)

2. Plant: Byron Station, 4450 North German Church Road, Byron, Illinois, 61010
(Name and Address of Plant)

3. Plant Unit: Two (2)

4. Owner Certificate of Authorization (if required): N/A

5. Commercial Service Date: 08/21/87

6. National Board Number for Unit: N-200

7. Components Inspected: Steam Generator Eddy Current Inspection – B2F23

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
2RC01BC	Westinghouse	2097	U-201437	17

FORM NIS-1 (Back)

8. Examination Dates 06/24/02 to 06/25/02 9. Inspection Interval from 08/21/98 (extended) to 08/21/07

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

Refer to the Attached Report

11. Abstract of Conditions Noted

Refer to the Attached Report

12. Abstract of Corrective Measures Recommended and Taken

Refer to the Attached 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) Not Applicable Expiration Date Not Applicable

Date 12/03/02 Signed For Exelon Generating Company, LLC By SMA
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 Illinois and employed by HSB CT of Hartford, CT have inspected the components described in this Owner's Report during the period 6/24/02 to 6/25/02, 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 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 Owner's 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.

Inspector's Signature Commissions ILL-1754
National Board, State, Province, and Endorsements

Date December 3, 2002