UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D C 20555

April 2, 1992

Docket No. 50-338

LICENSEE: Virginia Electric and Power Company

FACILITY: North Anna Power Station, Unit No. 1 (NA-1)

SUBJECT: MEETING SUMMARY OF MARCH 2, 1992

On March 2, 1992, representatives of the NRC, the licensee, and Westinghouse met to discuss the results of the just completed mid-cycle NA-1 steam generator (SG) inspection. Also addressed were justification for restart and obtaining NRC approval for restart. NRC approval for restart is required pursuant to the NA-1 Technical Specifications (TS) 3/4.4.5 as a result of the Category C-3 SG inspection results. Portions of the meeting were of a proprietary nature, and therefore, are not discussed in this meeting summary. A list of attendees is provided in Enclosure 1. Handouts of the non-proprietary portions of the meeting are provided in Enclosure 2.

Inspection of the NA-1 SGs included a 100% full-length bobbin probe of all hot and cold leg tubes except for the Row 2 U-bends. A 100% inspection of the tube-to-tube support plate intersections was performed with an 8x1 probe on the hot leg side up to the 7th support plate. These 8x1 probe inspections were conducted to provide increased sensitivity to stress corrosion cracking (SCC) at tube support plate (TSP) locations. However, the 8x1 data was not analyzed due to correlation problems between the 8x1 and rotating pancake coil (RPC) data. Therefore, the licensee initiated a 100% RPC program to ensure the detection of SCC at the TSPs. RPC probes were conducted as follows: (1) 100% inspection of hot leg TSP locations; (2) 100% inspection of WEXTEX expansion-transition locations on the hot leg side; and (3) 100% inspection of the Row 2 U-bends.

All analysts of the eddy current (EC) probe data were required to pass site-specific examinations approved by the licensee's non-destructive examination (NPE) Level III. Data were independently reviewed by two analysts. The control of data resolution by the licensee's lead analysts was expanded during the SG inspection to require concurrence of an additional analyst and NDE Level III involvement. In addition, an independent quality control function was provided by the licensee's Quality Assurance (QA) Department.

The inspection results and the number of pluggable tubes and locations are listed below.

DF01
1/1

Pluggable Percentages

	Steam Generator A	B	C	TOTAL
Previously Plugged	463	425	650	1538
Plugged Mid-Cycle Inspection	166	160	201	527
Total Tubes	629	585	851	2065
Cumulative % Plugged	18.6%	17.3%	25.1%	20.3%

Pluggable Tube Locations

Attribution	No. of Tubes with Pluggable Indications
Cracks at WEXTEX transition axial or circumferential	36
Freespan	3
Axial indications at TSP	257
Circumferential indications at TSP	212
Other	19
Total	527

SG tube integrity was established by plugging all 527 tubes as shown above. Tube stabilization, where needed, considered criteria for loadings on plugged tubes due to heatup/cooldown cycles and flow-induced vibration loadings.

The licensee's and Westinghouse's bases for justifying operation through January 1993 included projecting the next end-of-cycle crack growth indications based on the mid-cycle SG inspection results. The duration of the next operating cycle in effective full power days (EFPD) will be less than in the previous cycle. In addition, the hot leg temperature will be less in the forthcoming cycle. Therefore, the expected tube crack sizes will be less at the end of the forthcoming cycle (January 1993) than those observed in the just completed portion of the cycle. This assures an adequate level of safety to permit operations for the balance of the cycle.

No single circumferential indications located at the WEXTEX transitions exceeded the limiting crack size for meeting the criteria of RG 1.121. Also, crack indications at the TSPs were determined to be enveloped by the criteria of RG 1.121 with two exceptions. VEPCO stated that these two exceptions will not recur in January 1993 because tubes inspected during the mid-cycle inspection used the more sensitive RPC probe with a lower threshold of detection than used during the previous inspection. Re-examination of probe data (8x1 and RPC) from the previous inspection now indicate that circumferential cracks detected at TSPs during the mid-cycle inspection were present during the previous inspection, but below detection thresholds. The licensee and Westinghouse stated that maximum end-of-cycle (EOC) crack sizes are expected to be significantly less than that seen during the mid-cycle inspection due to the extent of repairs made and due to the reduction in hot leg temperature for the remainder of the operating cycle.

Some axial indications extending beyond the TSP area were plugged during the mid-cycle outage. The licensee indicated that all of the observed axial crack indications were less than the crack size specified for the structural performance criteria of RG 1.121. The size of these axial indications was less than the limiting crack size specified in RG 1.121 and, therefore, the licensee expects these cracks to be within the guidelines of RG 1.121 at the end of the next cycle.

Multiple circumferential indications were found at both the WEXTEX transition area and the TSP during the mid-cycle SG inspection. The licensee and Westinghouse stated that all of these multiple indications meet the criteria of RG 1.121. Each crack had a ligament which exceeded the minimum ligament size required to meet the three-times-normal operating pressure differential.

Some occurrences of mixed-mode cracking (circumferential and axial cracks at the same TSP) were found during the mid-cycle inspection. The licensee and Westinghouse stated that a ligament of three-wall thicknesses (about 20°) is sufficient to ensure that the burst pressure of mixed-mode cracked tubes is due only to the axial component of a given tube crack network. The axial lengths of the mixed-mode cracks were within structural limits. Also, the minimum ligament was greater than or equal to 20°. Therefore, the licensee stated that the mixed-mode crack tubes meet the structural limits of RG 1.121.

Subsequent to the meeting, the staff requested that the licensee discuss its position regarding the structural integrity of the steam generator tubes in service with respect to their resistance to leakage during main steam line breaks. The staff believes such leakage would not present a significant safety concern but desires to have this leakage more precisely quantified.

The NA-1 TS specify a stringent limit on allowable primary-to-secondary leakage (100 gpd). However, the licensee has administrative limits in place which limit primary-to-secondary leakage to 50 gpd. The NA-1 TS assure effective monitoring of primary-to-secondary leakage in order to alert operators in a timely manner to an increasing trend in primary-to-secondary leakage. Also, the licensee's monitoring program includes the use of

state-of-the-art N-16 monitors for continuous monitoring of primary-to-secondary leakage in the control room.

In conclusion, the licensee stated that the NA-1 SGs have been restored to an operable status and that operation to January 1993 was warranted. The NRC staff caucused and, in closing, stated to the licensee that the staff concurs with the licensee's conclusion that the NA-1 SGs have been restored to an operable status. Also, the staff agreed that restart from the mid-cycle inspection was acceptable and NA-1 could be operated safety through January 1993. Finally, the staff indicated to the licensee that a quantitative analysis should be made of the maximum EOC crack size at the TSP to document conformance with RG 1.121 criteria. The analysis should be included in the licensee's final report for the mid-cycle SG inspection. The report is due to the NRC by April 30, 1992.

/s/
Leon B. Engle, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Attendance List
2. Meeting Handouts

cc w/enclosures:
See next page

DISTRIBUTION:

Docket File	NRC & Local PDRs
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L. Engle	D. Miller
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H. Abelson	M. Caruso
G. Johnson	K. Karwoski
J. Richardson	J. Wiggins
ACRS(10)	J. Wechselberger, EDO 17-G-21
M. Sinkule, RII	

*See previous concurrence

OFFICE	LA:PDII-2	PM:PDII-2	D:PDII-2	*MTEB	
NAME	D. Miller	L. Engle	H. Berkow	J. Wiggins	
DATE	4/7/92	4/2/92	4/7/92	04/02/92	/ /

OFFICIAL RECORD COPY
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Mr. W. L. Stewart
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ENCLOSURE 1

Attendance List

Meeting with Virginia Electric and Power Company

March 2, 1992

NA-1 MID-CYCLE SG INSPECTION

NRC

H. Abelson
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L. Engle
G. Johnson
K. Karwoski
G. Lainas
J. Partlow
J. Richardson
S. Varga
J. Wechselberger
J. Wiggins

VEPCO

K. Baeshore
M. Bowling
E. Grecheck
L. Hartz
J. Lee
J. Stall
W. Stewart
E. Throckmorton

WESTINGHOUSE

J. Beglem
R. Easterling
J. Hall
D. Malinowski
T. Pitterle
G. Whiteman

BECHTEL

M. Barth

ENCLOSURE 2

VIRGINIA POWER

North Anna Unit 1
Steam Generator Mid-Cycle Inspection Outage
NRC Startup Approval Meeting

March 2, 1992

VIRGINIA POWER

Introduction

W. L. Stewart
Senior Vice President - Nuclear

North Anna Unit 1
Steam Generator Mid-Cycle Inspection Outage
NRC Startup Approval Meeting

Agenda

March 2, 1992

Introduction	W. L. Stewart
Basis for Startup Approval	M. L. Bowling
Summary of Inspection Program and Results	E. S. Grecheck
Detailed Discussion of Inspection Results	Westinghouse (D. D. Malinowski)
Tube Integrity Evaluation	Westinghouse (T. A. Pitterle)
Operational Considerations	J. A. Stall
Startup Basis Summary and Schedule	M. L. Bowling

Meeting Objectives

- Present the North Anna Unit 1 Steam Generator Inspection Results
- Demonstrate Adequate Licensing Basis for Restart and Operation of North Anna Unit 1 until the Scheduled Steam Generator Replacement
- Identify NRC Approvals Required for Restart
- Obtain NRC Verbal Approval for Startup and Continued Operation until the Steam Generator Replacement

VIRGINIA POWER

Basis for Startup Approval

M. L. Bowling
Manager - Nuclear Licensing and Programs

Basis For Startup Approval

- Compliance with Technical Specifications for Steam Generator Operability:
  - Surveillance - Inspections completed which exceeded Technical Specification requirements
  - Plugging Limit - Identified tubes with defects have been plugged
  - Serviceability - Possible degradation below the threshold of detection is bounded
    - Reg. Guide 1.121 tube integrity evaluation concludes continued operation through January 1993 acceptable

- Core Design and Dose Limits Maintained by:
  - Limiting operation to 95% maximum rated power (Analyses support 35% peak / 30% avg. tube plugging while actual tube plugging is approximately 10% less than analyzed)
  - Reduction in primary coolant iodine activity to 75% of Technical Specification limit

- Additional Assurance of Safe Operation is Provided by:
  - "State of the art" primary-to-secondary leakage monitoring capability
  - Conservative primary-to-secondary leakage limits

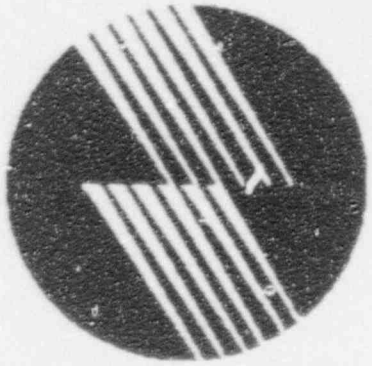
Interactions and Communications with the NRC

January 6	Meeting with the NRC to discuss steam generator inspection plan and issues related to restart of North Anna Unit 1.
January 7 - 9	NRC Region II Inspector on site to review steam generator eddy current testing activities.
January 8	Submitted proposed Tech Spec change request for reduction in minimum RCS flow rate in support of projected steam generator tube plugging levels.
January 9	Conference call to discuss NRC comments on the steam generator inspection plan and analysis methodology.
January 10	Four-hour report made to NRC due to "C" steam generator being Category "C-3".
January 13 - 16	NRC NRR staff on site to follow steam generator eddy current testing activities.
January 20	Four-hour report made to NRC due to "A" steam generator being Category "C-3".
January 24	Four-hour report made to NRC due to "B" steam generator being Category "C-3".
January 28	Submitted proposed license amendment for interim reduction to 95% Rated Thermal Power in support of projected steam generator tube plugging levels.

Interactions and Communications with the NRC
(Continued)

January 29 - 30	NRC NRR staff on site reviewing steam generator eddy current testing program.
January 31	Submitted supplemental information in clarification of the reduced RCS flow rate Tech Spec change in response to questions from the NRC reviewer.
February 10	Submitted supplement to our proposed Tech Spec change for further reduction in minimum RCS flow rate equivalent to the power reduction. Met with NRC reviewers to discuss changes.
February 18	Conference call to provide NRC an update on the status of the steam generator inspection program.
February 21	Submitted formal response to NRC comments on the steam generator inspection plan and analysis methodology as discussed in 1/9 conference call.
February 25	Submitted supplemental information in clarification of the reduced RCS flow rate Tech Spec change in response to questions from the NRC reviewer.
February 26	Met with NRC Project Manager to discuss outage schedule and required NRC approvals.
February 27	Submitted request to change reduced power Tech Spec change to an emergency Tech Spec change request.
Weekly	Steam generator inspection status reports to the NRC Project Manager.

VIRGINIA POWER



Summary of Inspection Program and Results

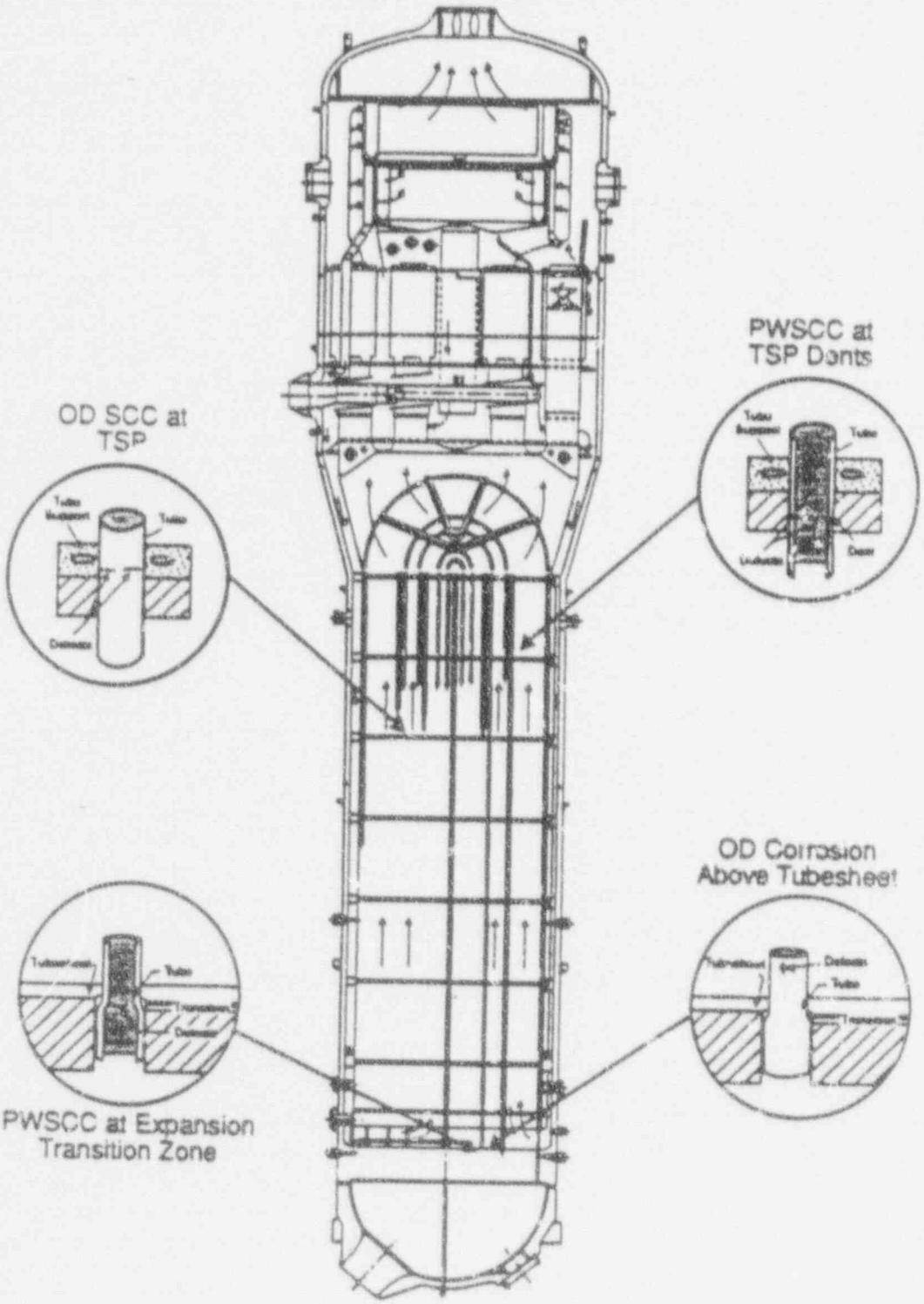
E. S. Grecheck
Manager - ISI / NDE and Engineering Programs

Summary of Inspection Program and Results

- Inspection Program
- Inspection Results
- Tube Plugging
- Tube Integrity Evaluation Summary

Major Degradation Mechanisms

Steam Generator



LD933.12

Inspections Performed

- Bobbin Probe
  - 100% of All Tubes (TEH through TEC) (except Row 2 U-bends)
- RPC Probe
  - 100% Hot Leg Top of Tubesheet (WEXTEX)
  - 100% Hot Leg Tube Support Plate Locations
  - 100% Row 2 U-bends

Data Evaluation / Protocol

- All analysts required to pass site specific examination approved by Virginia Power NDE Level III
- Data independently reviewed by two analysts
- Control of data resolution by Lead Analysts expanded to require concurrence of additional analyst and Virginia Power NDE Level III involvement
- Independent oversight function provided by Virginia Power Quality Assurance

Inspection Results

Tubes with Pluggable Indications	STEAM GENERATOR A	B	C	TOTAL
Free Span	1	0	2	3
Tubesheet	15	10	11	36
Tube Support Plate	143	148	178	469
Total Tubes	**159**	**158**	**191**	**508**
Tubes Preventatively Plugged				
Restricted	1	0	0	1
Sentinel	4	0	0	4
Optional	2	2	10	14
Total Tubes Plugged	**166**	**160**	**201**	**527**
Tubes Stabilization				
Total Tubes Stabilized	**1**	**2**	**0**	**3**

Pluggable Percentages

	STEAM GENERATOR A	B	C	TOTAL
Previously Plugged	463	425	650	1538
Plugged This Outage	166	160	201	527
Total Tubes	**629**	**585**	**851**	**2065**
Cumulative Percent Plugged	**18.6%**	**17.3%**	**25.1%**	**20.3%**

Comparison to Predictions

	STEAM GENERATOR A	B	C	AVG
Previously Plugged	13.7%	12.5%	19.2%	15.1%
Predicted for End of Cycle (18 month cycle)	19.0%	16.0%	26.0%	20.3%
Actual Plugged	18.6%	17.3%	25.1%	20.3%

Results Evaluation

- Detailed Review of Inspection Results
  - Characterization of Indications
  - Growth Rates (1991 - 1992)
- Tube Integrity Evaluation (Reg. Guide 1.121)
- Conclusion
  - Observed Indications Bounded by Analysis
  - All Identified Defects Removed From Service
  - Remaining Operating Cycle Supported by the Just-Concluded Operating Period and the Results of the Mid-Cycle Inspection

Westinghouse

Detailed Discussion of Inspection Results

D. D. Malinowski

NORTH ANNA #1
FEBRUARY 1992

TUBE PLUGGING SUMMARY

	A	B	C
THROUGH 1991	463	425	650
WEXTEX (HL) (RPC)	15	10	11
TSP (HL) (RPC)	143	148	178
OTHER (BOBBIN)	1	0	2
PREVENTIVE	7	2	10
TOTAL 1992	166	160	201
CUMULATIVE	629	585	851
% PLUGGED	18.6%	17.3%	25.1%

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North Anna #1
February 1992

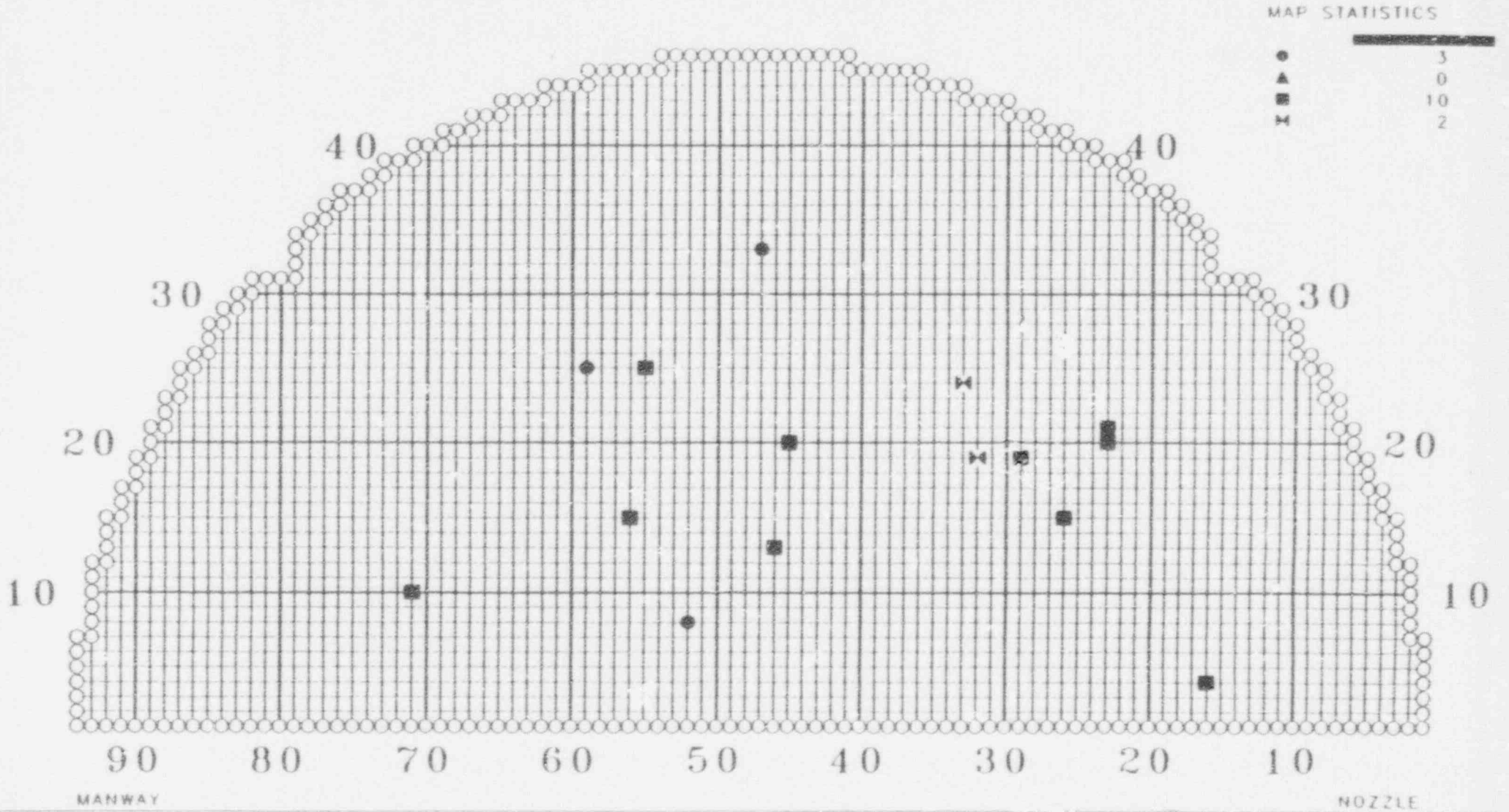
WEXTEX Inspection Results

# Tubes	Steam Generator A	B	C
Single Axial	3	0	2
Multiple Axial	0	0	0
Single Circumferential	10	9	7
Multiple Circumferential	2	1	2

- There were 0 tubes with mixed mode degradation identified in the WEXTEX transitions.

NORTH ANNA UNIT 1 S/G A 2/27 PLUG LIST

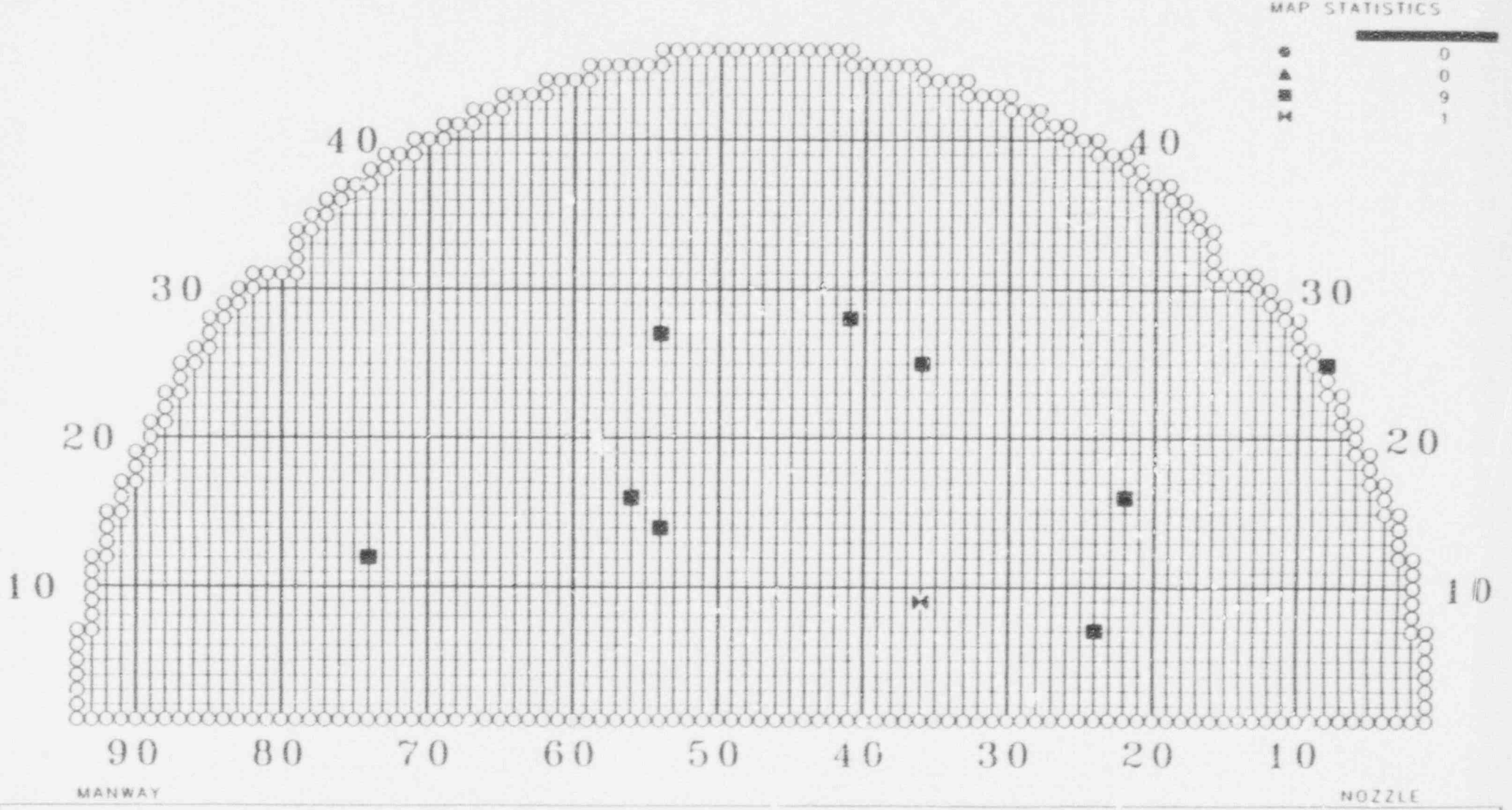
WEXTEX INDICATIONS (RPC PROBES)



STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP 1990 DATE PLOTTED 2/27/1992

NORTH ANNA UNIT 1 S/G B 2/27 PLUG LIST

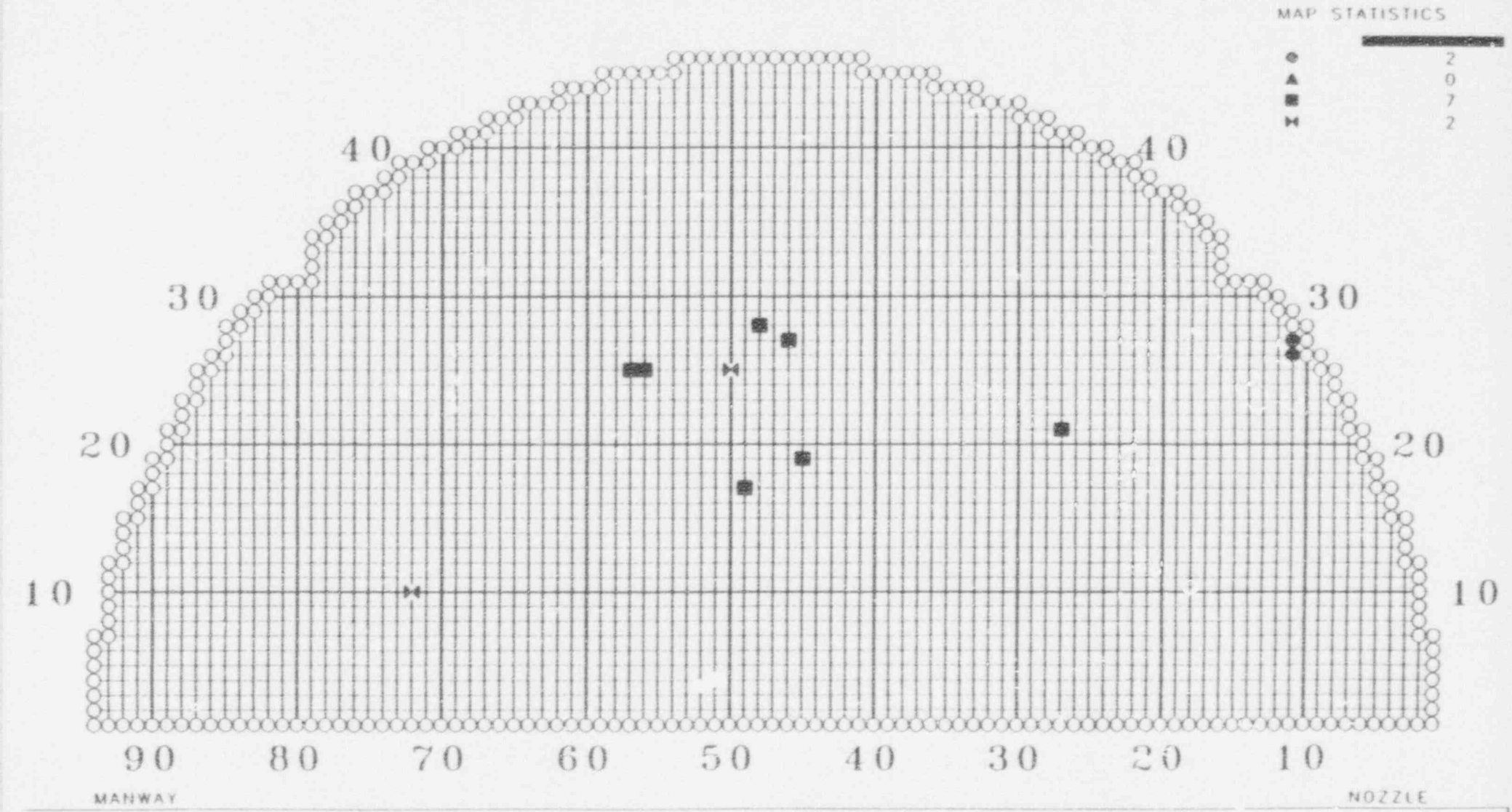
WEXTEX INDICATIONS (RPC PROBES)



STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP 1990 DATE PLOTTED 2/27/1992

NORTH ANNA UNIT 1 S/G C 2/27/92 PLUG LIST

WEXTEX INDICATIONS (RPC PROBES)



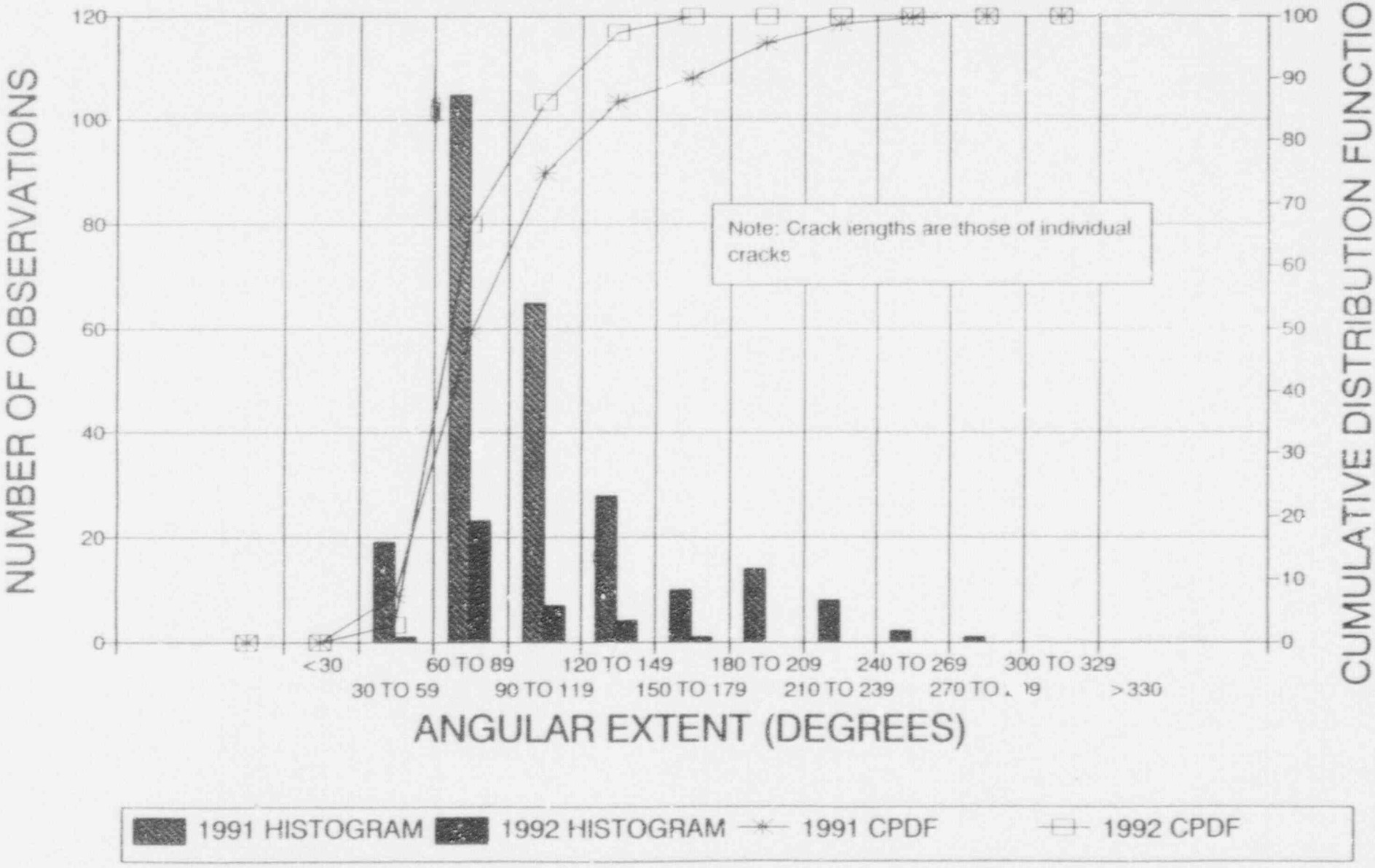
SAI MAI SCI MCI

TOP OF TUBESHEET

STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP. 1990 DATE PLOTTED: 2/27/1992

NORTH ANNA UNIT 1 ALL S/G's

WEXTEX CIRCUMFERENTIAL INDICATIONS



North Anna #1
February 1992

TSP Circumferential Cracks

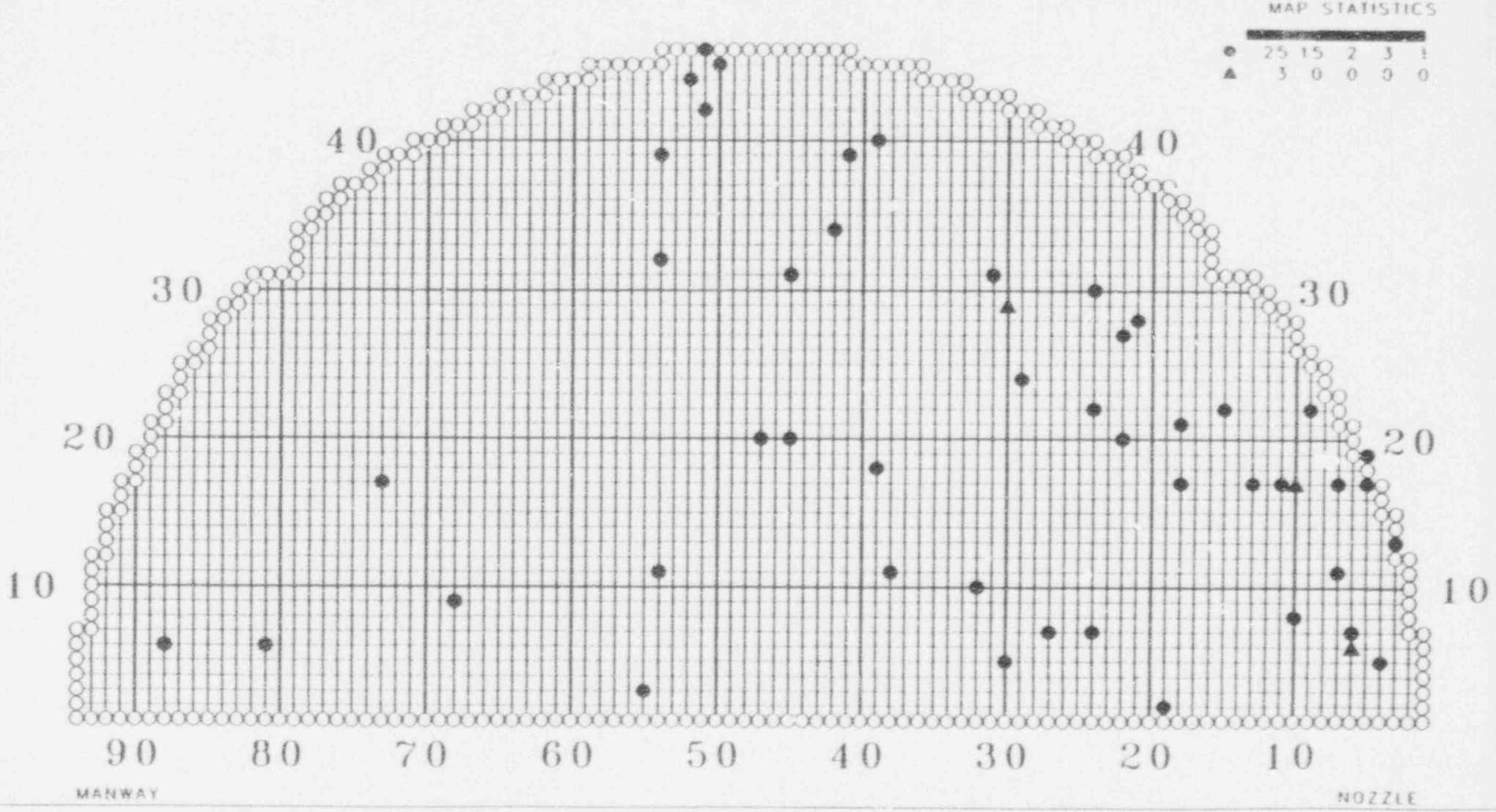
Elevation	Steam Generator A SCI/MCI	B SCI/MCI	C SCI/MCI
1H	25/3	22/0	27/0
2H	15/0	33/3	42/3
3H	2/0	7/2	19/1
4H	3/0	0/0	3/0
5H	1/0	0/0	1/0
6H	0/0	0/0	0/0
7H	0/0	0/0	0/0

SCI - SINGLE CIRCUMFERENTIAL INDICATION
MCI - MULTIPLE CIRCUMFERENTIAL INDICATIONS

DDM2001:022792

NORTH ANNA UNIT 1 S/G A 2/27 PLUG LIST

SUPPORT PLATE CIRCUMFERENTIAL INDICATIONS (RPC)



● SCI ▲ MCI

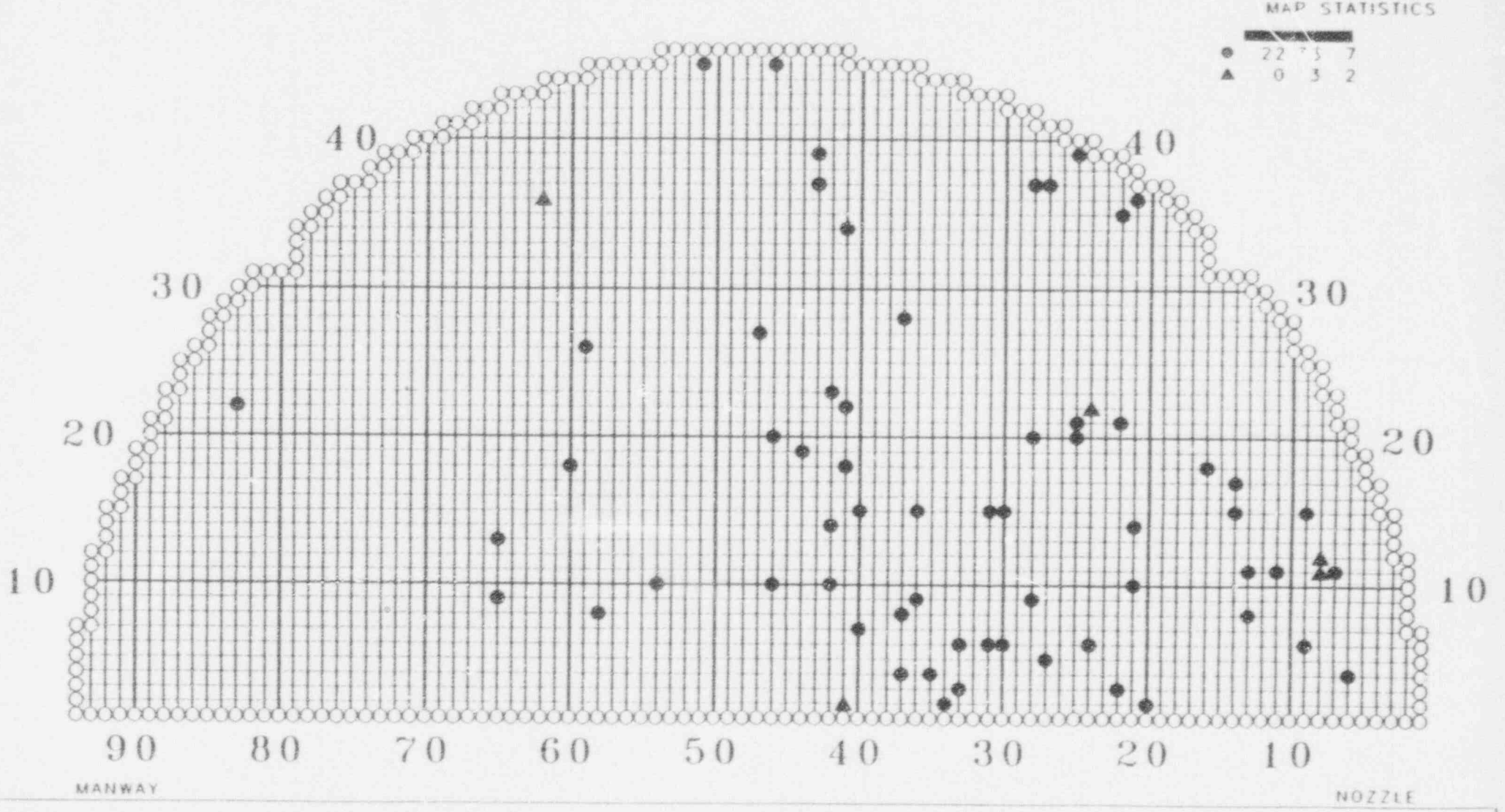
TSP 1 TSP 2 TSP 3 TSP 4

TSP 5 TSP 6 TSP 7

DATE PLOTTED: 2/27/1992

NORTH ANNA UNIT 1 S/G B 2/27 PLUG LIST

SUPPORT PLATE CIRCUMFERENTIAL INDICATIONS (RPC)

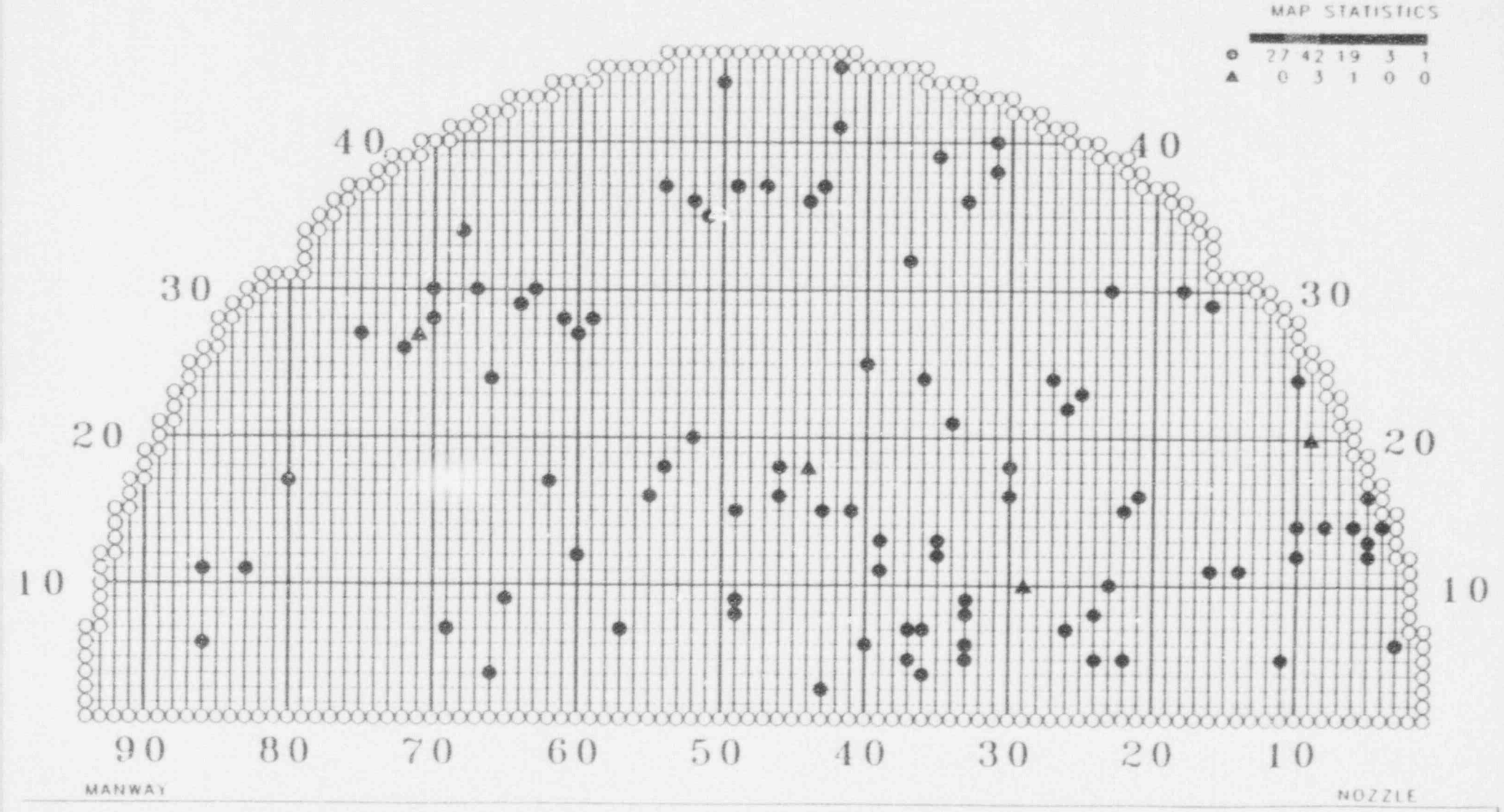


STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP 1990

DATE PLOTTED 2/27/1992

NORTH ANNA UNIT 1 S/G C 2/27/92 PLUG LIST

SUPPORT PLATE CIRCUMFERENTIAL INDICATIONS (RPC)



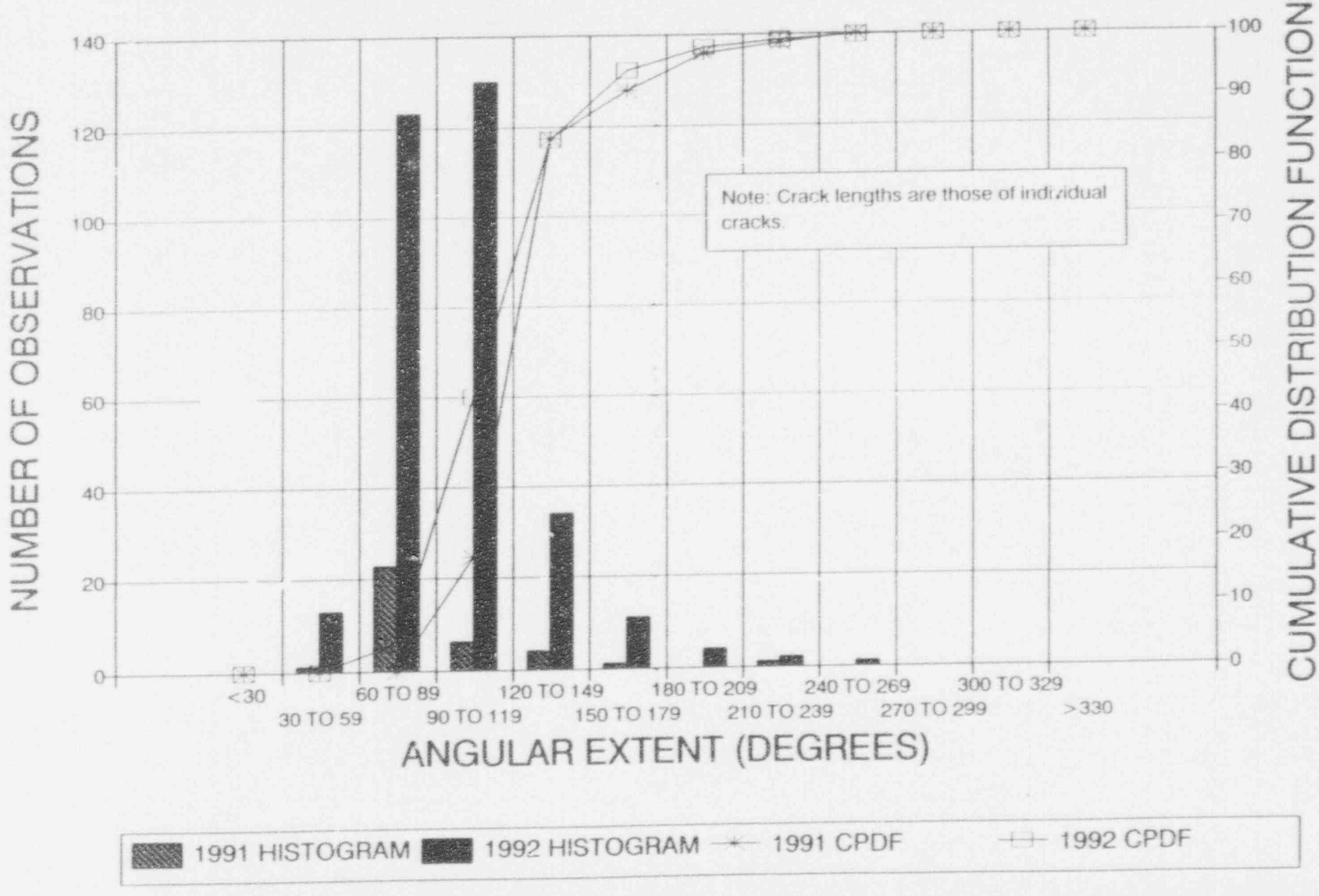
● SCI ▲ NCI

TSP 1 TSP 2 TSP 3 TSP 4

TSP 5 TSP 6 TSP 7

STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP 1990 DATE PLOTTED: 2/27/1992

NORTH ANNA UNIT 1 ALL S/G's
SUPPORT PLATE CIRCUMFERENTIAL IND.



North Anna #1
February 1992

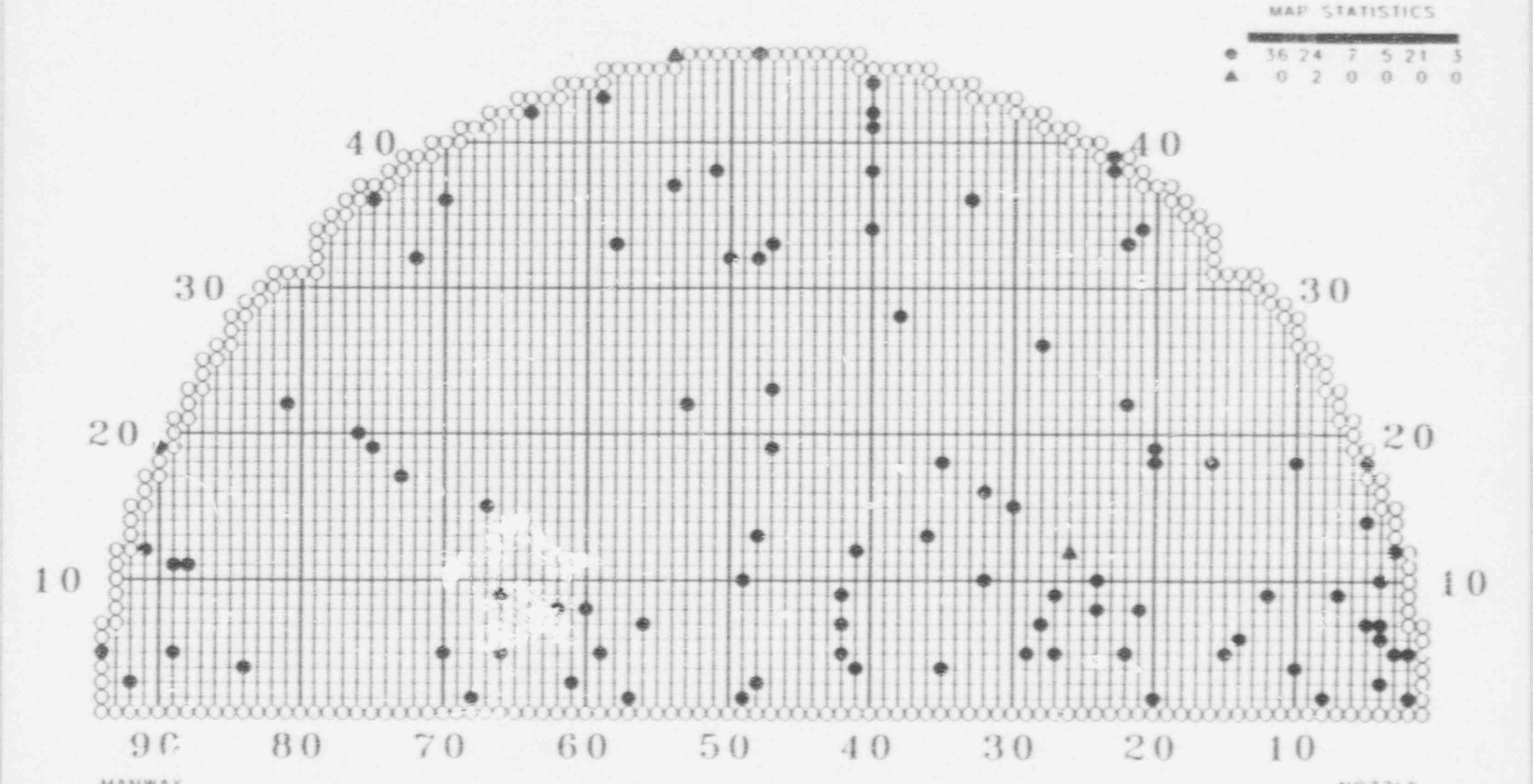
TSP Axial Cracks

Elevation	Steam Generator A SAI/MAI	B SAI/MAI	C SAI/MAI
1H	36/0	53/4	37/5
2H	24/2	14/3	41/1
3H	7/0	6/0	5/1
4H	5/0	5/0	8/0
5H	21/0	1/0	1/0
6H	3/0	1/0	2/0
7H	0/0	0/0	0/0

SAI - SINGLE AXIAL INDICATION
MAI - MULTIPLE AXIAL INDICATIONS

NORTH ANNA UNIT 1 S/G A 2/27 PLUG LIST

SUPPORT PLATE AXIAL INDICATIONS (RPC)



● SAI ▲ MAI

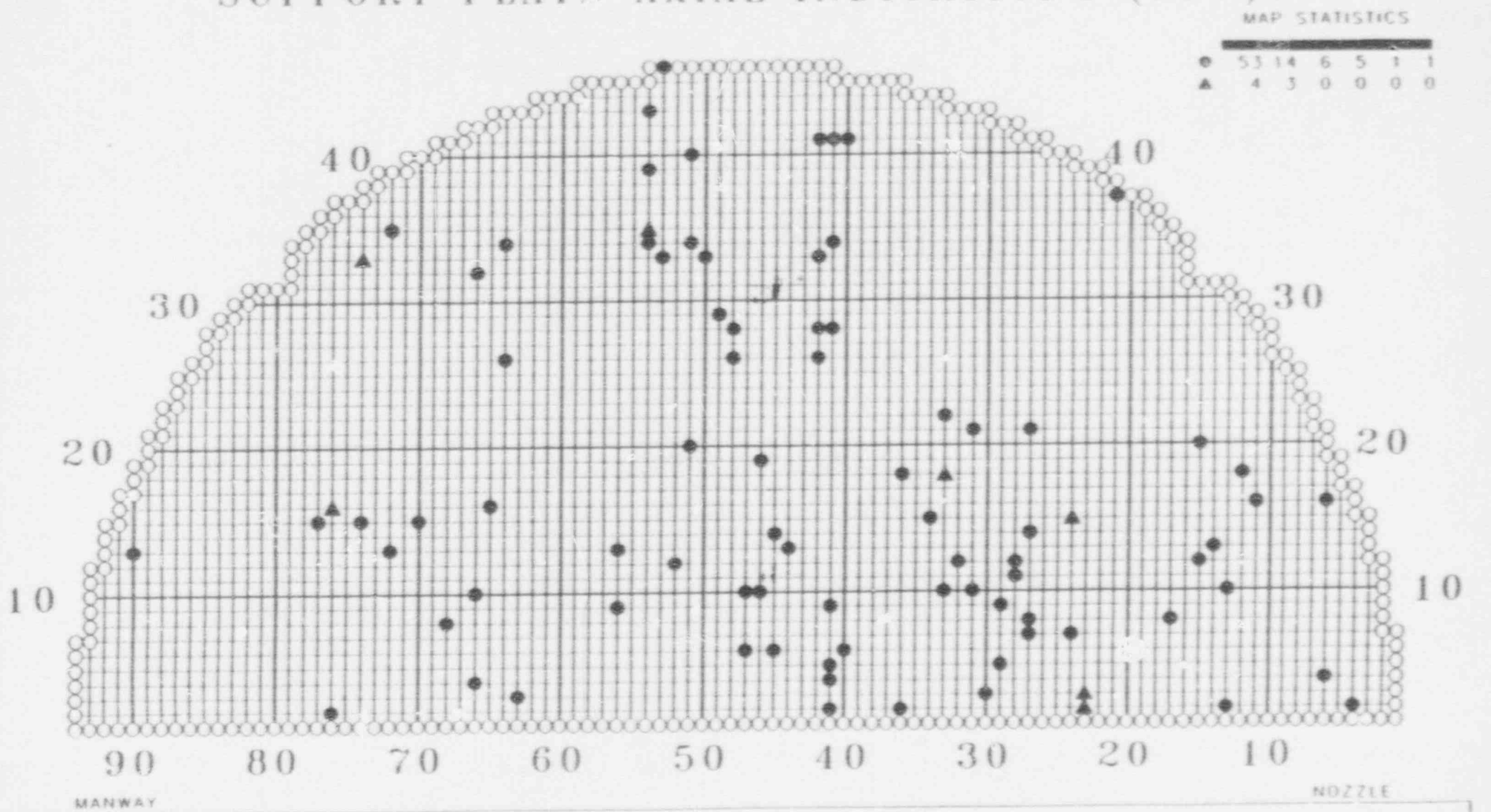
TSP 1 TSP 2 TSP 3 TSP 4

TSP 5 TSP 6 TSP 7

STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP. 1990 DATE PLOTTED 2/22/1992

NORTH ANNA UNIT 1 S/G B 2/27 PLUG LIST

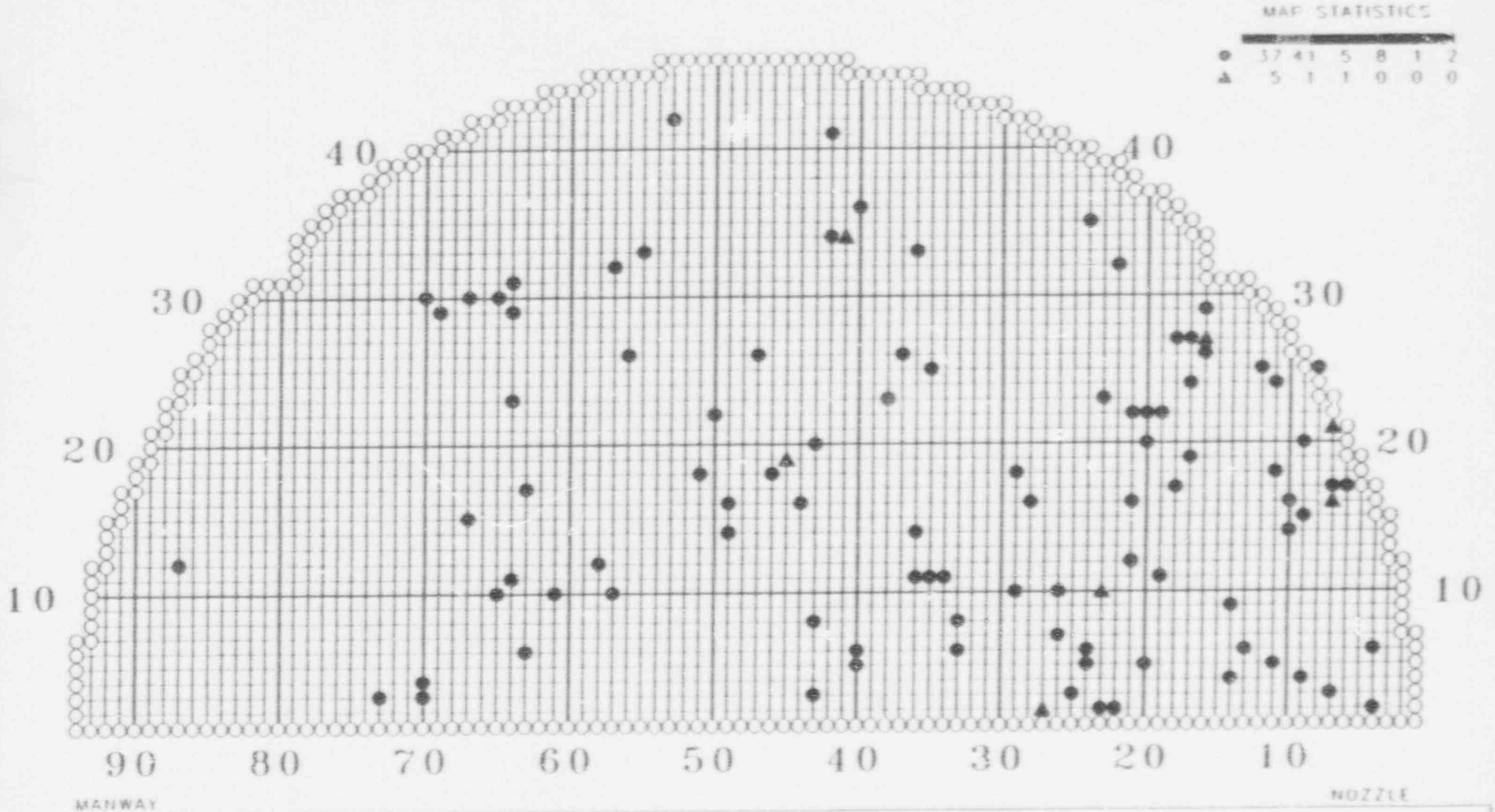
SUPPORT PLATE AXIAL INDICATIONS (RPC)



STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP 1990 DATE PLOTTED: 2/27/1992

NORTH ANNA UNIT 1 S/G C 2/27/92 PLUG LIST

SUPPORT PLATE AXIAL INDICATIONS (RPC)



STEAM GENERATOR INFORMATION SYSTEM (C) WESTINGHOUSE ELECTRIC CORP. 1990 DATE PLOTTED 2/27/1992

NORTH ANNA #1
FEBRUARY 1992

WEXTEX CIRCUMFERENTIAL CRACK GROWTH

24 WEXTEX CIRCUMFERENTIAL CRACKS WERE EVALUATED FOR GROWTH FROM 1991 TO 1992 USING RPC DATA.

AVERAGE CHANGE*: $12.8^{o} \pm 12.2^{o}$

SUPPORT PLATE CIRCUMFERENTIAL CRACK GROWTH

23 TSP CIRCUMFERENTIAL CRACKS COULD BE EVALUATED FOR GROWTH FROM 1991 TO 1992 USING RPC DATA.

AVERAGE CHANGE*: $10.5^{o} \pm 12.2^{o}$

*ALL NEGATIVE CHANGES SET TO ZERO.

NORTH ANNA #1
FEBRUARY 1992

TSPs WITH BOTH CIRCUMFERENTIAL AND AXIAL CRACKS

NO CASES OF MIXED MODE DEGRADATION WERE DETECTED IN S/G A AND S/G B.

SEVEN (7) LOCATIONS WITH MIXED MODE DEGRADATION AT THE SAME TSP EDGE WERE OBSERVED IN S/G C.

ELEVATION	TUBE EDGE*	CIRCUM.	MINIMUM SEPARATING LIGAMENT
TSP #1:	R29C16 +	75°	> 25°
	R3C43 +	73°	> 39°
	R18C46 +	69°	> 69°
TSP #2:	R10C29 -	119°	>113°
	R8C33 +	76°	> 37°
	R29C64 -	91°	> 27°
	+	63°	> 17°
	R30C67 +	133°	> 20°

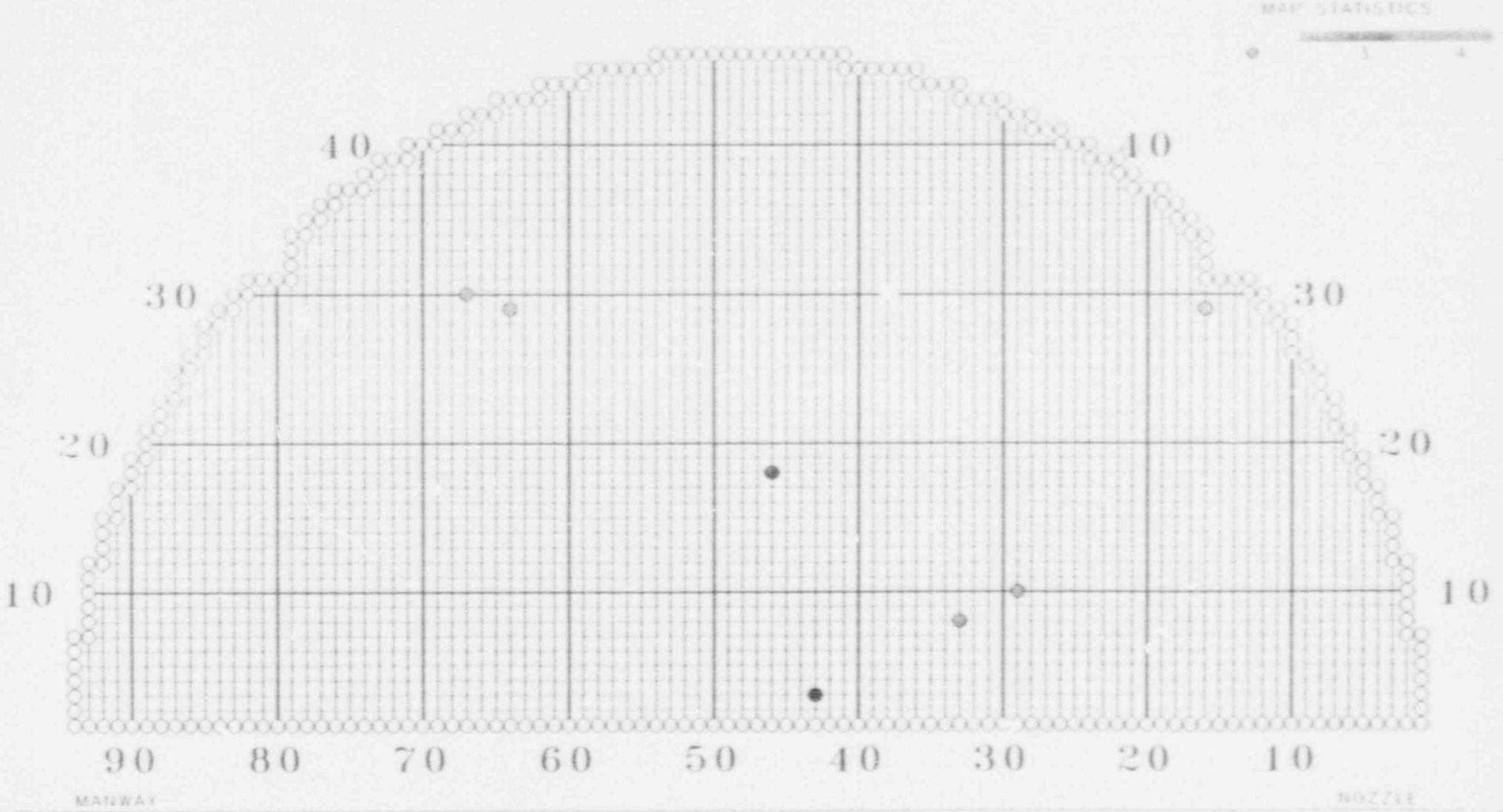
DATA WAS ACQUIRED WITH 2X RPC PROBE; FOR CLOSEST AXIAL-CIRCUMFERENTIAL PROXIMITY 3 COIL ZETEC PROBE WAS USED; NO APPARENT IMPROVEMENT IN RESOLUTION.

ALL THESE INTERSECTIONS WERE JUDGED TO BE ACCEPTABLE AGAINST TUBE BURST CRITERIA.

* + UPPER EDGE
- LOWER EDGE

NORTH ANNA UNIT 1 S/G C FEB 1992 INSPECTION

POTENTIAL MIXED MODE INDICATIONS



Westinghouse

Tube Integrity Evaluation

T. A. Pitterle

Tube Integrity Evaluation

Discussion Topics

- Growth Rates: '92 RPC vs. '91 8x1
- Acceptable Indications for Burst and Vibration (WCAP-13034)
- Tube Integrity Assessment
  - Largest SCI and SAI Assessment
  - Multiple Circumferential Indication Assessment
    - Tube Burst Tests
    - Assessment
  - Potential Combined Circumferential and Axial Assessment
  - Susceptibility to Tube Vibration
  - End-of-Cycle SLB Leak Rates

VIRGINIA POWER

Operational Considerations

J. A. Stall
Assistant Station Manager

Operating Perspective

- Current Cycle Operating History
- Operating Restrictions for Balance of Cycle
- Projected Load Profile for Remainder of Cycle
- Primary-to-Secondary Leakage Limits and Surveillance

Current Cycle Operating History

- Minimal Cycle-to-Date Primary-to-Secondary Leakage
- Cycle Chemistry Control in Accordance with EPRI Guidelines
- Operated With Conservative (50 GPD) Primary-to-Secondary Leakage Limits
- Maintained High Availability of Primary-to-Secondary Monitoring Instrumentation

Operating Restrictions for Balance of Cycle

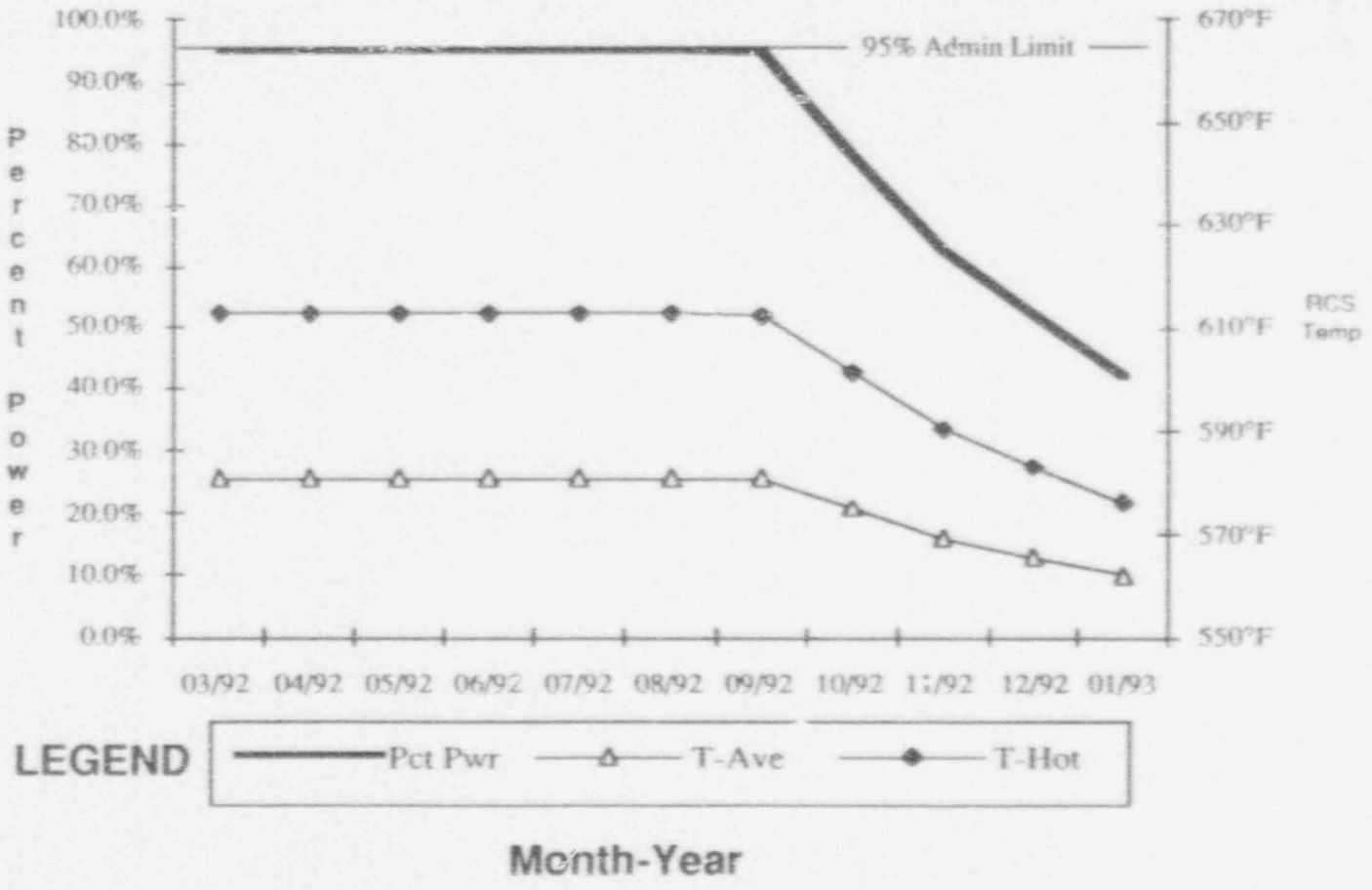
- Maximum Power Level Limited to 95%
  - Technical Specification minimum required RCS flow rate reduction
  - Revised LOCA analysis
  - Power coast to approximately 42% power will commence in mid-September

- Primary Coolant Iodine Activity Limit
  - Primary coolant iodine activity administratively limited to 75% of existing Technical Specification limit
  - Limitation based on re-analysis of offsite and control room doses resulting from a postulated main steam line break with primary-to-secondary leakage of 49 GPM (current calculation of 24 GPM is bounded)
  - Administrative limit provides assurance that an unreviewed safety question does not exist

Operating Restrictions for Balance of Cycle
(Continued)

- Minimum ECCS Equipment Operability
  - If one train of LHSI system is inoperable, then both trains of HHSI must be operable (Modes 1, 2, 3, and 4) or enter Technical Specification 3.0.3
  - Additional restriction is contained in Virginia Power technical submittal entitled "ECCS Systems"
  - Change is required due to assumptions on minimum equipment operability contained in the revised large break LOCA analysis

Projected Unit Load Profile for Rest of Cycle



Primary-to-Secondary Leakage Limits and Surveillance

- Primary-to-secondary leakage surveillance is performed every four hours (based on wet sample results)
- Air Ejector, N-16, and Steam Cenerator Blowdown Alarm Setpoints are set relative to the existing leakrate values to ensure that rapid increases in leakage will cause an alarm allowing prompt operator action
- "State-of-the-Art" N-16 radiation monitors are able to monitor primary-to-secondary leakage to within 1 GPD (continuous monitoring)
- Operability of primary-to-secondary monitoring instrumentation is required any time the unit is in Mode 1
- North Anna complies with administrative leakage limits more conservative than the Technical Specifications

Primary-to-Secondary Leakage Limits

	Technical Specification Limit	Standing Order 179 Administrative Limit
Individual Steam Generator Leakage	100 Gallons Per Day	50 Gallons Per Day *
Total Steam Generator Leakage	300 Gallons Per Day	150 Gallons Per Day *
Individual Steam Generator Leakage Trend	Increasing Trend That Indicates 100 GPD Would Not Be Exceeded Within 90 Minutes	Increasing Trend > 50 GPD in 90 Minutes * Step Change > 100 GPD in 30 Minutes Requires Tripping Unit

* Reduce power to < 50% within 90 minutes, and Below MODE 1 within two (2) hours of detecting excessive leakage,
Be in Hot Standby within the next 6 hours, and
Be in Cold Shutdown within the following 30 hours

VIRGINIA POWER

Startup Basis Summary and Schedule

M. L. Bowling
Manager - Nuclear Licensing and Programs

Startup Basis Summary

- Compliance with TS 3.4.5 on steam generators is provided by:
  - Comprehensive steam generator inspection plan was completed.
  - Tubes identified with defects have been plugged.
  - Tubes with possible degradation below the threshold of detection are bounded by the tube integrity evaluation.
  - Tube integrity evaluation for operation until January 1993 has been provided and complies with the requirements of Regulatory Guide 1.121.

- Proposed amendments have been submitted to revise TS 3.2.5 limit for minimum RCS flow rate and restrict maximum rated thermal power and do not pose a significant safety consideration. (Supports 35% peak / 30% avg. tube plugging)

- Administrative reduction in primary coolant iodine activity to ensure compliance with dose limits. (75% of the Technical Specification limit)

- "State of the art" primary-to-secondary leakage monitoring capability and conservative primary-to-secondary leakage limits provide additional assurance of continued safe operation.

Additional Submittals by Virginia Power

Anticipated Submittal Date	
March 2	Formal Request for Startup Approval - Due to Steam Generator Category "C-3" Inspection Results
April 30	North Anna Unit 1 Steam Generator Tube Integrity Evaluation Report and Mid-Cycle Inspection Results (WCAP Report)

Requested Schedule for NRC Approvals

NRC Approval Requested	Item / Issue
March 2	Steam Generator Category "C-3" Inspection Results (Mode 4) – NRC approval required prior to Unit 1 restart per Table 4.4-2 of TS 3/4.4.5 when more than one steam generator is classified Category "C-3".
March 3	95% Interim Reactor Power Reduction License Amendment Request (Mode 3)
March 4	Reduced Minimum RCS Total Flow Rate Technical Specification Change Request (Mode 2)