Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385

Dominion

AUG 25 2003

Docket No. 50-423
B18942

RE: 10 CFR 50.36

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

Millstone Power Station, Unit No. 3
Steam Generator Tube Inservice Inspection Report

This special report is being submitted pursuant to Millstone Unit No. 3 Technical Specification 4.4.5.5.b and 6.9.2. The end of Millstone Unit No. 3 Cycle 8 Steam Generator tube inspection was completed September 22, 2002.

This report also provides a summary of RFO8 Condition Monitoring and Operational Assessments.

There are no regulatory commitments contained within this submittal.

If you should have any questions regarding this submittal, please contact Mr. David W. Dodson at (860) 447-1791, extension 2346.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.

J. Alan Price
Site Vice President - Millstone

cc: See next page

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Attachment 3	"A" Steam Generator Volumetric Indications
Attachment 4	"A" Steam Generator Single Volumetric Indications
Attachment 5	"C" Steam Generator AVB Indications
Attachment 6	"C" Steam Generator Volumetric Indications
Attachment 7	"C" Steam Generator Single Volumetric Indications

cc: H. J. Miller, Region I Administrator
V. Nerses, NRC Senior Project Manager, Millstone Unit No. 3
Millstone Senior Resident Inspector

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Attachment 1

Millstone Power Station, Unit No. 3

Steam Generator Tube Inservice Inspection Report

Millstone Unit No. 3, Cycle 8
Steam Generator Tube Inservice Inspection Report
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Millstone Unit No. 3, Cycle 8
Steam Generator Tube Inservice Inspection Report

Examination Scope

A full length eddy current inspection was performed on 11,218 tubes (100 percent of the operable tubes in Steam Generators (SGs) "A" and "C"), or approximately 50 percent of the total population of tubes in all Millstone Unit No. 3 SGs. Additionally, extensive augmented testing (8,601 tube locations) was conducted in SGs "A" and "C" utilizing rotating probes incorporating plus point coils. The plus point probe provides superior detection of both circumferential and axial cracks, and has been qualified for the detection of cracking mechanisms per the Electric Power Research Institute (EPRI) "PWR Steam Generator Examination Guidelines, Appendix H (Performance Demonstration for Eddy Current Examination)." The rotating probe inspections were performed in areas of special interest (e.g., hot leg tube sheet areas, low row u-bends, bulges, wear, and dings) where bobbin probe response may be ambiguous, or does not provide adequate detection and/or diagnostic capabilities. The 8,601 tube sample also included a scope expansion at top-of-tubesheet (TTS) locations in the hot and cold legs, triggered by loose part wear.

Results

Table 1, "Millstone 3 RFO8 ECT Summary," and the discussion below provide a synopsis of the SG tube inspections and results. Tube specific results are presented in Attachments 2 through 7.

Steam Generator "A"

A total of 5965 bobbin and 5499 rotating pancake coils (RPC) examinations were performed in SG "A." This included an expansion of 2260 RPC examinations at the top of the tubesheet, and 133 special interest locations.

The primary degradation mechanism in SG "A" continues to be mechanical wear, mostly at the anti-vibration bar (AVB) locations. A total of 222 AVB wear indications (112 tubes), containing indications ranging in depth from 9 to 41 percent throughwall, were identified during the bobbin examination. These results are presented in Attachment 2, "'A' Steam Generator AVB Indications." Of these 112 tubes, 2 tubes (3 AVB locations) exceeded the plugging limit. The plugging limit is defined within Millstone Unit No. 3 Technical Specifications as an imperfection depth of 40 percent nominal tube wall thickness or greater. Additionally, 4 tubes were removed from service on a discretionary basis, with AVB wear exceeding 36 percent.

The RPC examination resulted in 43 volumetric indications affecting 36 tubes. Twenty-eight of these indications (25 tubes) were determined to be manufacturing burnish marks and not service related. These are reported as VOL in Attachment 3, "'A' Steam Generator Volumetric Indications." The remaining 15 indications were considered to be loose part wear or manufacturing burnish marks that could not be

confirmed with the bobbin coil. These are reported as single volumetric indications (SVIs) and are located at TTS. The SVIs are documented in Attachment 4, "'A" Steam Generator Single Volumetric Indications." All SVIs were sized using an EPRI Appendix H qualified technique. Of these 15 SVI indications, only two exceeded the plugging limit. Table 1, "Millstone 3 RFO8 ECT Summary," provides a breakdown of the depth distribution of these flaws.

The inspection results from SG "A" were classified as C-2 due to AVB and loose part wear. The C-2 category, per the Millstone Unit No. 3 Technical Specifications, resulted from the identification of "one or more tubes, but not more than 1% of the total tubes inspected" being defective. Since 100 percent of the tubes in the AVB region of both SGs were included in the initial inspection sample, no technical specification scope expansion was required. However, consistent with the Nuclear Energy Institute's NEI 97-06, "Steam Generator Program Guidelines," and the Millstone Steam Generator Program, a 20 percent expansion was performed at TTS locations in both the hot and cold legs of SG "A" to address the C-2 resulting from loose part wear. This expansion exceeds the Technical Specification scope expansion requirements for a C-2 result.

Steam Generator "C"

A total of 5983 bobbin and 3129 RPC examinations were performed in SG "C." The RPC examinations included 79 previous history locations and 15 special interest locations.

The only identified degradation mechanism in SG "C" continues to be mechanical wear at the AVB locations. A total of 20 tubes were identified as containing 54 AVB indications, ranging in depth from 10 percent throughwall to 45 percent throughwall. These results are presented in Attachment 5, "'C' Steam Generator AVB Indications." One hundred percent bobbin inspection of operable tubes identified that one tube had indications exceeding the plugging criteria. That location, Row 41, Column 61, was removed from service by the installation of Framatone Alloy 690 Rolled Mechanical Tube Plugs.

The RPC examination identified 16 volumetric indications in 14 tubes. Eight of these indications were determined to be manufacturing burnish marks and not service induced. These are reported as VOL in Attachment 6, "'C' Steam Generator Volumetric Indications." The remaining eight indications were considered to be loose part wear or manufacturing burnish marks that could not be confirmed with the bobbin coil. These are reported as SVIs and located at TTS. The SVIs are documented in Attachment 7, "'C' Steam Generator Single Volumetric Indications." All SVIs were sized per an EPRI Appendix H qualified technique. None of the 8 SVI indications exceeded the plugging limit. However, one SVI had an associated loose part indication and was discretionally removed from service. Table 1, "Millstone 3 RFO8 ECT Summary" provides a breakdown of the depth distribution of these flaws.

The inspection results from Steam Generator "C" were classified as C-1.

Tube Repairs

The plugging limit is defined within Technical Specifications as an imperfection depth of 40 percent or greater of the nominal tube wall thickness. The eddy current examination identified AVB flaws greater than or equal to the plugging limit in 3 tubes. These tubes are identified in Table 2, "Location of Tubes Plugged for AVB Wear Sized ≥ 40% TW During Millstone 3 RFO8." Additionally, two tubes were reported with SVIs exceeding the plugging limit. These are identified in Table 4, "Location of Tubes Plugged for SVI, OBS, or PLP During Millstone 3 RFO8."

Four tubes with AVB wear were removed from service on a discretionary basis. These tubes exhibited AVB wear greater than 36 percent throughwall, but less than the plugging limit (see Table 3, "Location of Discretionary Tubes Plugged for AVB Wear During Millstone 3 RFO8"). The remaining two tubes were conservatively plugged for the following reasons:

- One tube in the "C" SG was identified with an obstruction (OBS) that would not allow the insertion of a probe which would provide sufficient eddy current fill factor. That location, Row 1, Column 115, was removed from service.

- One tube in location Row 1, Column 4, of the "C" SG was identified with an SVI and in contact with an adjacent, lodged loose part (PLP). Although only minor tube damage has occurred, the damaged tube was stabilized and removed from service. A Framatone stabilizer was utilized to increase the damping of the tube, thereby reducing possible flow induced vibration, and also to prohibit interaction with adjacent tubes in the unlikely event of a complete severance.

These tubes are identified in Table 4, "Location of Tubes Plugged for SVI, OBS, or PLP During Millstone 3 RFO8."

The tubes removed from service during Millstone Unit No. 3 Refueling Outage 8 (RFO8) can be grouped into four categories:

- Seven tubes exhibited degradation attributed to AVB wear. This number includes four tubes having indications less than 40 percent throughwall, but removed on a discretionary basis.

- Two tubes exhibited an SVI which exceeded the plugging limit at the TTS. Millstone used a sizing technique qualified to EPRI Appendix H Guidelines for these indications.

- One tube was identified with an SVI and as being in close proximity to a non-retrievable loose part. This tube was removed from service on a discretionary basis.

- One tube was identified with an obstruction that would not allow the insertion of a probe that would provide sufficient eddy current fill factor.

The eleven tubes were removed from service on September 21 and 22, 2002, by the installation of a Frametone Alloy 690 Rolled Mechanical Tube Plug. Table 5, "Total Tubes Plugged to Date," provides historical documentation of all SG tubes plugged at Millstone Unit No. 3.

Condition Monitoring Assessment Summary

The condition of the SGs as determined during RFO8 using non-destructive examination (NDE) techniques qualified to EPRI's PWR Steam Generator Examination Guidelines, Rev. 5, Appendix H, met the three NEI 97-06 performance criteria. All indications of tube degradation identified during the examination were well below the applicable structural integrity limit, with required allowances for NDE sizing uncertainty. The examination revealed no evidence of plug degradation or installation deficiencies, and minimal primary to secondary leakage occurred (less than one gallon per day) during fuel cycle eight. No throughwall or near-throughwall defects were identified and no structural limits were exceeded, therefore the accident leakage performance criteria was not exceeded during the operating period prior to RFO8.

Operational Assessment Summary

There is reasonable assurance that the Millstone Unit No. 3 SGs can continue to operate until their next planned tube examinations (Refueling Outage 9 for SGs "B" and "D," Refueling Outage 10 for SGs "A" and "C"), without causing any of the NEI 97-06 performance criteria to be exceeded. The observed growth rates associated with AVB wear, foreign object wear, and flow distribution baffle wear supports the conclusion that no wear exceeding the structural limit, with allowances for NDE sizing uncertainty and NDE probability of detection, will occur prior to the next examination in any of the four SGs.

During RFO8, all foreign objects which could be retrieved were removed from the SGs. Upon completion of the RFO8 tube examination, all tubes with indications of AVB wear exceeding 36 percent throughwall were removed from service by plugging.

During Refueling Outage 7 (RFO7), visual examinations within the feedrings of all four SGs, and ultrasonic examinations of the feedrings in SGs "B" and "D" provided the data necessary to trend the progression of previously identified erosion. Feedring/J-tube erosion was identified, evaluated, and concluded to be acceptable for at least two additional cycles of operation. Consequently, this degradation will not threaten SG tube integrity during the next operating cycle.

A visual examination of upper internal components in all four SGs during RFO7, and in limited locations in SG "A" during RFO8, revealed no degradation which could threaten tube integrity. Therefore degradation of these components to the extent that could threaten tube integrity is not expected to occur prior to the next inspection of each of the SGs.

The absence of secondary side structural degradation and plug deficiencies provides a high level of confidence that tube degradation, related to secondary support structure

deficiencies, will not occur during these operating periods. The absence of secondary side structural degradation provides a high level of confidence that tube degradation caused by secondary support deterioration will not occur in any of the SGs prior to the next inspection of each SG.

TABLE 1: MILLSTONE 3 RFO8 ECT SUMMARY

	SG A	SG C	TOTAL
Number of Tubes (SG A and C only)	5,626	5,626	11,252
Number of Tubes Inspected F/L w/ Bobbin Probe	5,561	5,596	11,157
Number of Tubes Inspected w/ Bobbin Probe Hot Leg and Cold Leg Straight Sections Only (Row 1)	39	21	60
Number of Tubes Incomplete w/ Bobbin Probe due to Obstruction	0	1	1
Number of Tube Inspections w/ MRPC (Total)	5,483	3,118	8,601
• Hot Leg Transitions - Original Scope	2,985	2,855	5,840
• Hot Leg Transitions - Scope Expansion	1,134	0	1,134
• Row 1 and 2 U-Bends	121	121	242
• Hot Leg Misc. Special Interest - Diagnostic Exams and from Previous History (tubes)	95	98	193
• Cold Leg Transitions - Scope Expansion	1,129	35	1,164
• Cold Leg Misc. Special Interest - Diagnostic Exams and from Previous History (tubes)	19	9	28
Tubes with Max AVB Wear ≥ 40%	2	1	3
Tubes with Max AVB Wear ≥ 20% but < 40%	52	13	65
Tubes with Max AVB Wear < 20%	58	6	64
Tubes with Max SVI ≥ 40%	2	0	2
Tubes with Max SVI ≥ 20% but < 40%	2	3	5
Tubes with Max SVI < 20%	7	4	11
Tubes Plugged as a Result of SVI ≥ 40%	2	0	2
Tubes Plugged as a Result of AVB Wear ≥ 37%	6	1	7
Tubes Plugged as a Result of an Obstruction	0	1	1
Tubes Plugged on a Discretionary Basis	0	1	1

TABLE 2: LOCATION OF TUBES PLUGGED FOR AVB WEAR SIZED ≥ 40% TW DURING MILLSTONE 3 RFO8

A SG			C SG		
ROW	COLUMN	% THROUGH WALL	ROW	COLUMN	% THROUGH WALL
35	58	41%, 39%, 40%	41	61	44%, 45%
50	64	40%			

TABLE 3: LOCATION OF DISCRETIONARY TUBES PLUGGED FOR AVB WEAR DURING MILLSTONE 3 RFO8

A SG ONLY		
ROW	COLUMN	% THROUGHWALL
34	60	37%
42	99	38%, 38%
50	51	37%
51	63	37%

TABLE 4: LOCATION OF TUBES PLUGGED FOR SVI, OBS, OR PLP DURING MILLSTONE 3 RFO8

A SG			C SG		
ROW	COLUMN	INDICATION	ROW	COLUMN	INDICATION
4	122	SVI: 47%	1	4	SVI, PLP (preventive plug w/stabilizer)
10	116	SVI: 64%	1	115	OBS

TABLE 5: TOTAL TUBES PLUGGED TO DATE

	SG A	SG B	SG C	SG D	TOTAL
Fabrication	1	2	2	0	5
Preservice	2	1	1	1	5
RFO1	1	0	0	1	2
RFO2	4	-	0	-	4
RFO3	-	0	-	5	5
RFO4	6	-	1	0	7
RFO5	-	1	-	10	11
MID CYCLE	-	-	2	-	2
RFO6	12	-	2	-	14
RFO7	-	0	-	51	51
RFO8	8	-	3	-	11
TOTAL	34	4	11	68	117

Attachment 2

Millstone Power Station, Unit No. 3

"A" Steam Generator AVB Indications

Millstone Unit 3
1-19%TW Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 1-19%TW Indications	90

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 90
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Thu Oct 10 14:50:11 2002

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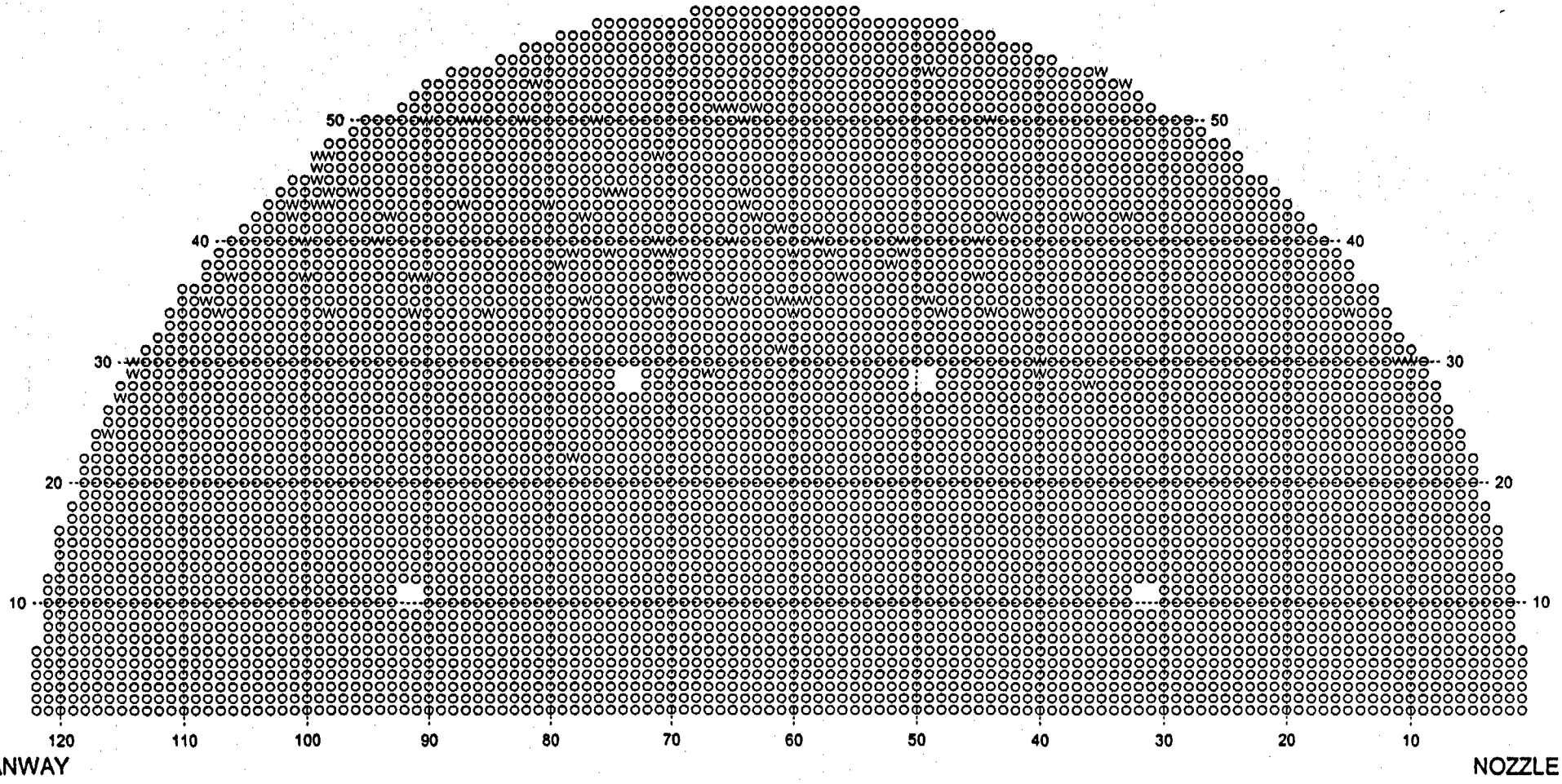

1-19 %TW Indications

QUERY: 1-19%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
22	78	0.48	0	P 2	TWD	14	AV5	+0.24	TEH	TEC			24	COLD	560UL
		0.38	0	P 2	TWD	12	AV6	+0.05	TEH	TEC			24	COLD	560UL
24	116	0.46	0	P 2	TWD	14	AV5	+0.32	TEH	TEC			48	COLD	560UL
27	115	0.66	0	P 2	TWD	19	AV1	-0.22	TEH	TEC			49	COLD	560UL
28	36	0.32	0	P 2	TWD	11	AV5	-0.17	TEH	TEC			8	COLD	560UL
29	40	0.38	0	P 2	TWD	12	AV2	+0.00	TEH	TEC			8	COLD	560UL
29	67	0.64	0	P 2	TWD	18	AV2	-0.03	TEH	TEC			25	COLD	560UL
29	114	0.41	0	P 2	TWD	13	AV5	+0.11	TEH	TEC			48	COLD	560UL
30	10	0.64	0	P 2	TWD	16	AV5	-0.03	TEH	TEC			4	COLD	560UL
30	11	0.33	0	P 2	TWD	11	AV5	-0.03	TEH	TEC			3	COLD	560UL
30	40	0.35	0	P 2	TWD	11	AV2	-0.16	TEH	TEC			7	COLD	560UL
30	114	0.40	0	P 2	TWD	12	AV1	-0.03	TEH	TEC			48	COLD	560UL
31	61	0.35	0	P 2	TWD	12	AV5	-0.19	TEH	TEC			27	COLD	560UL
34	15	0.33	0	P 2	TWD	11	AV6	-0.08	TEH	TEC			3	COLD	560UL
34	41	0.64	0	P 2	TWD	18	AV3	-0.08	TEH	TEC			29	COLD	560UL
		0.39	0	P 2	TWD	12	AV4	-0.11	TEH	TEC			29	COLD	560UL
34	44	0.35	0	P 2	TWD	11	AV3	+0.23	TEH	TEC			28	COLD	560UL
34	48	0.62	0	P 2	TWD	18	AV1	-0.10	TEH	TEC			28	COLD	560UL
34	60	0.45	0	P 2	TWD	15	AV2	-0.08	TEH	TEC			27	COLD	560UL
34	85	0.65	0	P 2	TWD	19	AV5	-0.11	TEH	TEC			32	COLD	560UL
34	91	0.50	0	P 2	TWD	16	AV2	+0.03	TEH	TEC			32	COLD	560UL
34	98	0.34	0	P 2	TWD	10	AV4	+0.13	TEH	TEC			34	COLD	560UL
34	107	0.37	0	P 2	TWD	12	AV4	-0.03	TEH	TEC			49	COLD	560UL
35	49	0.63	0	P 2	TWD	18	AV5	-0.24	TEH	TEC			28	COLD	560UL
35	59	0.39	0	P 2	TWD	13	AV3	+0.27	TEH	TEC			27	COLD	560UL
35	60	0.48	0	P 2	TWD	12	AV5	-0.03	TEH	TEC			26	COLD	560UL
35	61	0.54	0	P 2	TWD	18	AV4	+0.11	TEH	TEC			27	COLD	560UL
		0.47	0	P 2	TWD	16	AV2	-0.19	TEH	TEC			27	COLD	560UL
35	65	0.51	0	P 2	TWD	15	AV2	+0.16	TEH	TEC			25	COLD	560UL
		0.51	0	P 2	TWD	15	AV4	-0.05	TEH	TEC			25	COLD	560UL
		0.48	0	P 2	TWD	14	AV5	-0.03	TEH	TEC			25	COLD	560UL
		0.47	0	P 2	TWD	14	AV3	+0.08	TEH	TEC			25	COLD	560UL
35	71	0.36	149	P 2	TWD	12	AV6	+0.00	TEH	TEC			25	COLD	560UL
		0.48	0	P 2	TWD	14	AV5	-0.25	TEH	TEC			25	COLD	560UL
35	77	0.38	0	P 2	TWD	12	AV2	+0.11	TEH	TEC			25	COLD	560UL
		0.55	0	P 2	TWD	16	AV4	-0.05	TEH	TEC			25	COLD	560UL
35	108	0.38	0	P 2	TWD	12	AV2	-0.08	TEH	TEC			49	COLD	560UL
		0.47	0	P 2	TWD	14	AV3	-0.08	TEH	TEC			49	COLD	560UL
37	45	0.57	0	P 2	TWD	16	AV3	+0.22	TEH	TEC			29	COLD	560UL
37	56	0.54	0	P 2	TWD	14	AV3	+0.03	TEH	TEC			26	COLD	560UL
		0.67	0	P 2	TWD	16	AV4	+0.10	TEH	TEC			26	COLD	560UL
37	69	0.60	0	P 2	TWD	17	AV5	-0.05	TEH	TEC			25	COLD	560UL
		0.61	0	P 2	TWD	17	AV6	-0.08	TEH	TEC			25	COLD	560UL
37	90	0.58	0	P 2	TWD	14	AV5	+0.14	TEH	TEC			33	COLD	560UL
		0.56	0	P 2	TWD	14	AV4	+0.03	TEH	TEC			33	COLD	560UL
37	91	0.72	0	P 2	TWD	18	AV6	-0.06	TEH	TEC			33	COLD	560UL
		0.65	0	P 2	TWD	16	AV4	-0.19	TEH	TEC			33	COLD	560UL
		0.68	0	P 2	TWD	17	AV3	+0.03	TEH	TEC			33	COLD	560UL
37	100	0.49	0	P 2	TWD	13	AV5	-0.16	TEH	TEC			35	COLD	560UL
		0.35	0	P 2	TWD	10	AV4	-0.25	TEH	TEC			35	COLD	560UL
		0.63	0	P 2	TWD	16	AV3	-0.22	TEH	TEC			35	COLD	560UL
37	106	0.48	0	P 2	TWD	15	AV5	-0.03	TEH	TEC			49	COLD	560UL
38	52	0.58	0	P 2	TWD	14	AV2	+0.26	TEH	TEC			26	COLD	560UL
38	79	0.38	0	P 2	TWD	12	AV6	-0.13	TEH	TEC			24	COLD	560UL
39	51	0.43	0	P 2	TWD	15	AV4	+0.16	TEH	TEC			27	COLD	560UL
		0.50	0	P 2	TWD	16	AV3	-0.08	TEH	TEC			27	COLD	560UL
39	57	0.44	0	P 2	TWD	15	AV3	+0.05	TEH	TEC			27	COLD	560UL
		0.36	0	P 2	TWD	12	AV1	+0.11	TEH	TEC			27	COLD	560UL
39	60	0.80	0	P 2	TWD	19	AV4	+0.05	TEH	TEC			26	COLD	560UL
39	70	0.37	0	P 2	TWD	11	AV2	+0.11	TEH	TEC			25	COLD	560UL
		0.62	0	P 2	TWD	18	AV3	+0.03	TEH	TEC			25	COLD	560UL
39	71	0.47	0	P 2	TWD	14	AV5	-0.19	TEH	TEC			25	COLD	560UL
39	75	0.55	0	P 2	TWD	16	AV5	-0.08	TEH	TEC			25	COLD	560UL
39	78	0.38	0	P 2	TWD	12	AV3	-0.05	TEH	TEC			24	COLD	560UL
40	45	0.45	0	P 2	TWD	14	AV3	+0.13	TEH	TEC			28	COLD	560UL
		0.50	0	P 2	TWD	15	AV5	-0.05	TEH	TEC			28	COLD	560UL
40	51	0.80	0	P 2	TWD	19	AV5	+0.03	TEH	TEC			26	COLD	560UL
40	58	0.46	0	P 2	TWD	12	AV2	-0.16	TEH	TEC			26	COLD	560UL
		0.64	0	P 2	TWD	16	AV3	-0.16	TEH	TEC			26	COLD	560UL
40	65	0.68	0	P 2	TWD	19	AV2	-0.08	TEH	TEC			24	COLD	560UL
40	71	0.64	0	P 2	TWD	18	AV2	+0.05	TEH	TEC			24	COLD	560UL
40	94	0.67	0	P 2	TWD	17	AV5	-0.05	TEH	TEC			34	COLD	560UL
40	100	0.47	0	P 2	TWD	14	AV3	-0.13	TEH	TEC			48	COLD	560UL
41	61	0.50	0	P 2	TWD	11	AV3	+0.03	TEH	TEC			19	COLD	560UL
		0.76	0	P 2	TWD	16	AV4	+0.03	TEH	TEC			19	COLD	560UL
42	33	0.34	0	P 2	TWD	13	AV4	+0.00	TEH	TEC			16	COLD	560UL

1-19 %TW Indications

QUERY: 1-19%TW Indications.qry

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
42	37	0.48	0	P 2	TWD	13	AV2	-0.03	TEH	TEC			15	COLD	560UL
42	43	0.53	0	P 2	TWD	17	AV2	+0.08	TEH	TEC			18	COLD	560UL
		0.46	0	P 2	TWD	16	AV3	+0.11	TEH	TEC			18	COLD	560UL
42	63	0.65	0	P 2	TWD	14	AV3	+0.18	TEH	TEC			19	COLD	560UL
		0.44	0	P 2	TWD	10	AV4	+0.03	TEH	TEC			19	COLD	560UL
42	77	0.41	0	P 2	TWD	12	AV3	+0.05	TEH	TEC			23	COLD	560UL
42	93	0.49	0	P 2	TWD	12	AV3	-0.18	TEH	TEC			30	COLD	560UC
		0.72	0	P 2	TWD	18	AV4	-0.05	TEH	TEC			30	COLD	560UC
42	101	0.61	0	P 2	TWD	17	AV2	+0.00	TEH	TEC			47	COLD	560UL
43	64	0.43	0	P 2	TWD	10	AV3	+0.00	TEH	TEC			19	COLD	560UL
		0.44	0	P 2	TWD	10	AV4	+0.08	TEH	TEC			19	COLD	560UL
		0.70	0	P 2	TWD	15	AV5	-0.13	TEH	TEC			19	COLD	560UL
43	80	0.34	0	P 2	TWD	11	AV5	-0.06	TEH	TEC			31	COLD	560UL
		0.60	0	P 2	TWD	18	AV6	+0.03	TEH	TEC			31	COLD	560UL
43	87	0.65	0	P 2	TWD	19	AV2	+0.14	TEH	TEC			31	COLD	560UL
		0.32	0	P 2	TWD	11	AV3	+0.08	TEH	TEC			31	COLD	560UL
43	98	0.58	0	P 2	TWD	15	AV4	+0.03	TEH	TEC			30	COLD	560UC
		0.40	0	P 2	TWD	10	AV5	-0.03	TEH	TEC			30	COLD	560UC
43	99	0.69	0	P 2	TWD	19	AV4	+0.00	TEH	TEC			46	COLD	560UL
43	101	0.44	0	P 2	TWD	14	AV3	+0.00	TEH	TEC			46	COLD	560UL
44	64	0.54	0	P 2	TWD	18	AV3	+0.00	TEH	TEC			20	COLD	560UL
44	74	0.44	0	P 2	TWD	12	AV4	+0.00	TEH	TEC			23	COLD	560UL
		0.67	0	P 2	TWD	17	AV5	+0.24	TEH	TEC			23	COLD	560UL
		0.62	0	P 2	TWD	16	AV6	+0.08	TEH	TEC			23	COLD	560UL
44	75	0.34	0	P 2	TWD	10	AV3	+0.05	TEH	TEC			23	COLD	560UL
44	96	0.45	0	P 2	TWD	14	AV2	+0.00	TEH	TEC			31	COLD	560UL
		0.64	0	P 2	TWD	19	AV4	+0.00	TEH	TEC			31	COLD	560UL
		0.41	0	P 2	TWD	13	AV5	-0.11	TEH	TEC			31	COLD	560UL
44	98	0.36	0	P 2	TWD	12	AV1	+0.03	TEH	TEC			31	COLD	560UL
45	99	0.51	0	P 2	TWD	15	AV5	+0.00	TEH	TEC			46	COLD	560UL
		0.62	0	P 2	TWD	18	AV4	+0.00	TEH	TEC			46	COLD	560UL
46	99	0.63	0	P 2	TWD	18	AV5	+0.06	TEH	TEC			47	COLD	560UL
47	71	0.33	0	P 2	TWD	12	AV2	+0.11	TEH	TEC			22	COLD	560UL
47	98	0.30	0	P 2	TWD	10	AV3	-0.03	TEH	TEC			47	COLD	560UL
47	99	0.56	0	P 2	TWD	17	AV6	+0.00	TEH	TEC			46	COLD	560UL
50	44	0.40	0	P 2	TWD	12	AV4	+0.21	TEH	TEC			17	COLD	560UL
50	64	0.36	0	P 2	TWD	13	AV6	-0.14	TEH	TEC			20	COLD	560UL
50	76	0.65	0	P 2	TWD	17	AV3	-0.05	TEH	TEC			23	COLD	560UL
50	82	0.58	0	P 2	TWD	15	AV2	+0.00	TEH	TEC			30	COLD	560UC
		0.66	0	P 2	TWD	17	AV3	-0.10	TEH	TEC			30	COLD	560UC
		0.56	0	P 2	TWD	14	AV4	-0.16	TEH	TEC			30	COLD	560UC
50	86	0.51	0	P 2	TWD	13	AV2	+0.00	TEH	TEC			30	COLD	560UC
50	87	0.57	0	P 2	TWD	14	AV5	-0.11	TEH	TEC			30	COLD	560UC
50	90	0.51	0	P 2	TWD	13	AV5	-0.08	TEH	TEC			30	COLD	560UC
		0.51	0	P 2	TWD	13	AV4	-0.13	TEH	TEC			30	COLD	560UC
51	63	0.27	0	P 2	TWD	11	AV5	+0.00	TEH	TEC			20	COLD	560UL
		0.54	0	P 2	TWD	18	AV3	+0.00	TEH	TEC			20	COLD	560UL
51	65	0.56	0	P 2	TWD	19	AV5	-0.16	TEH	TEC			20	COLD	560UL
51	66	0.37	0	P 2	TWD	9	AV3	+0.26	TEH	TEC			19	COLD	560UL
53	33	0.71	0	P 2	TWD	18	AV4	+0.03	TEH	TEC			15	COLD	560UL
		0.35	0	P 2	TWD	10	AV6	-0.05	TEH	TEC			15	COLD	560UL
53	81	0.45	0	P 2	TWD	14	AV1	+0.06	TEH	TEC			31	COLD	560UL
54	35	0.70	0	P 2	TWD	18	AV5	-0.03	TEH	TEC			15	COLD	560UL
54	49	0.52	0	P 2	TWD	17	AV2	+0.05	TEH	TEC			18	COLD	560UL

Total Tubes : 90
Total Records: 130

Millstone Unit 3
20-36%TW Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 20-36%TW Indications	54

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 54
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Thu Oct 10 14:52:24 2002

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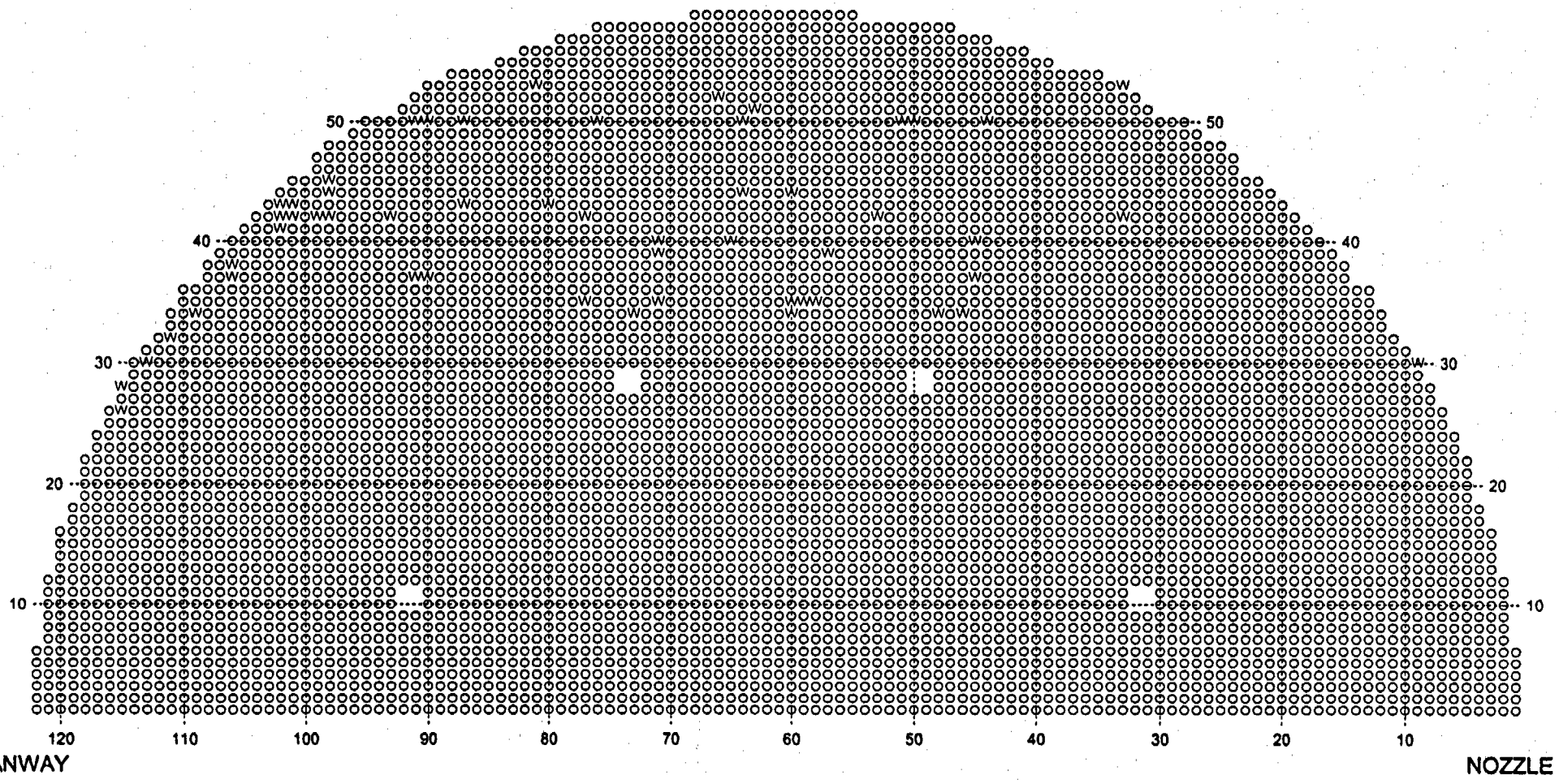

20-36 %TW Indications

QUERY: 20-36%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
26	115	1.11	0	P 2	TWD	26	AV1	-0.37	TEH	TEC			48	COLD	560UL
28	115	1.38	0	P 2	TWD	30	AV1	-0.40	TEH	TEC			48	COLD	560UL
30	9	1.49	0	P 2	TWD	32	AV5	+0.0	TEH	TEC			3	COLD	560UL
30	113	0.98	0	P 2	TWD	24	AV5	+0.17	TEH	TEC			49	COLD	560UL
32	111	0.77	0	P 2	TWD	21	AV5	+0.00	TEH	TEC			48	COLD	560UL
		0.85	0	P 2	TWD	22	AV4	+0.00	TEH	TEC			48	COLD	560UL
34	46	1.35	0	P 2	TWD	29	AV5	-0.03	TEH	TEC			29	COLD	560UL
		1.52	0	P 2	TWD	32	AV6	+0.08	TEH	TEC			29	COLD	560UL
34	48	0.73	0	P 2	TWD	20	AV2	-0.05	TEH	TEC			28	COLD	560UL
		1.42	0	P 2	TWD	31	AV3	-0.03	TEH	TEC			28	COLD	560UL
34	60	1.25	0	P 2	TWD	31	AV3	+0.00	TEH	TEC			27	COLD	560UL
		0.99	0	P 2	TWD	27	AV5	+0.00	TEH	TEC			27	COLD	560UL
34	73	1.27	0	P 2	TWD	28	AV4	+0.24	TEH	TEC			24	COLD	560UL
		1.73	0	P 2	TWD	34	AV5	-0.16	TEH	TEC			24	COLD	560UL
34	109	1.28	0	P 2	TWD	29	AV4	+0.00	TEH	TEC			48	COLD	560UL
35	58	1.12	0	P 2	TWD	29	AV2	+0.05	TEH	TEC			27	COLD	560UL
		0.87	0	P 2	TWD	25	AV6	+0.11	TEH	TEC			27	COLD	560UL
35	59	0.70	0	P 2	TWD	21	AV6	-0.11	TEH	TEC			27	COLD	560UL
		1.09	0	P 2	TWD	28	AV2	+0.33	TEH	TEC			27	COLD	560UL
35	60	0.84	0	P 2	TWD	20	AV4	+0.03	TEH	TEC			26	COLD	560UL
35	71	0.93	0	P 2	TWD	24	AV4	+0.19	TEH	TEC			25	COLD	560UL
35	77	0.74	0	P 2	TWD	20	AV3	-0.03	TEH	TEC			25	COLD	560UL
37	45	1.18	0	P 2	TWD	27	AV2	+0.03	TEH	TEC			29	COLD	560UL
		0.75	0	P 2	TWD	20	AV5	-0.19	TEH	TEC			29	COLD	560UL
37	90	1.01	0	P 2	TWD	23	AV3	+0.08	TEH	TEC			33	COLD	560UL
37	91	1.19	0	P 2	TWD	26	AV5	-0.08	TEH	TEC			33	COLD	560UL
37	106	0.73	0	P 2	TWD	20	AV4	-0.14	TEH	TEC			49	COLD	560UL
38	106	0.75	0	P 2	TWD	20	AV5	+0.00	TEH	TEC			48	COLD	560UL
		0.80	0	P 2	TWD	21	AV4	-0.08	TEH	TEC			48	COLD	560UL
		0.95	0	P 2	TWD	24	AV3	+0.00	TEH	TEC			48	COLD	560UL
39	57	0.64	0	P 2	TWD	20	AV4	+0.08	TEH	TEC			27	COLD	560UL
		1.44	0	P 2	TWD	33	AV2	-0.05	TEH	TEC			27	COLD	560UL
39	71	0.99	0	P 2	TWD	24	AV4	+0.27	TEH	TEC			25	COLD	560UL
40	45	1.19	0	P 2	TWD	28	AV4	+0.05	TEH	TEC			28	COLD	560UL
40	65	1.84	0	P 2	TWD	35	AV4	-0.05	TEH	TEC			24	COLD	560UL
		0.82	0	P 2	TWD	21	AV5	-0.18	TEH	TEC			24	COLD	560UL
40	71	0.73	0	P 2	TWD	20	AV3	-0.16	TEH	TEC			24	COLD	560UL
		1.01	0	P 2	TWD	25	AV4	-0.18	TEH	TEC			24	COLD	560UL
41	102	1.29	0	P 2	TWD	29	AV4	+0.03	TEH	TEC			47	COLD	560UL
42	33	0.87	0	P 2	TWD	26	AV3	+0.05	TEH	TEC			16	COLD	560UL
42	53	0.87	0	P 2	TWD	25	AV4	-0.06	TEH	TEC			20	COLD	560UL
42	77	0.91	0	P 2	TWD	22	AV4	+0.05	TEH	TEC			23	COLD	560UL
42	93	0.87	0	P 2	TWD	21	AV5	-0.05	TEH	TEC			30	COLD	560UC
42	98	1.49	0	P 2	TWD	32	AV3	+0.03	TEH	TEC			31	COLD	560UL
		1.69	0	P 2	TWD	34	AV4	+0.08	TEH	TEC			31	COLD	560UL
42	99	0.68	0	P 2	TWD	20	AV5	+0.00	TEH	TEC			31	COLD	560UL
42	101	0.93	0	P 2	TWD	23	AV4	+0.03	TEH	TEC			47	COLD	560UL
		1.15	0	P 2	TWD	27	AV5	+0.00	TEH	TEC			47	COLD	560UL
42	102	1.23	0	P 2	TWD	29	AV5	+0.00	TEH	TEC			46	COLD	560UL
		1.74	0	P 2	TWD	35	AV4	+0.00	TEH	TEC			46	COLD	560UL
		0.82	0	P 2	TWD	22	AV3	+0.00	TEH	TEC			46	COLD	560UL
43	80	0.80	0	P 2	TWD	22	AV3	-0.03	TEH	TEC			31	COLD	560UL
		0.92	0	P 2	TWD	24	AV4	-0.03	TEH	TEC			31	COLD	560UL
43	87	0.92	0	P 2	TWD	24	AV4	+0.00	TEH	TEC			31	COLD	560UL
		0.93	0	P 2	TWD	24	AV5	-0.08	TEH	TEC			31	COLD	560UL
43	101	0.75	0	P 2	TWD	21	AV5	+0.00	TEH	TEC			46	COLD	560UL
		0.81	0	P 2	TWD	22	AV4	+0.00	TEH	TEC			46	COLD	560UL
43	102	0.79	0	P 2	TWD	21	AV5	+0.00	TEH	TEC			46	COLD	560UL
		0.71	0	P 2	TWD	20	AV4	+0.00	TEH	TEC			46	COLD	560UL
44	60	2.36	0	P 2	TWD	36	AV2	+0.21	TEH	TEC			19	COLD	560UL
		1.25	0	P 2	TWD	24	AV3	+0.00	TEH	TEC			19	COLD	560UL
		1.41	0	P 2	TWD	26	AV4	+0.16	TEH	TEC			19	COLD	560UL
44	64	1.12	0	P 2	TWD	29	AV2	+0.00	TEH	TEC			20	COLD	560UL
44	98	1.10	0	P 2	TWD	27	AV2	+0.00	TEH	TEC			31	COLD	560UL
		0.73	0	P 2	TWD	21	AV4	+0.00	TEH	TEC			31	COLD	560UL
45	98	0.96	0	P 2	TWD	24	AV4	+0.03	TEH	TEC			47	COLD	560UL
50	44	0.98	0	P 2	TWD	24	AV5	-0.08	TEH	TEC			17	COLD	560UL
50	50	0.75	0	P 2	TWD	22	AV4	-0.14	TEH	TEC			18	COLD	560UL
50	51	0.66	0	P 2	TWD	21	AV5	-0.17	TEH	TEC			20	COLD	560UL
		0.67	0	P 2	TWD	21	AV3	+0.00	TEH	TEC			20	COLD	560UL
50	64	0.81	0	P 2	TWD	24	AV4	+0.11	TEH	TEC			20	COLD	560UL
		0.89	0	P 2	TWD	25	AV3	-0.11	TEH	TEC			20	COLD	560UL
		1.13	0	P 2	TWD	29	AV2	+0.00	TEH	TEC			20	COLD	560UL
50	76	0.90	0	P 2	TWD	22	AV2	+0.05	TEH	TEC			23	COLD	560UL
50	87	0.92	0	P 2	TWD	22	AV2	-0.11	TEH	TEC			30	COLD	560UC
50	90	1.67	0	P 2	TWD	33	AV2	-0.05	TEH	TEC			30	COLD	560UC

20-36 %TW Indications

QUERY: 20-36%TW Indications.qry

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
		1.49	0	P 2	TWD	31	AV3	-0.08	TEH	TEC			30	COLD	560UC
50	91	1.44	0	P 2	TWD	30	AV2	-0.08	TEH	TEC			30	COLD	560UC
		1.24	0	P 2	TWD	27	AV3	-0.11	TEH	TEC			30	COLD	560UC
51	63	0.72	0	P 2	TWD	22	AV4	+0.27	TEH	TEC			20	COLD	560UL
52	66	1.05	0	P 2	TWD	28	AV4	+0.00	TEH	TEC			20	COLD	560UL
53	33	1.94	0	P 2	TWD	35	AV5	-0.03	TEH	TEC			15	COLD	560UL
53	81	1.38	0	P 2	TWD	31	AV3	+0.03	TEH	TEC			31	COLD	560UL

Total Tubes : 54
Total Records: 83

Millstone Unit 3
37-100%TW Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W37-100%TW Indications	6

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 6
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Thu Oct 10 14:53:02 2002

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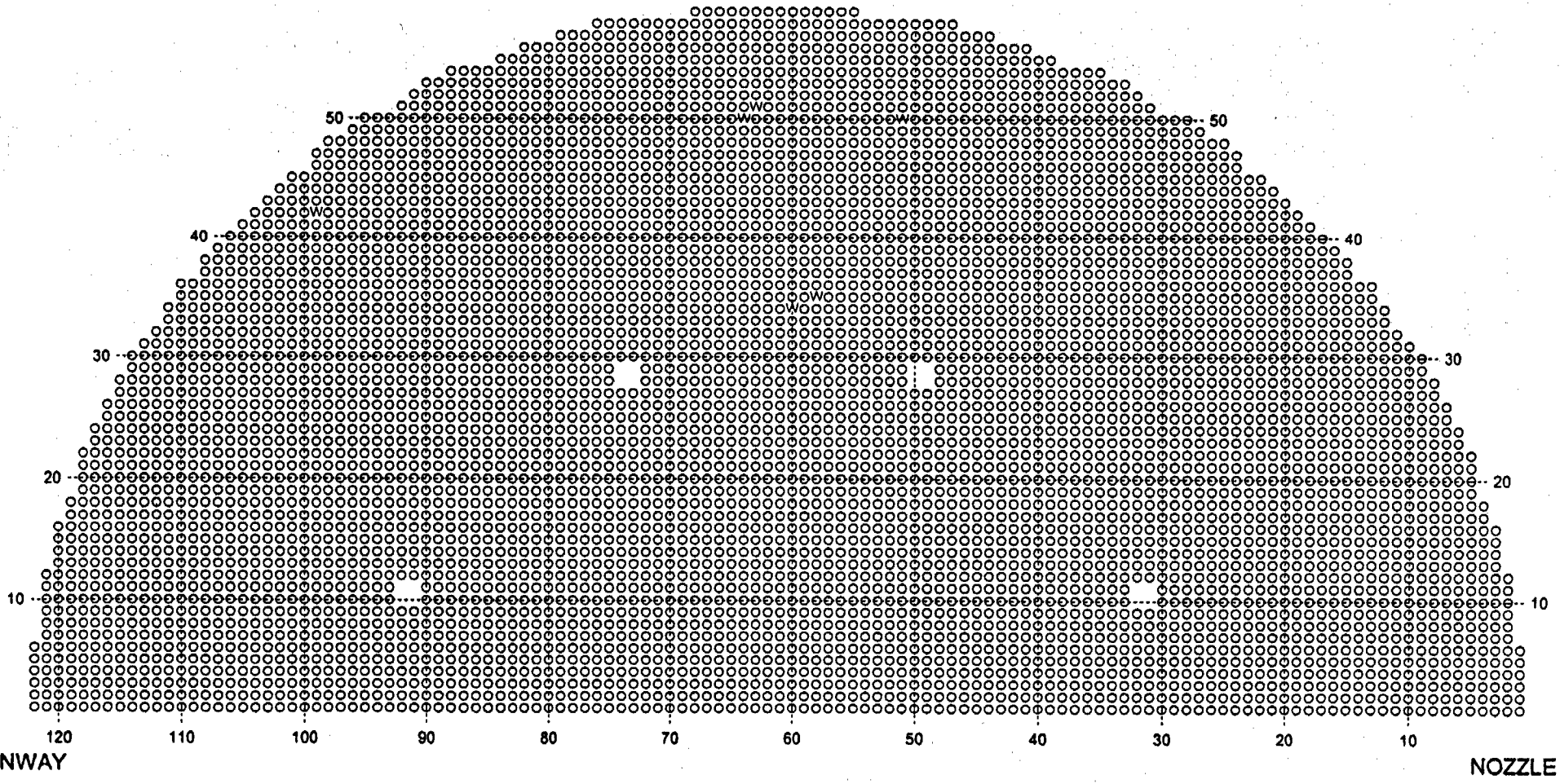

37-100 %TW Indications

QUERY: 37-100%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
34	60	1.90	0	P 2	TWD	37	AV4	-0.03	TEH	TEC			27	COLD	560UL
35	58	2.07	0	P 2	TWD	39	AV4	+0.00	TEH	TEC			27	COLD	560UL
		2.38	0	P 2	TWD	41	AV3	+0.00	TEH	TEC	LAR		27	COLD	560UL
		2.26	0	P 2	TWD	40	AV5	+0.23	TEH	TEC	LAR		27	COLD	560UL
42	99	2.11	0	P 2	TWD	38	AV3	-0.05	TEH	TEC			31	COLD	560UL
		2.11	0	P 2	TWD	38	AV4	-0.08	TEH	TEC			31	COLD	560UL
50	51	1.84	0	P 2	TWD	37	AV4	-0.03	TEH	TEC			20	COLD	560UL
50	64	2.25	0	P 2	TWD	40	AV5	-0.16	TEH	TEC	LAR		20	COLD	560UL
51	63	1.87	0	P 2	TWD	37	AV2	+0.27	TEH	TEC			20	COLD	560UL

Total Tubes : 6
Total Records: 9

Attachment 3

Millstone Power Station, Unit No. 3

"A" Steam Generator Volumetric Indications

Millstone Unit 3
VOL Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
V VOL Indications	25

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 25
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Thu Oct 10 15:51:47 2002

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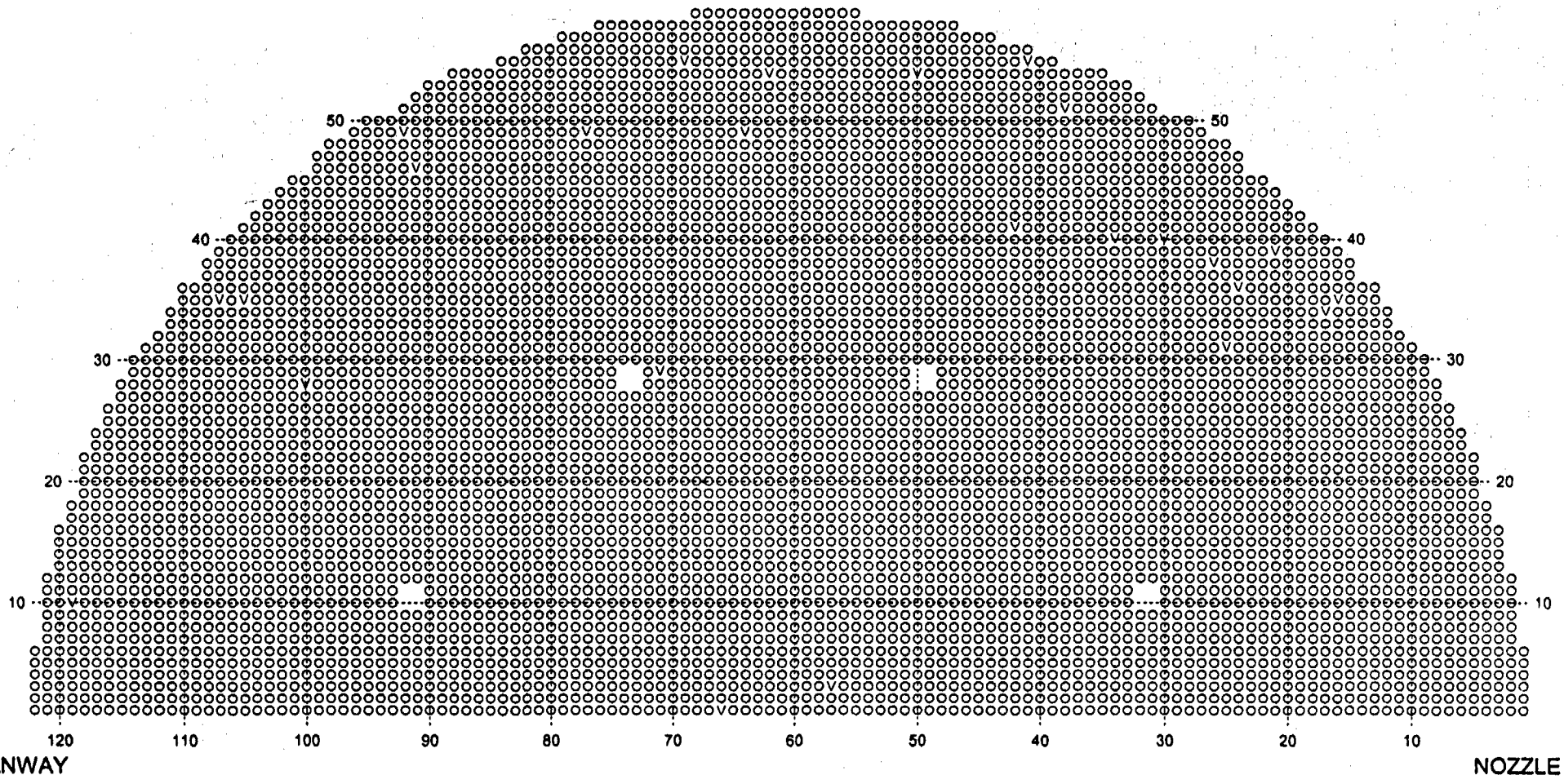

VOL Indications

QUERY: VOL Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
1	66	0.12	113	4	VOL		TSC	+4.12	TSC	TSC			86	COLD	560PP
3	57	0.90	85	3	VOL		02H	+12.25	02H	03H			38	HOT	560PP
10	119	0.60	69	3	VOL		TSH	+3.17	TSH	TSH			39	HOT	560PP
28	100	0.17	5	4	VOL		01H	+8.79	01H	02H			67	HOT	560PP
29	71	0.14	142	4	VOL		01H	+0.08	01H	02H			67	HOT	560PP
31	25	0.71	107	3	VOL		06C	+22.76	06C	07C			64	COLD	560PP
34	17	0.66	61	3	VOL		TSH	+0.67	TSH	TSH			7	HOT	560PP
35	16	1.98	112	3	VOL		02H	+24.11	02H	03H			67	HOT	560PP
35	105	0.67	90	3	VOL		TSC	+3.21	TSC	TSC			74	COLD	560PP
35	107	0.93	87	3	VOL		TSC	+4.81	TSC	TSC			74	COLD	560PP
36	24	1.03	97	3	VOL		TSH	+7.47	TSH	TSH			68	HOT	560PP
38	26	2.72	157	3	VOL		03H	+0.34	03H	03H			67	HOT	560PP
39	21	1.08	111	3	VOL		TSC	+1.99	TSC	TSC			67	COLD	560PP
40	30	0.52	88	3	VOL		TSH	+1.44	TSH	TSH			7	HOT	560PP
40	34	0.48	36	3	VOL		08H	-0.06	08H	08H			67	HOT	560PP
41	42	1.71	114	3	VOL		06H	+35.94	06H	07H			38	HOT	560PP
46	91	0.74	93	3	VOL		04C	+6.37	04C	05C			64	COLD	560PP
49	64	0.46	26	3	VOL		03C	+34.98	03C	04C			64	COLD	560PP
49	77	0.92	86	3	VOL		TSH	+3.28	TSH	TSH			79	HOT	560PP
		0.85	73	3	VOL		05C	+2.19	05C	06C			83	COLD	560PP
		0.67	73	3	VOL		TSH	+2.93	TSH	01H			36	HOT	560PP
		0.76	78	3	VOL		TSH	+3.28	TSH	TSH			73	HOT	560PP
49	92	3.20	11	3	VOL		TSH	-1.05	TSH	TSH			24	HOT	560PP
51	38	0.76	82	3	VOL		TSH	+7.81	TSH	TSH			68	HOT	560PP
54	50	0.22	75	3	VOL		TSH	+2.23	TSH	TSH	HR		12	HOT	560PP
54	62	0.47	70	3	VOL		02C	+25.55	02C	03C			64	COLD	560PP
55	41	0.19	89	3	VOL		TSC	+4.03	TSC	TSC			78	COLD	560PP
55	69	0.25	115	3	VOL		TSH	+5.31	TSH	TSH			72	HOT	560PP

Total Tubes : 25
Total Records: 28

Attachment 4

Millstone Power Station, Unit No. 3

"A" Steam Generator Single Volumetric Indications

Millstone Unit 3
1-19%TW for SVI

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 1-19%TW for SVI	10

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 10
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Thu Oct 10 15:48:54 2002

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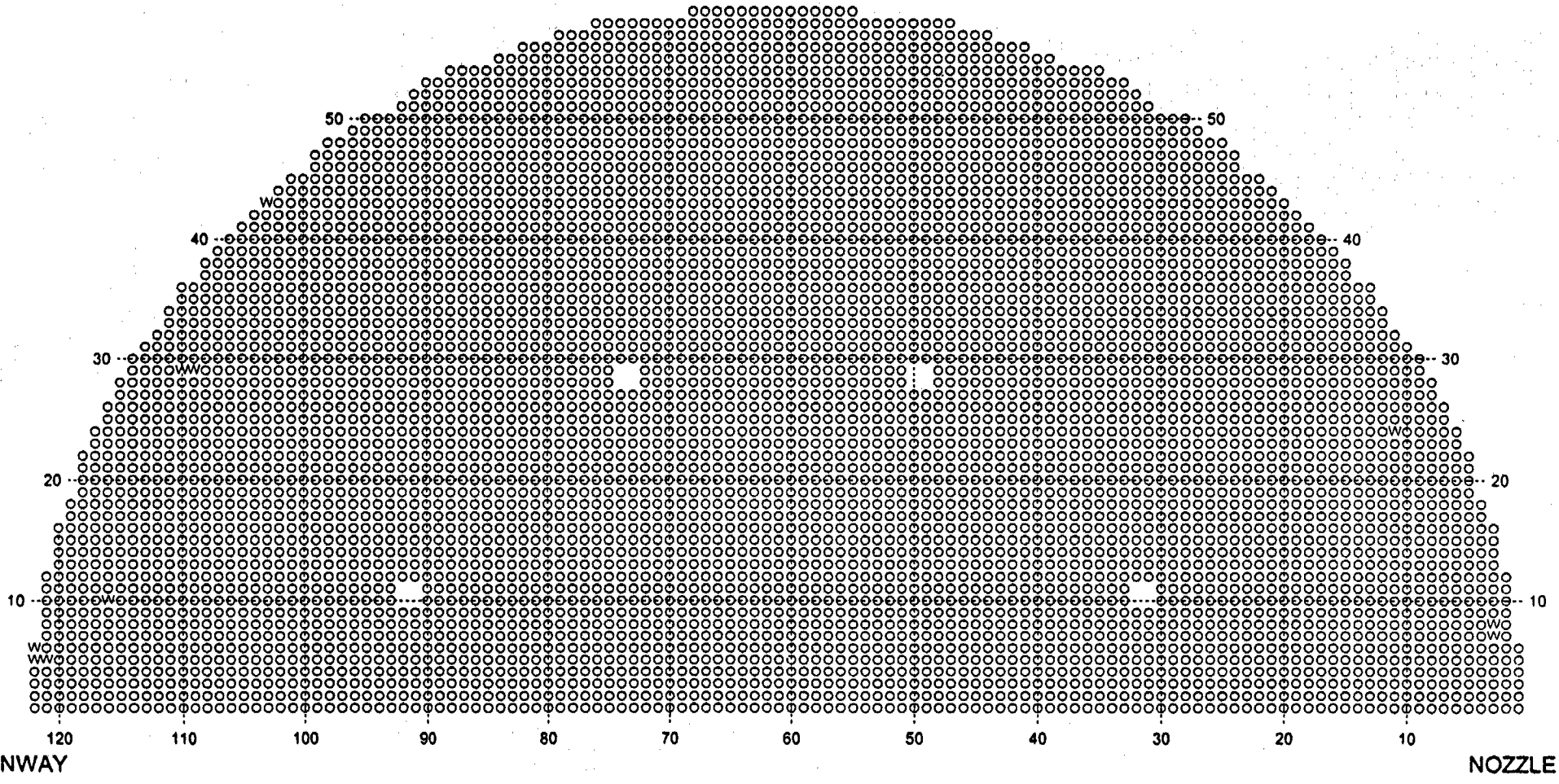

1-19% TW Indications for SVI Sizing

QUERY: 1-19%TW for SVI

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
5	121	0.09	249	4	TWD	11	TSH	+1.13	TSH	TSH			52	HOT	560PP
		0.05	0	P12	TWD	2	TSH	+1.13	TSH	TSH			52	HOT	560PP
5	122	0.17	0	P12	TWD	7	TSH	+0.51	TSH	TSH			52	HOT	560PP
		0.34	0	P12	TWD	14	TSH	+0.97	TSH	TSH			52	HOT	560PP
		0.23	255	P12	TWD	9	TSH	+1.71	TSH	TSH			52	HOT	560PP
6	122	0.04	65	4	TWD	9	TSH	+4.12	TSH	TSH			52	HOT	560PP
		0.06	0	P12	TWD	2	TSH	+4.12	TSH	TSH			52	HOT	560PP
7	3	0.18	0	P12	TWD	6	TSC	+0.09	TSC	TSC			66	COLD	560PP
8	3	0.06	95	4	TWD	12	TSC	+0.50	TSC	TSC			66	COLD	560PP
		0.05	0	P12	TWD	1	TSC	+0.50	TSC	TSC			66	COLD	560PP
10	116	0.07	0	P12	TWD	3	TSH	+0.61	TSH	TSH			52	HOT	560PP
24	11	0.22	67	4	TWD	19	TSH	+0.10	TSH	TSH			52	HOT	560PP
		0.18	0	P12	TWD	7	TSH	+0.10	TSH	TSH			52	HOT	560PP
29	109	0.12	85	4	TWD	18	TSC	+0.08	TSC	TSC			81	COLD	560PP
		0.09	0	P12	TWD	3	TSC	+0.08	TSC	TSC			81	COLD	560PP
29	110	0.06	71	4	TWD	15	TSC	+0.03	TSC	TSC			81	COLD	560PP
		0.04	0	P12	TWD	1	TSC	+0.03	TSC	TSC			81	COLD	560PP
		0.13	78	4	TWD	18	TSC	+0.09	TSC	TSC			81	COLD	560PP
		0.11	0	P12	TWD	4	TSC	+0.09	TSC	TSC			81	COLD	560PP
43	103	0.09	102	4	TWD	16	TSC	+0.73	TSC	TSC			81	COLD	560PP
		0.07	0	P12	TWD	2	TSC	+0.73	TSC	TSC			81	COLD	560PP

Total Tubes : 10
Total Records: 21

Millstone Unit 3
20-39%TW for SVI

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 20-39%TW for SVI	4

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 4
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
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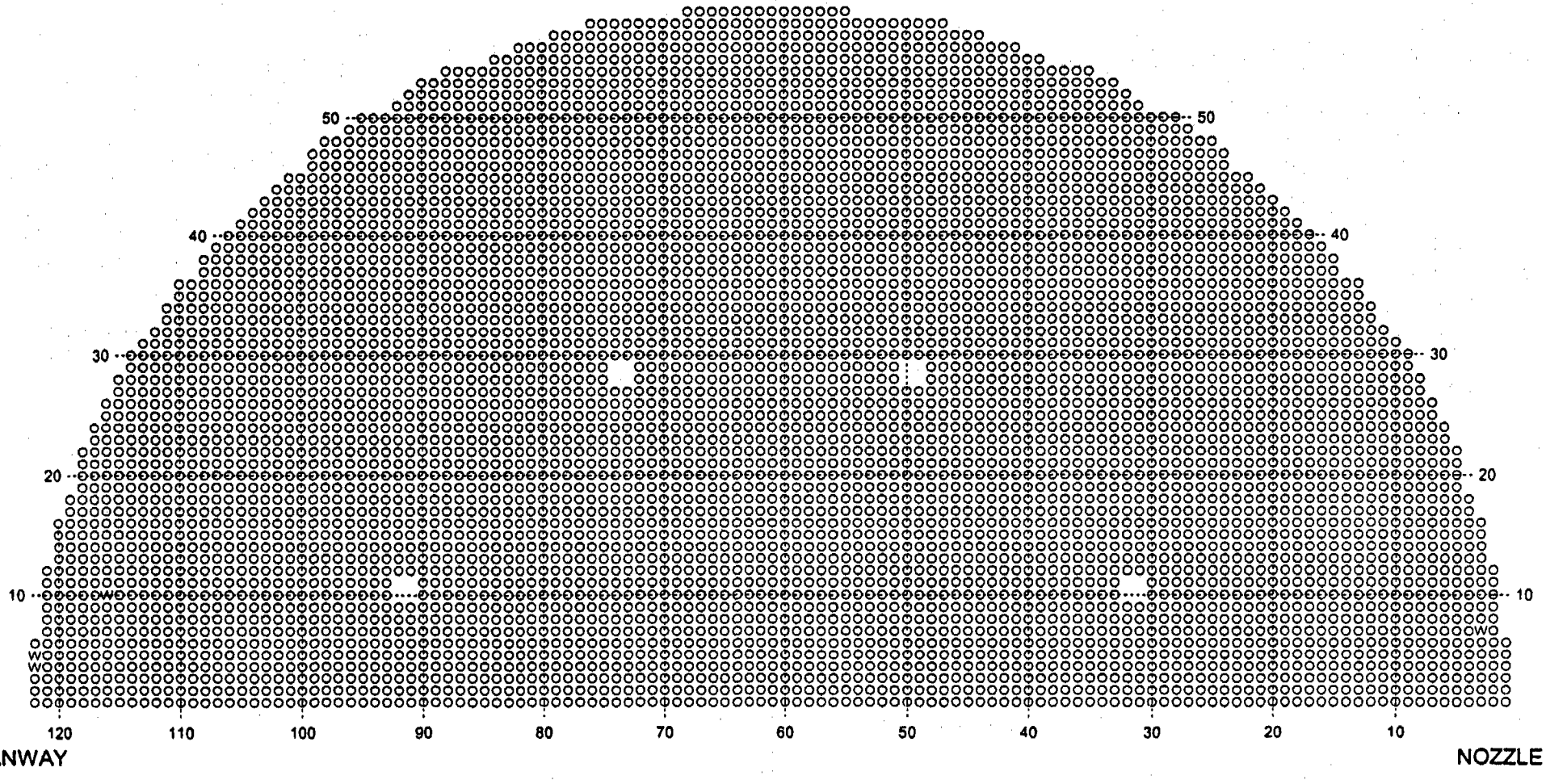

20-39% TW Indications for SVI Sizing

QUERY: 20-39%TW for SVI

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
4	122	0.65	0	P12	TWD	24	TSH	+0.65	TSH	TSH			52	HOT	560PP
5	122	0.25	267	4	TWD	20	TSH	+0.51	TSH	TSH			52	HOT	560PP
		0.47	71	4	TWD	31	TSH	+0.97	TSH	TSH			52	HOT	560PP
		0.29	259	4	TWD	23	TSH	+1.71	TSH	TSH			52	HOT	560PP
7	3	0.21	89	4	TWD	21	TSC	+0.09	TSC	TSC			66	COLD	560PP
10	116	1.13	0	P12	TWD	38	TSH	+0.26	TSH	TSH			52	HOT	560PP
		0.11	228	4	TWD	20	TSH	+0.61	TSH	TSH			52	HOT	560PP

Total Tubes : 4
Total Records: 7

Millstone Unit 3
40-100%TW for SVI

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP
W 40-100%TW for Sv

TUBES
2

S/G A
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 2
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
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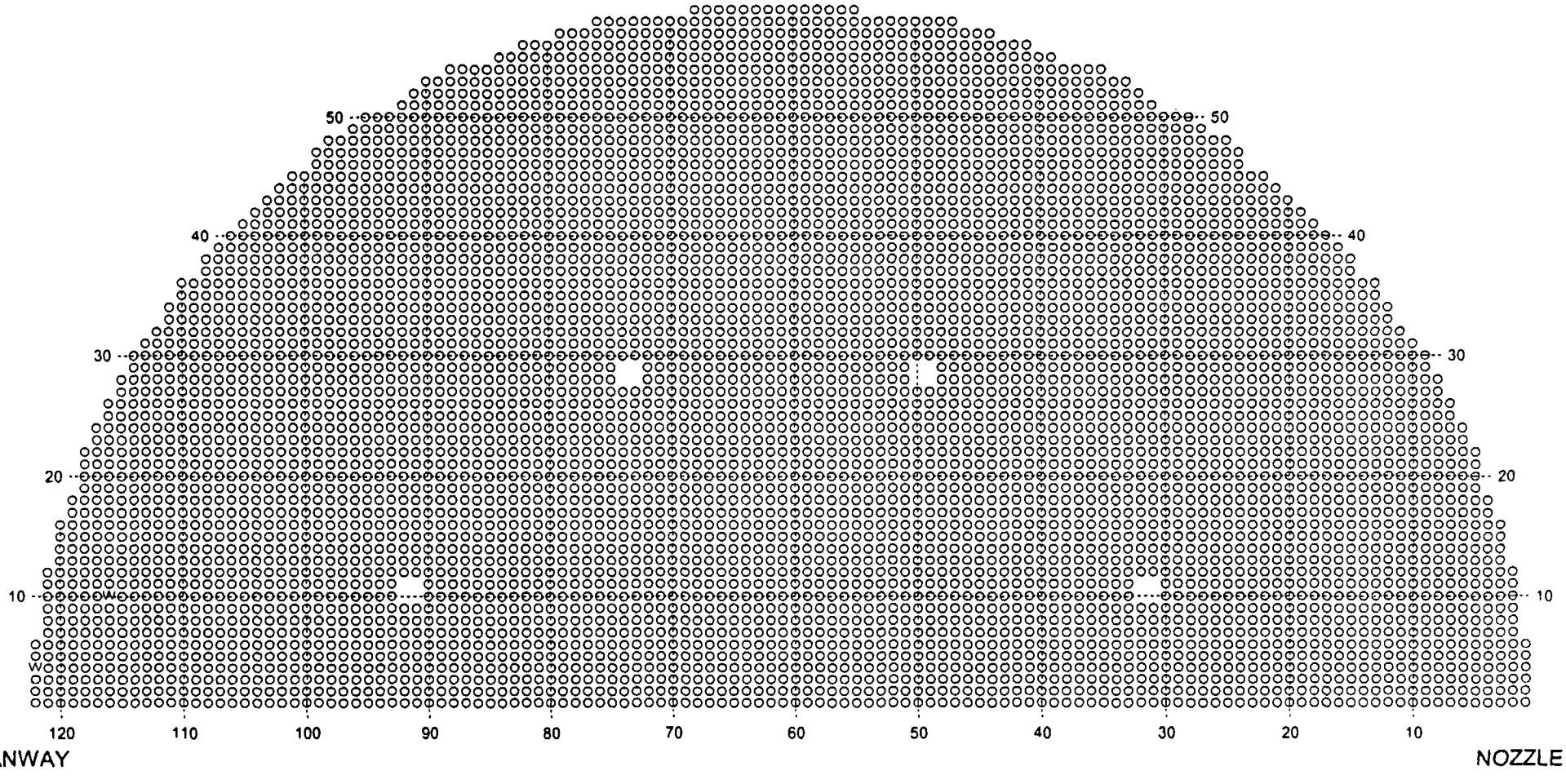

40-100% TW Indications for SVI Sizing

QUERY: 40-100%TW for SVI

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
4	122	0.90	250	4	TWD	47	TSH	+0.65	TSH	TSH			52	HOT	560PP
10	116	1.61	52	4	TWD	64	TSH	+0.26	TSH	TSH			52	HOT	560PP

Total Tubes : 2
Total Records: 2

Attachment 5

Millstone Power Station, Unit No. 3

"C" Steam Generator AVB Indications

Millstone Unit 3
1-19%TW Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 1-19%TW Indications	14

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 14
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
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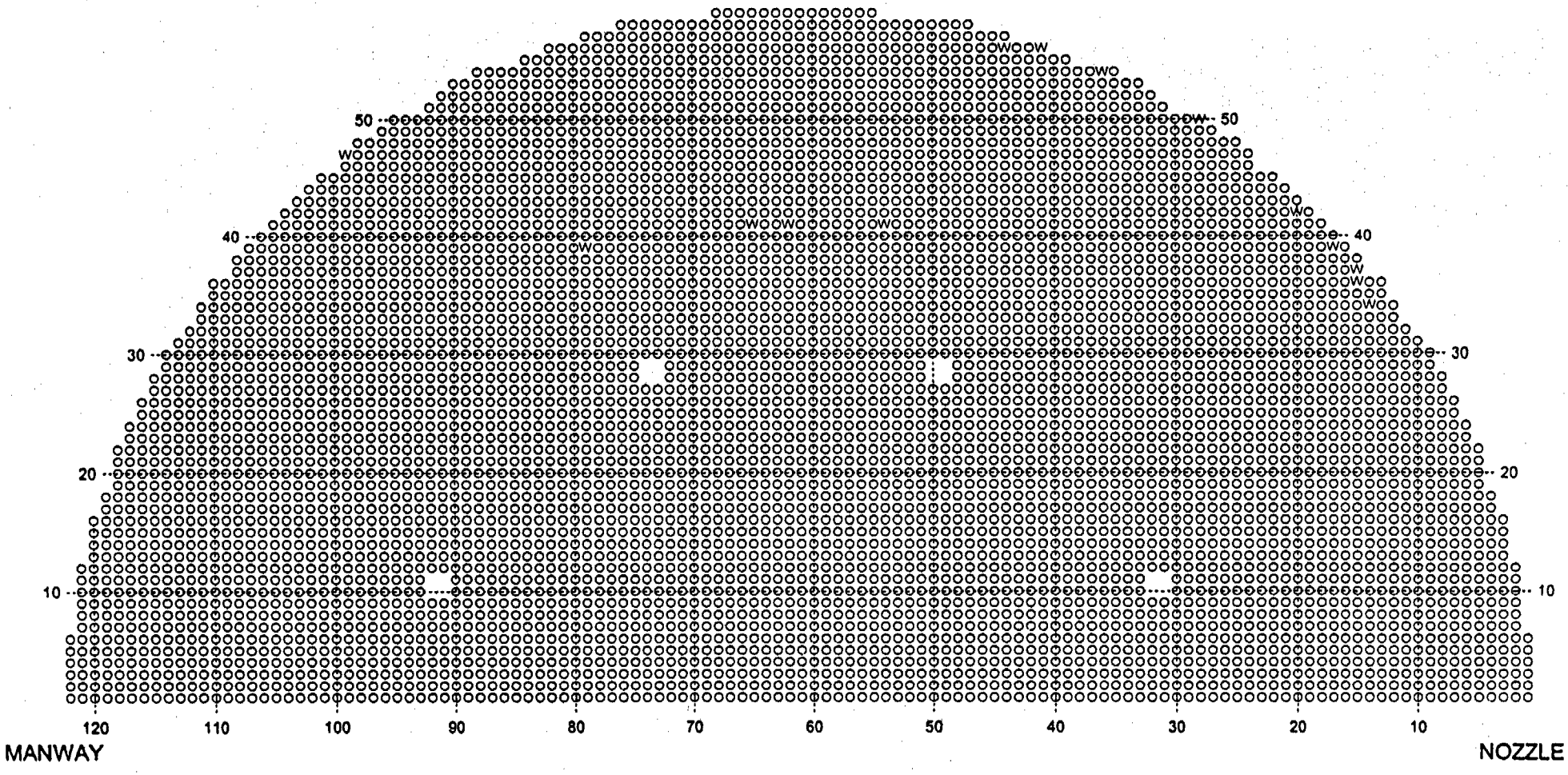

1-19% TW Indications

QUERY: 1-19%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
34	14	0.33	0	P 2	TWD	11	AV2	-0.03	TEH	TEC			6	COLD	560UL
		0.32	0	P 2	TWD	11	AV5	+0.05	TEH	TEC			6	COLD	560UL
36	15	0.33	122	P 2	TWD	11	AV5	+0.11	TEH	TEC			4	COLD	560UL
		0.49	65	P 2	TWD	15	AV6	+0.16	TEH	TEC			4	COLD	560UL
37	15	0.44	0	P 2	TWD	13	AV4	+0.00	TEH	TEC			2	COLD	560UL
		0.45	0	P 2	TWD	14	AV3	+0.00	TEH	TEC			2	COLD	560UL
		0.42		P 2	TWD	17	AV6	+0.14	TEH	TEC			2	COLD	560UL
39	17	0.43	0	P 2	TWD	13	AV6	+0.13	TEH	TEC			2	COLD	560UL
		0.39	0	P 2	TWD	12	AV3	-0.05	TEH	TEC			2	COLD	560UL
		0.57	0	P 2	TWD	17	AV2	-0.03	TEH	TEC			2	COLD	560UL
39	79	0.71	0	P 2	TWD	18	AV3	-0.38	TEH	TEC			36	COLD	560UL
41	54	0.39	0	P 2	TWD	10	AV1	-0.03	TEH	TEC			25	COLD	560UL
		0.70	0	P 2	TWD	17	AV3	-0.40	TEH	TEC			25	COLD	560UL
		0.67	0	P 2	TWD	16	AV4	-0.24	TEH	TEC			25	COLD	560UL
41	62	0.74	0	P 2	TWD	17	AV3	+0.32	TEH	TEC			25	COLD	560UL
		0.74	0	P 2	TWD	17	AV4	-0.42	TEH	TEC			25	COLD	560UL
		0.84	0	P 2	TWD	19	AV4	+0.24	TEH	TEC			25	COLD	560UL
		0.67	0	P 2	TWD	16	AV3	-0.37	TEH	TEC			25	COLD	560UL
41	65	0.58	0	P 2	TWD	18	AV4	+0.49	TEH	TEC			26	COLD	560UL
42	20	0.66	0	P 2	TWD	17	AV2	-0.26	TEH	TEC			23	COLD	560UL
		0.63	0	P 2	TWD	16	AV6	-0.16	TEH	TEC			23	COLD	560UL
47	99	0.65	0	P 2	TWD	16	AV6	-0.03	TEH	TEC			45	COLD	560UL
50	28	0.30	0	P 2	TWD	11	AV4	+0.03	TEH	TEC			26	COLD	560UL
54	36	0.47	0	P 2	TWD	12	AV4	-0.05	TEH	TEC			25	COLD	560UL
		0.40	0	P 2	TWD	10	AV5	-0.13	TEH	TEC			25	COLD	560UL
		0.46	0	P 2	TWD	11	AV3	-0.05	TEH	TEC			25	COLD	560UL
56	41	0.32	0	P 2	TWD	10	AV2	+0.11	TEH	TEC			32	COLD	560UL
		0.45	0	P 2	TWD	13	AV4	+0.00	TEH	TEC			32	COLD	560UL
		0.57	0	P 2	TWD	16	AV6	+0.00	TEH	TEC			32	COLD	560UL
56	44	0.47	0	P 2	TWD	12	AV4	-0.05	TEH	TEC			31	COLD	560UL

Total Tubes : 14
Total Records: 30

Millstone Unit 3
20-36%TW Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 20-36%TW Indications	14

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 14
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Fri Oct 11 11:46:00 2002

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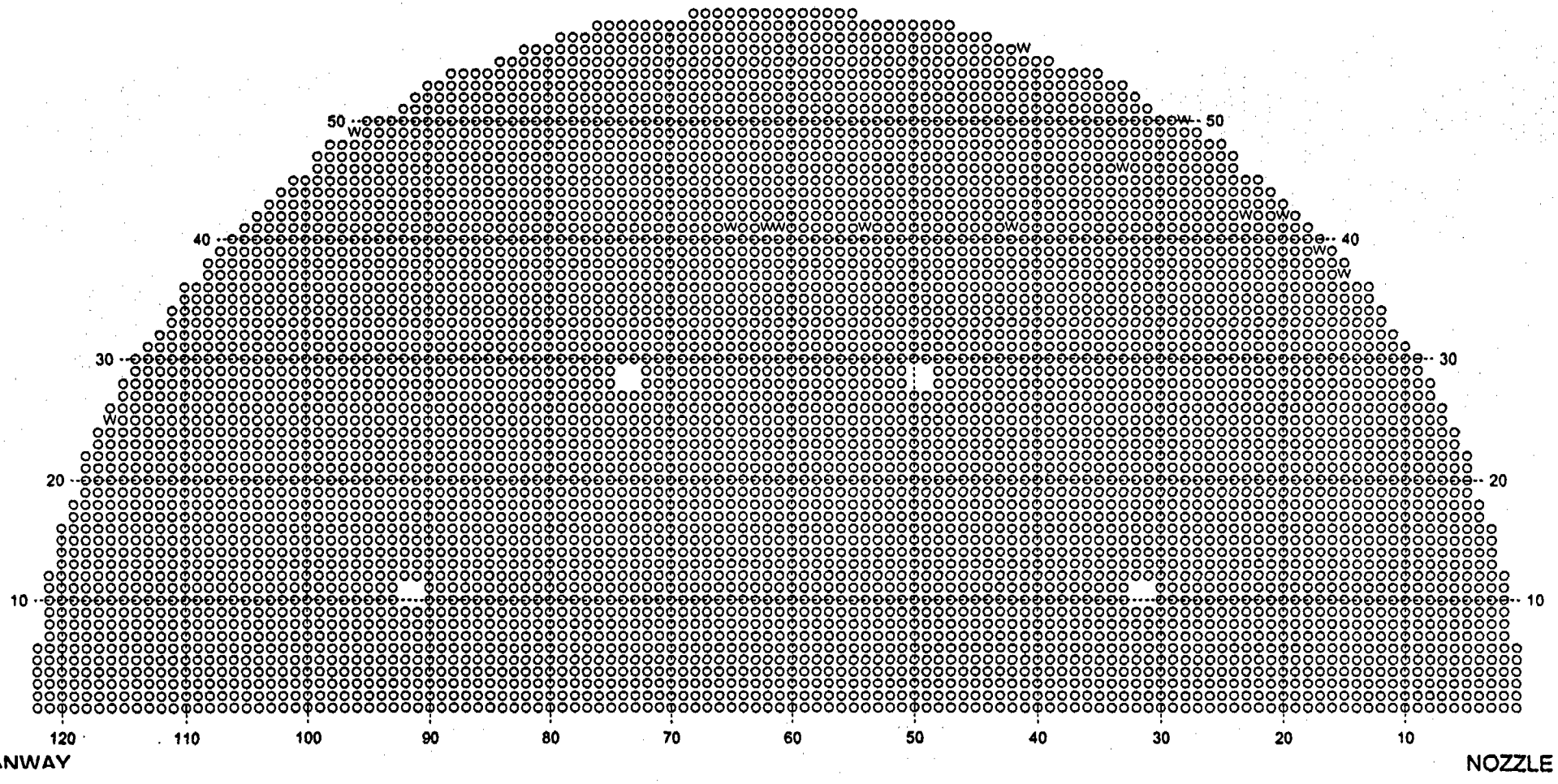

20-36% TW Indications

QUERY: 20-36%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
25	116	0.84	0	P 2	TWD	23	AV6	+0.00	TEH	TEC			66	COLD	560UL
37	15	0.93	0	P 2	TWD	24	AV2	-0.11	TEH	TEC			2	COLD	560UL
		1.31		P 2	TWD	33	AV5	+0.14	TEH	TEC			2	COLD	560UL
39	17	0.76	0	P 2	TWD	21	AV5	+0.03	TEH	TEC			2	COLD	560UL
		0.70	0	P 2	TWD	20	AV4	-0.05	TEH	TEC			2	COLD	560UL
41	42	0.87	0	P 2	TWD	20	AV3	-0.03	TEH	TEC			25	COLD	560UL
41	54	0.96	0	P 2	TWD	21	AV5	-0.26	TEH	TEC			25	COLD	560UL
41	61	1.06	0	P 2	TWD	27	AV3	+0.00	TEH	TEC			26	COLD	560UL
41	62	0.90	0	P 2	TWD	20	AV2	+0.03	TEH	TEC			25	COLD	560UL
		1.62	0	P 2	TWD	31	AV5	-0.16	TEH	TEC			25	COLD	560UL
41	65	0.74	0	P 2	TWD	21	AV5	-0.08	TEH	TEC			26	COLD	560UL
42	20	1.02	0	P 2	TWD	23	AV3	-0.13	TEH	TEC			23	COLD	560UL
		1.05	0	P 2	TWD	24	AV4	-0.13	TEH	TEC			23	COLD	560UL
		1.14	0	P 2	TWD	25	AV5	+0.29	TEH	TEC			23	COLD	560UL
42	23	0.82	65	P 2	TWD	23	AV3	-0.08	TEH	TEC			24	COLD	560UL
		1.50	79	P 2	TWD	32	AV4	-0.11	TEH	TEC			24	COLD	560UL
		1.19	90	P 2	TWD	29	AV5	-0.05	TEH	TEC			24	COLD	560UL
46	33	0.76	0	P 2	TWD	22	AV6	+0.45	TEH	TEC			26	COLD	560UL
49	96	0.84	0	P 2	TWD	20	AV5	+0.00	TEH	TEC			45	COLD	560UL
		1.11	0	P 2	TWD	24	AV6	-0.05	TEH	TEC			45	COLD	560UL
50	28	0.69	0	P 2	TWD	20	AV5	+0.05	TEH	TEC			26	COLD	560UL
56	41	0.96	0	P 2	TWD	23	AV5	+0.14	TEH	TEC			32	COLD	560UL

Total Tubes : 14
Total Records: 22

Millstone Unit 3
37-100%TW Indications

3RO8 - 09/02

FRA-ANP - FOMS map module Version 2.1

GROUP	TUBES
W 37-100%TW Indications	1

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 1
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
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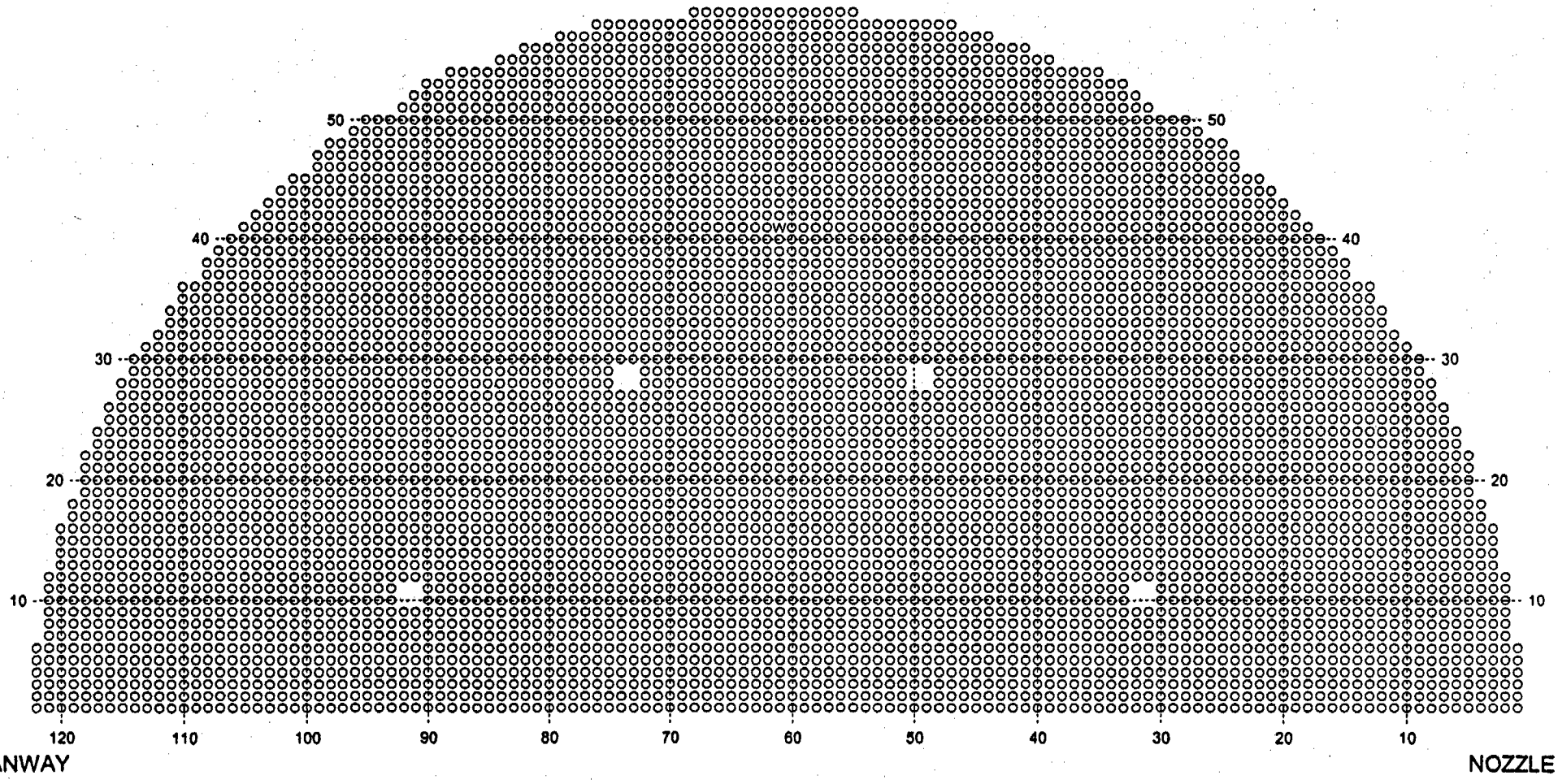

37-100% TW Indications

QUERY: 37-100%TW Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
41	61	3.07	0	P 2	TWD	44	AV4	-0.05	TEH	TEC	LAR		26	COLD	560UL
		3.28	0	P 2	TWD	45	AV5	-0.03	TEH	TEC	LAR		26	COLD	560UL

Total Tubes : 1
Total Records: 2

Docket No. 50-423
B18942

Attachment 6

Millstone Power Station, Unit No. 3

"C" Steam Generator Volumetric Indications

Millstone Unit 3
VOL Indications

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
V VOL Indications	7

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 7
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Fri Oct 11 12:05:50 2002

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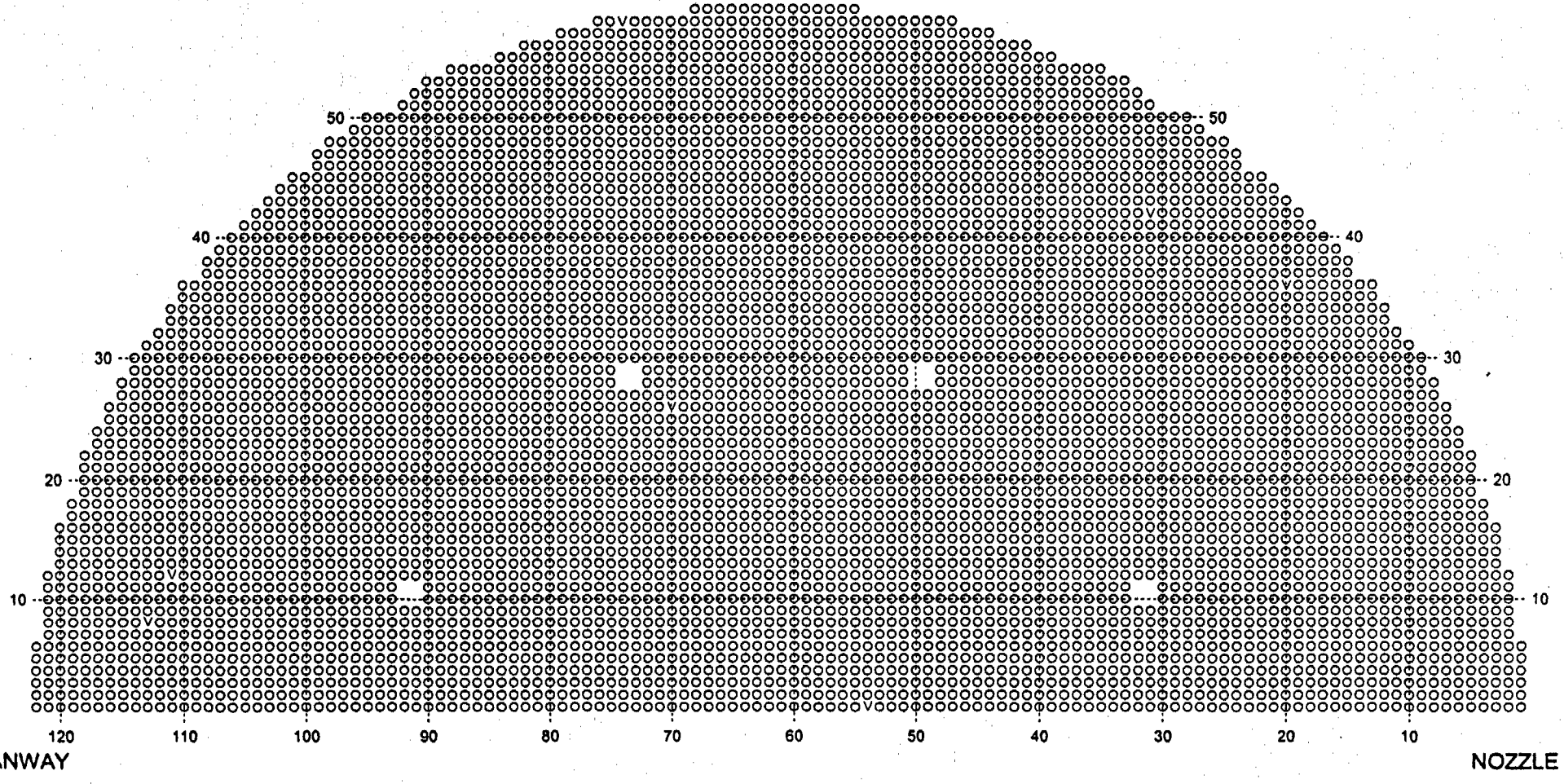

VOL Indications

QUERY: VOL Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
1	54	1.83	132	3	VOL		07H	+39.15	07H	08H			50	HOT	560PP
8	113	0.31	67	3	VOL		TSH	+0.63	TSH	TSH			31	HOT	560PP
		0.83	72	3	VOL		TSH	+3.13	TSH	TSH			31	HOT	560PP
12	111	0.70	111	3	VOL		02H	+7.75	02H	03H			52	HOT	560PP
26	70	0.85	105	3	VOL		04H	+25.76	04H	05H			45	HOT	560PP
36	20	0.64	64	3	VOL		TSH	+3.66	TSH	TSH			7	HOT	560PP
42	31	1.91	130	3	VOL		07H	+18.21	07H	08H			49	HOT	560PP
58	74	0.57	122	3	VOL		04H	+13.63	04H	05H			58	HOT	560PP

Total Tubes : 7
Total Records: 8

Attachment 7

Millstone Power Station, Unit No. 3

"C" Steam Generator Single Volumetric Indications

Millstone Unit 3
1-19%TW for SVI

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 1-19%TW for SVI	7

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 7
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
Fri Oct 11 11:50:21 2002

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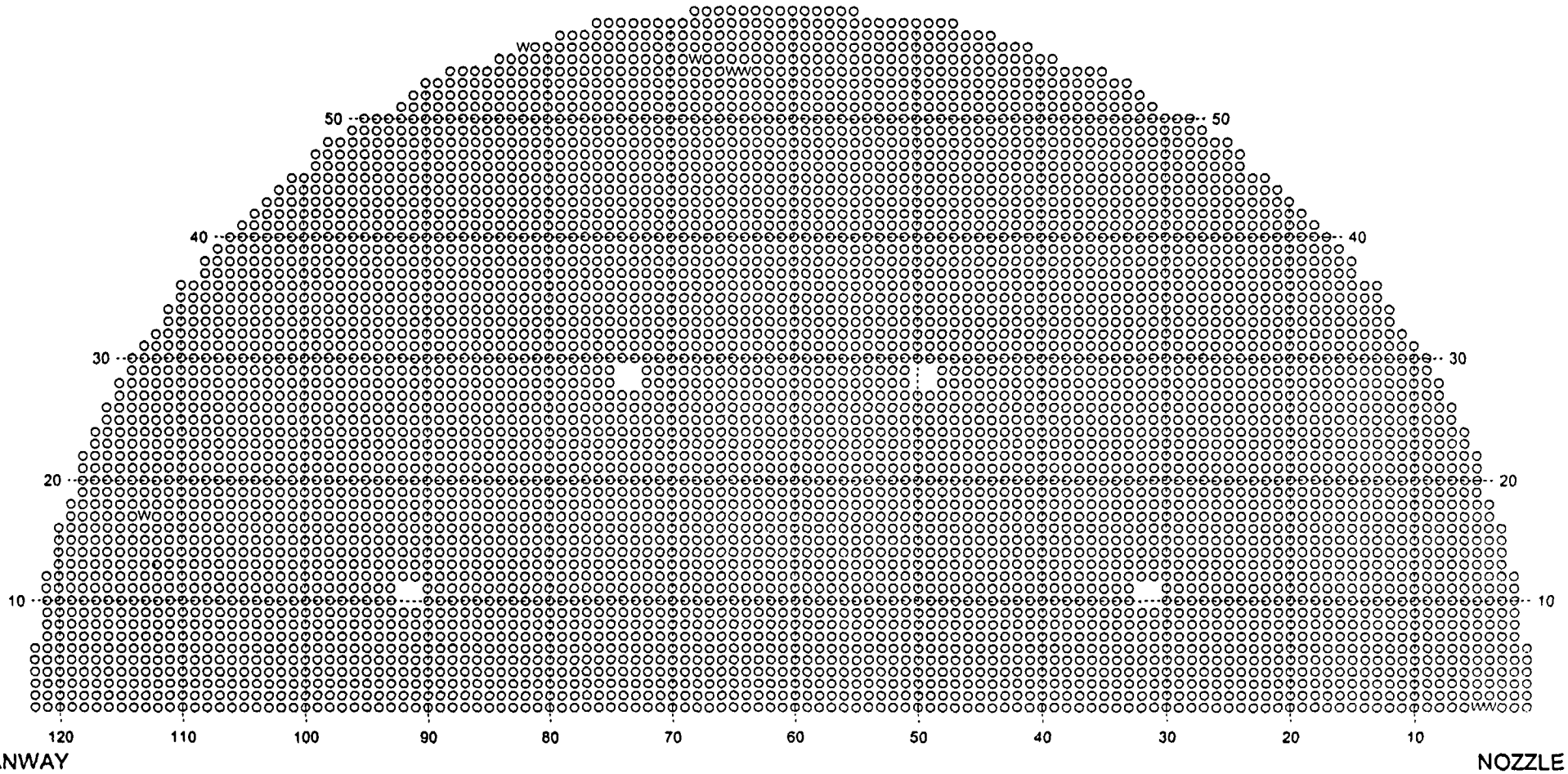

1-19%TW Indications for SVI Sizing

QUERY: 1-19%TW for SVI

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
1	4	0.13	83	4	TWD	16	TSC	+2.86	TSC	TSC			79	COLD	560PP
		0.12	0	P12	TWD	4	TSC	+2.86	TSC	TSC			79	COLD	560PP
1	5	0.18	87	4	TWD	19	TSC	+3.12	TSC	TSC			79	COLD	560PP
		0.16	0	P12	TWD	5	TSC	+3.12	TSC	TSC			79	COLD	560PP
17	113	0.09	0	P12	TWD	5	TSH	-0.03	TSH	TSH			44	HOT	560PP
54	64	0.12	0	P12	TWD	6	TSH	+0.16	TSH	TSH			47	HOT	560PP
54	65	0.28	0	P12	TWD	16	TSH	+0.05	TSH	TSH			44	HOT	560PP
55	68	0.14	69	4	TWD	15	TSH	+0.69	TSH	TSH			44	HOT	560PP
		0.08	0	P12	TWD	5	TSH	+0.69	TSH	TSH			44	HOT	560PP
56	82	0.06	75	4	TWD	12	TSC	+0.49	TSC	TSC			79	COLD	560PP
		0.05	0	P12	TWD	1	TSC	+0.49	TSC	TSC			79	COLD	560PP
		0.08	59	4	TWD	13	TSC	+0.56	TSC	TSC			79	COLD	560PP
		0.06	0	P12	TWD	2	TSC	+0.56	TSC	TSC			79	COLD	560PP

Total Tubes : 7
Total Records: 13

Millstone Unit 3
20-39%TW for SVI

3RO8 - 09/02

FRA-ANP - FDMS map module Version 2.1

GROUP	TUBES
W 20-39%TW for SVI	3

S/G C
HOT
PRIMARY FACE

TOTAL TUBES: 5626
SELECTED TUBES: 3
OUT OF SERVICE (#): NA

SCALE: 0.080231 X
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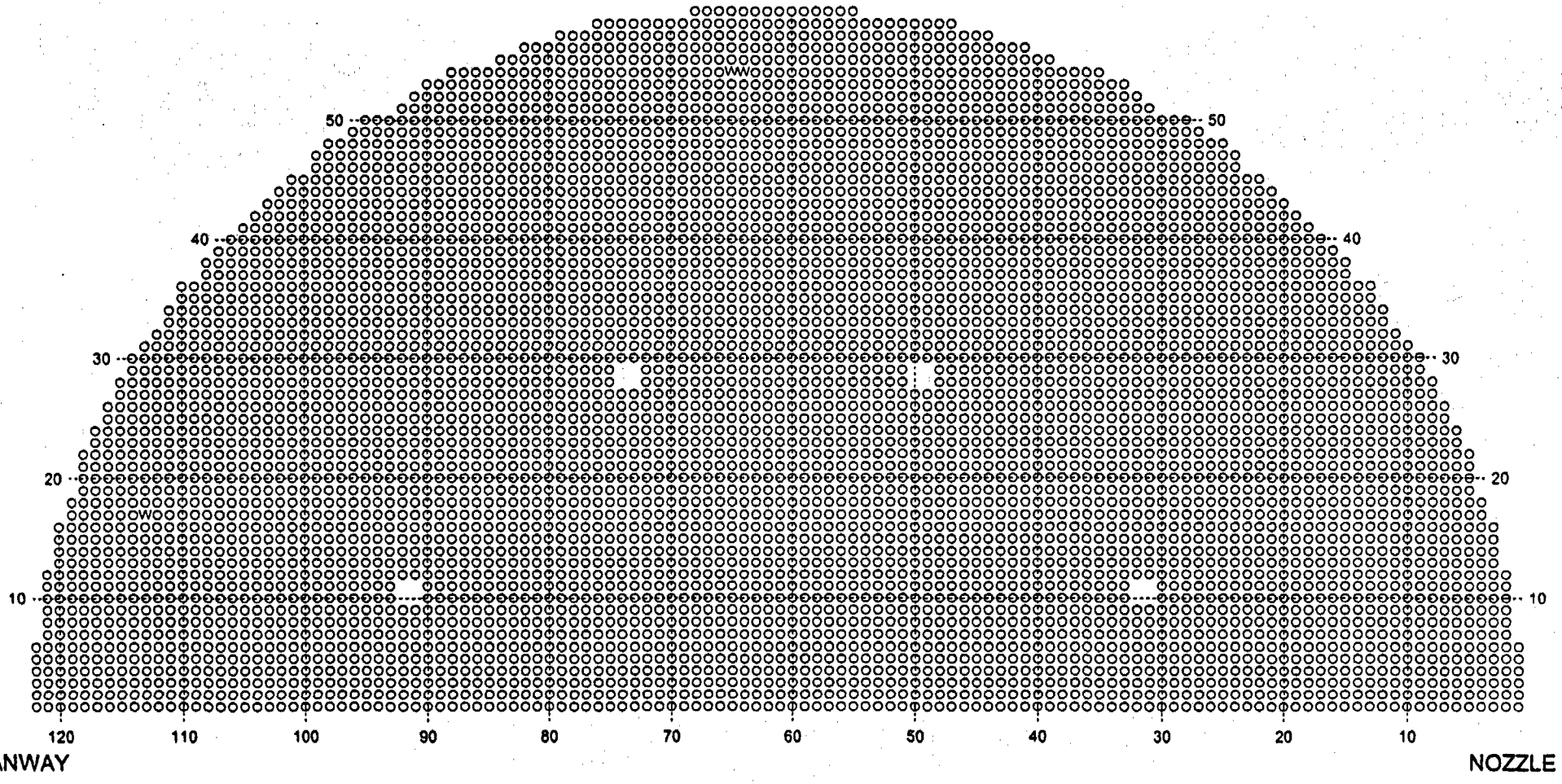

20-39%TW Indications for SVI Sizing

QUERY: 20-39%TW for SVI

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
17	113	0.31	23	4	TWD	30	TSH	-0.09	TSH	TSH			44	HOT	560PP
54	64	0.18	91	4	TWD	25	TSH	+0.16	TSH	TSH			47	HOT	560PP
54	65	0.43	275	4	TWD	33	TSH	+0.05	TSH	TSH			44	HOT	560PP

Total Tubes : 3
Total Records: 3