

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

REPORT ON THE 1993
EDDY CURRENT EXAMINATIONS OF THE
TMI-1 OTSG TUBING

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I.

INTRODUCTION

On September 10, 1993, TMI-1 was shut down for Refueling Outage 10R. During this refueling outage, GPUN performed Eddy Current (ECT) examinations of the Once Through Steam Generators (OTSGs). The scope of the examinations included tubing, plugs and sleeves. The tubing examinations were required by Technical Specification 4.19 (Reference 1), and GPUN engineering requirements. The sleeve examinations were performed as part of their installation process, for newly installed sleeves, and to monitor the condition of the previously installed sleeves.

During Outage 10R, a total of 2119 examinations were performed on 1559 tubes and 249 sleeves in OTSG A and 1334 examinations were performed on 1083 tubes and 253 sleeves in OTSG B. Based on these examinations, indications requiring repair were identified in two tubes. One tube in OTSG B was removed from service by plugging and one tube in OTSG A was repaired by sleeving. This brings the total number of plugged tubes to 1268 in OTSG A and 373 in OTSG B. The number of sleeved tubes is now 249 in OTSG A and 253 in OTSG B.

This report was prepared to satisfy the reporting requirements of Technical Specification 4.19.5.b (Reference 1). The data was extracted from GPUN TDR 1134 (Reference 11).

II.

METHODS

A. DATA ACQUISITION

The Eddy Current (ECT) Examinations were performed using the Zetec M1Z-18, Digital Multi-Frequency Eddy Current System. The data was recorded on optical disks and transferred via a fiber optic link to the data analysis trailer.

The data acquisition was performed remotely using B&W "ROGER" in-head fixtures and Zetec Model 4D probe pushers. In the past, switchers have been used to permit alternating between different types of probes. During this outage, the use of the fiber optic link reduced the number of probe changes eliminating the need for the switchers. During this outage, "ROGER" fixtures were installed in all four OTSG heads permitting the examination of plugs in both the upper and lower tubesheets and allowing the examination of tubing from either head. This arrangement also permitted the examination of tubes from the lower head while tube sleeves were being installed in the upper head.

The ECT examinations utilized a variety of techniques and probes which were tailored to the specific area being examined. The examinations were performed under GPUN surveillance procedure 1300-4B (Reference 5) and are discussed in the following section. The specific probe models used are listed on Table II-1.

A.1 General Tube Examinations

The general examination of the tubing material was performed from the inside of the tubes using the bobbin coil probe. This probe is the most durable probe available and permits examining the tubes at speeds up to 24 inches per second. The data from the bobbin coil probes was used for the detection of tube wall degradation including IGA, IGSCC, tube to support plate wear and any other general degradation. It was also used to measure tube diameters and profiles. All of the bobbin coil examinations were "full-length examinations" unless otherwise noted. For the purpose of this report, full-length is from the kinetic expansion transition in the upper tube sheet to the roll expansion transition in the lower tube sheet.

In the case of tubes with no previous degradation, these examinations were performed using a .510" diameter probe with an examination speed of 24 inches per second. For tubes with previous indications, the examinations were performed using a .540" diameter probe at a speed of 12 inches per second. This reduced speed was employed to provide the most constant probe speed practical and to reduce problems associated with the high fill factor of the probe. The purpose of these initial examinations was to screen indications for further evaluation.

Tubes with indications screened during the bobbin coil examinations were re-examined using the logic shown on Figures II-1 and II-2. In summary, this evaluation process ensured that each newly screened indication was examined using both a bobbin coil and pancake coil probe to characterize the extent of degradation. This basis for this process has been previously documented in References 2,3,4, and 9. For previously identified indications, previous 8x1-ABS or MRPC examinations are considered valid unless the bobbin coil indication has changed significantly. The combined information from these probes was then factored into the disposition of the tube.

A.2 Lane/Wedge Examinations

The tubes in the lane/wedge region of the OTSGs are subject to high cycle fatigue failures at the 15th tube support plate and at the secondary face of the upper tube sheet. The failures typically occur at the edges of the support structures and are circumferentially oriented, which limits the sensitivity of the bobbin coil probe in this area. To overcome the limitations of the bobbin coil probe, these areas are examined using a pancake coil probe. The coil orientation and surface riding design of the pancake coil probe improve the sensitivity for detecting circumferential flaws and minimize the negative effects of the support structures or any denting which may be present.

At present, there are two basic designs of pancake coil probes available for this examination, the 8x1-ABS probe and the Motorized Rotating Pancake Coil (MRPC) probe. The 8x1-ABS probe has been used for this examination since 1988-7R and was used for the majority of these examinations during Outage 1993-10R. The MRPC probe is designed to be

more durable than the 8x1-ABS probe and provides additional analysis capabilities, however, the MRPC probe's data acquisition process is more complex and slower than the 8x1-ABS probe (0.2"/sec versus 6"/sec).

With the completion of the preventive sleeving efforts during outage 1993-10R, the scope of these examinations has decreased significantly. The original scope of these examinations (1988-7R) included approximately 420 tubes per OTSG. During this outage, the scope of tubes was reduced to approximately 220 tubes per OTSG for Outage 11R.

A.3 Specialized Tube Examinations

During the conduct of examinations using both the bobbin coil and 8x1-ABS probes, ambiguous indications are detected and require further evaluations. These indications are resolved by examining the suspect area using the MRPC probe and correlating the results of the various examinations to determine the disposition of the tube.

A.4 Tube Sleeve Examinations

During Outage 10R, GPUN installed tube sleeves in approximately 125 tubes in each OTSG. In support of the sleeve installation, eddy current examinations were performed both prior to and after the sleeve installation. Prior to sleeving, each tube was examined using the .510" bobbin coil probe. This examination was performed as a general tube examination (A.2) with additional data analysis. This analysis, referred to as "Bobbin-Profilometry", consisted of measuring the diameter of the tube in the locations where the sleeve roll expansions are to be placed.

Following the sleeve installation, the .431 inch inner diameter sleeves were examined using a .400 inch diameter combination bobbin coil and cross axis coil probe. This probe was used to examine both the parent tubing and the sleeve material for degradation in both the newly installed (10R) and previously installed (9R) sleeves. In addition, for the sleeves which were installed during 10R, the data was evaluated to measure the diameter of the roll expansions using the "Bobbin-Profilometry" process. A rotating cross axis probe was also available to evaluate ambiguous indications but was not used.

B. DATA ANALYSIS PROCESS

The eddy current data analysis was performed using GPUN Procedure 6100-QAP-7209 063, Revision 0 (Reference 6). This procedure is based on the recommendations of the EPRI PWR Steam Generator Inspection Guidelines (Reference 7) and also meets the requirements of the TMI-1 Technical Specifications (Reference 1) and the ASME Code (Reference 10).

B.1 Data Analyst Qualifications

The data analysis process was performed by Conam Nuclear personnel qualified and certified to at least Level IIA, in accordance with their

approved program. As a supplement to this qualification, site specific indoctrination and training was attended by all data analyst personnel. The program included both classroom lectures and hands on practice using eddy current data and experience from both TMI and another B&W designed plant. The training covered generic OTSG degradation mechanisms and examination methods and also specifically addressed the Bobbin Coil, 8x1-ABS, and MRPC methods which are used at TMI.

The total indoctrination process encompassed approximately 16 hours and was conducted by the designated lead analyst. At the completion of the indoctrination, each data analyst was required to pass a performance demonstration prior to analyzing bobbin coil or 8x1-ABS data for each method to be analyzed. Since the MRPC examinations are performed in a very specific manner, no performance demonstration was required. Appendix VI is an outline of the program.

B.2 Data Analysis Sequence

The data analysis process was performed in accordance with the same procedures used for the data analyst indoctrination and training. The process was performed in three (3) parts with at least two (2) separate data analysts evaluating 100% of the data for each examination. The only exception to this was the "profilometry" portion of the examinations performed for tube sleeving. This portion of the data received only a single analysis with graphic printouts provided to B&W for review by the process engineers. The data analysis process included:

1. Primary Analysis: The primary analysis included a 100% evaluation of the ECT data and the recording of all attributes identified in Appendix I. This analysis included recording the phase angle, percent through wall, voltage, circumferential extent and location of the indications.
2. Secondary Analysis: The secondary analysis also included a 100% review of the ECT data for the attributes identified in Appendix I. This analysis, performed as a blind review, was performed in the same manner as the primary analysis.
3. Resolution Analysis: To complete the analysis process, the results of both the primary and secondary analyses are reviewed by the designated lead analyst. This review combines the primary and secondary analyses results and also resolves any discrepancies. For Outage 1993-10R, this function was performed by a Level III Data Analyst. In the case of indications which are reported as pluggable by one analyst, but are resolved as being non-pluggable, the resolution process is documented using a "Overruling Pluggable Indication" report form.

B.3 Data Analysis Software

The data for all examinations was evaluated using the Zetec Eddynet Analysis software, Version 22, for the primary, secondary and resolution analysis.

B.4 Recording Of Indications

Eddy current indications were recorded to permit dispositioning the examination results and to facilitate monitoring the tubes during future examinations. The recorded indications fall into two basic groups, "Indications from Tube Wall Degradation" and "Indications from Possible Damage Precursors". The specific criteria used to record the indications is dependent upon the type of probe being used. A complete list of all abbreviations and definitions used to classify indications is included as Appendix I.

Indications from Tube Wall Degradation

Indications of tube wall degradation are initially recorded during the analysis of the bobbin coil data. When practical, the indications are assigned a "percent through wall" value based on the phase angle of the indication. When the indication cannot be accurately assigned a through wall value, it is assigned a three letter code such as BVC, DNI, DSI, DRI, DTI or NQI which indicates the presence of a possible flaw. In either case, the indication's location, amplitude, signal phase angle and "percent through wall" or three letter code are recorded to permit further evaluation of the tube.

Once the initial screening of the indications is completed, supplemental examinations are performed using the pancake coil probes if previous data is not available or if the indications have changed. The data from these examinations is analyzed and indications are recorded using three letter codes which indicate the approximate geometry of the degradation. In general, indications are recorded as SCI, SAI, MCI, MAI, SVI or MVI. These codes indicate whether the indication is single (S) or multiple (M), circumferential (C) or axial (A), and whether or not a volumetric (V) condition is present. Like the bobbin coil indications, these codes are recorded along with the location, amplitude and phase angle of the signal.

Indications from Possible Damage Precursors

The analysis of the eddy current data also identifies indications which are not attributed to tube wall degradation. These indications may be the result of irregularities in the tube wall profile (IDC), changes in the magnetic permeability (PVN), denting (DNT) or other changes in the electrical impedance of the tube, not related to tube wall degradation. These indications are recorded for information only and do not require follow-up examinations.

Indications Recorded During Specialized Examinations

The data analysis for specialized examinations such as 8x1-ABS or MRPC probes requires a process which is different than the bobbin coil examinations. In the case of these examinations, the data is typically evaluated to confirm a previously recorded indication. As such, the data is recorded to support dispositioning a given indication by length, size, depth or location on a case by case basis.

Indication Locations

The locations of the ECT indications are recorded to identify their "elevation" or "axial location" in the OTSGs. For free span indications, the locations are recorded in inches above "+" the tubesheet surfaces or tube support plate center. For indications located within or adjacent to the tube support plates, the indications are recorded as "+" or "-" from the center of the T.S.P. The relative locations of the tubesheets and tube support plates (T.S.P.) are shown in Figure II-3.

B.5 Dispositioning of Results

The combined results of the Bobbin Coil and Pancake Coil examinations are used to disposition the individual tubes. This dispositioning process may involve data which was analyzed by several different data analysts. Since the various techniques are complimentary and do not necessarily supersede one another, the individual evaluations of each technique are not changed to reflect the disposition of the tube.

C. RECORDS

The results of the eddy current examinations are considered to be permanent records. The following records have been transmitted to Information Services for retention.

- Optical discs containing the raw data and the primary, secondary and resolution results.
- Printed copies of the primary, secondary and resolution results.
- Printed copies of "Overruling Pluggable Indication" forms.
- Printed copy of the data base containing the complete examination results.
- Copies of the site orientation and indoctrination forms.
- Copies of the data analyst performance demonstrations.
- Computer diskettes containing the ISIS data base used to disposition the tubes.

FIGURE II-1

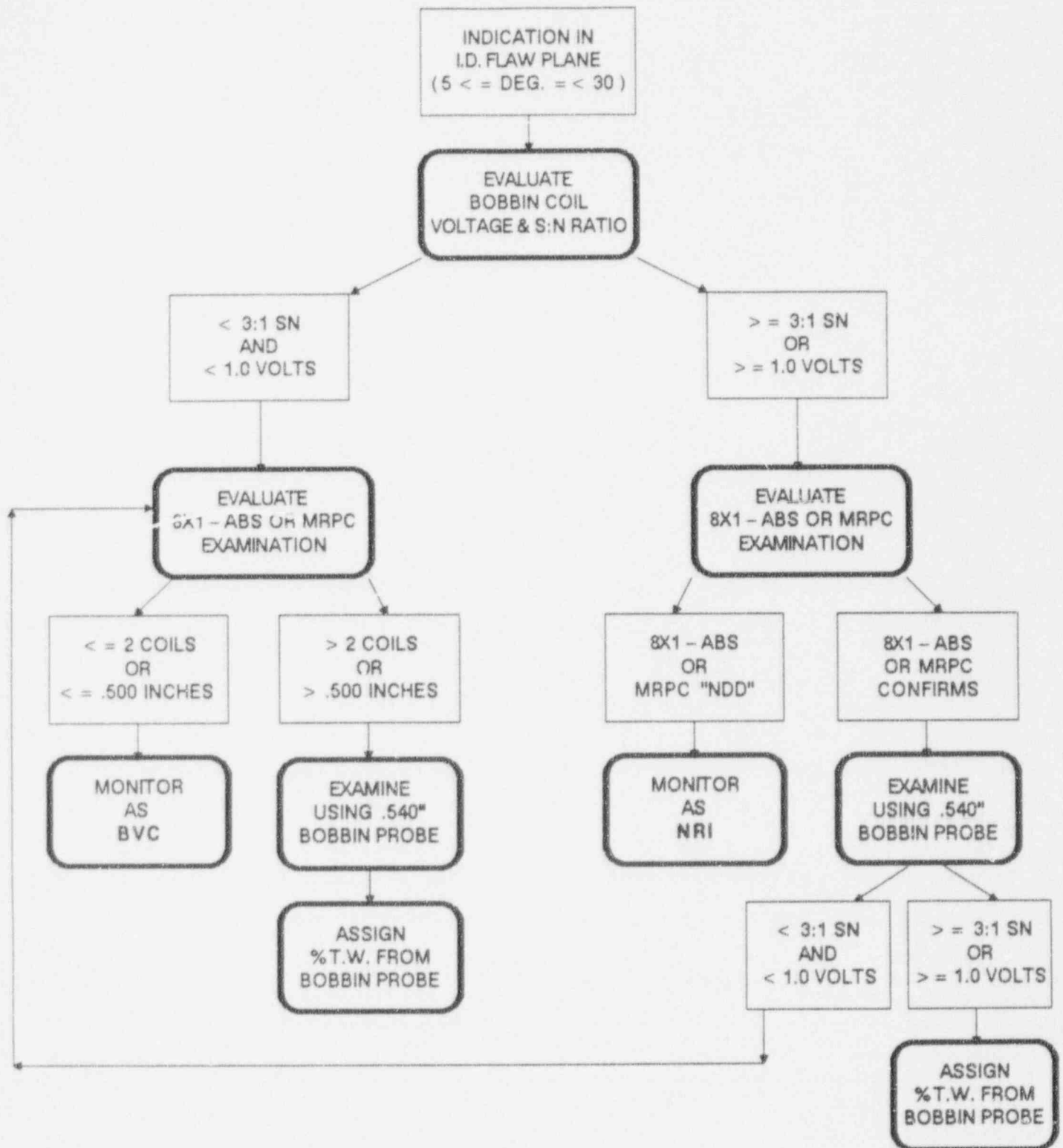


FIGURE II-2

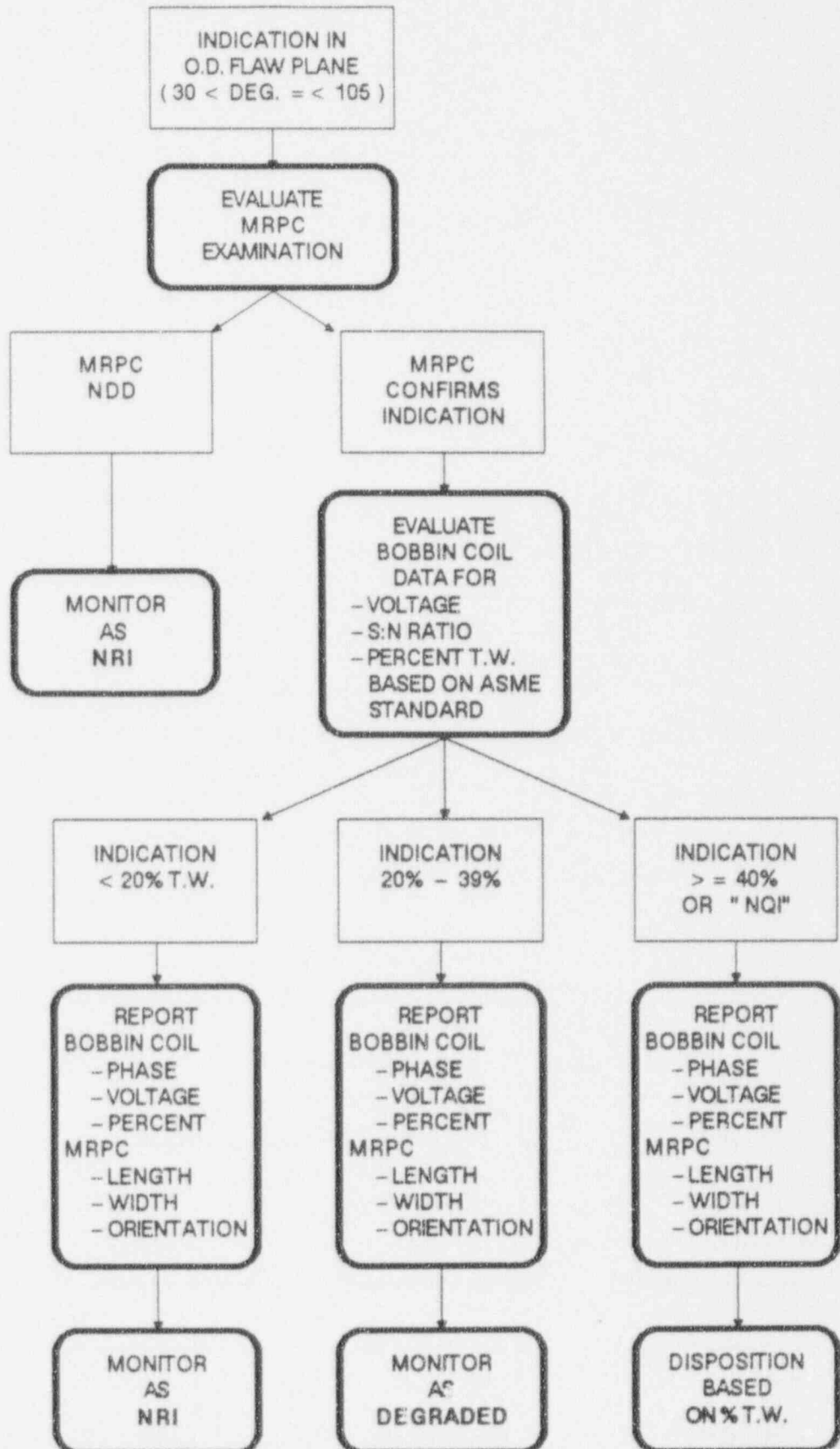


FIGURE II-3

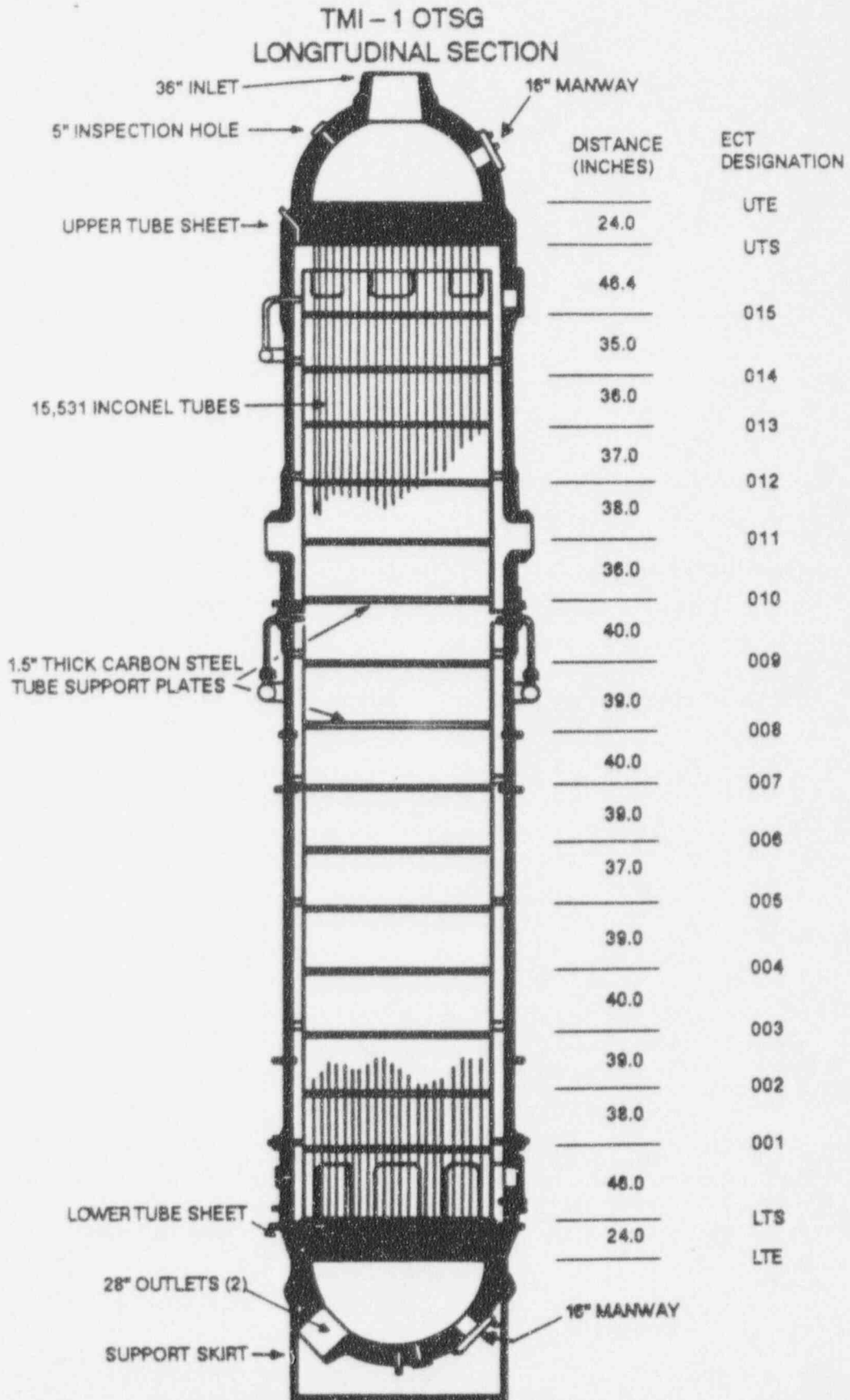


TABLE II-1

LISTING OF PROBES USED DURING OUTAGE 10R

<u>PROBE NAME</u>	<u>PROBE MODEL</u> # USED	<u>COIL DESIGN</u>	<u>COIL DIAMETER</u>	<u>USE</u>
Bobbin	A-540-LC/NF/M/HF	Bobbin Differential	.540"	Tubes with Indications
Bobbin	A-510-LC/NF/M/HF	Bobbin Differential	.510"	Tubes without Indications Profilometry Exams
8x1-ABS	8C-5240-555-A0187	Pancake 8-Coil Absolute	.187"	Lane/Wedge Tubes with Indications
MRPC	B-510-MRPC/PH	Pancake 1-Coil Absolute	.125"	Lane/Wedge Tubes with Indications
MRPC	B-520-MRPC-3C/7PH	Pancake 3-Coil Absolute	.125"	Lane/Wedge Tubes with Indications
COMBO	2AX-400-6FLC/DIFF	Bobbin/ X-Axis Differential	.400"	Installed Sleeves

ALL PROBES WERE MANUFACTURED BY ZETEC INC.

III.

OUTAGE 10R EXAMINATION CATEGORIES AND RESULTS

The locations of the tubes and sleeves examined during Outage 10R are shown on Figures III-1 through III-4. The examinations were performed in two major groups, based on the examination requirement.

- A. Examinations Required by Technical Specification 4.19
- B. GPUN Elective Examinations (Tubing)

These groups are further divided into specific categories of tubes. When classifying the tubes by examination category, some tubes may satisfy the criteria for more than one category and may need to be examined with more than one probe in which case the tube will appear in more than one category. If the tube meets the criteria for multiple categories requiring examination with the same probe, the tube is placed into the first category which applies, following the sequence of this report. As a result of this sequence, some tubes may appear to be missing from a category because they were previously examined. For example, a lane/wedge tube may have been examined as an ISI tube and will not be re-examined as a lane/wedge tube. This section defines the examination scope, purpose, selection criteria, and examination results by category.

A. EXAMINATIONS REQUIRED BY TECHNICAL SPECIFICATION 4.19

A-1 PREVIOUSLY DEGRADED TUBES

Data Sets: ISI, ISI-9R
Probe: .540" - Bobbin
Extent: Full Length

SCOPE

In OTSG "A", 288 tubes were examined.
In OTSG "B", 39 tubes were examined.

REASON FOR EXAMINATION

The examination of the "Degraded" tubes provides a means of monitoring existing degradation. New examination results are compared to the results of previous examinations to determine if there is evidence of an active degradation mechanism occurring in the OTSGs.

SELECTION CRITERIA

The "Degraded Tube" population was selected to meet the requirements of Technical Specification 4.19.2.a.1, which requires the examination of all inservice tubes which have previously identified tube wall degradation of 20% T.W. or greater. During the period of 1981 to 1988-7R, tubes were screened with the bobbin coil probe and all indications were then examined using the 8x1-ABS probe. Tubes with indications $\geq 20\%$ T.W. which were confirmed by the 8x1-ABS probe were then considered to be degraded and were included in this population.

One of the inherent limitations of the 8x1-ABS probe is the variability of the eddy current field based on the coil to discontinuity orientation. This variability is most pronounced for small discontinuities and using the above method, tubes with small indications tended to drop in and out of the "Degraded Tube" population. To reduce this variability, starting with the 1990-8R examinations, all inservice tubes with bobbin coil indications of 20-39% through wall are included in this category. These tubes, with degradation detected prior to 1991-9R, are identified as the sub group of "ISI".

The second sub group was identified as ISI-9R. This group includes indications identified as 20-39% through wall for the first time, during Outage 1991-9R. These tubes were identified separately to permit additional sorting capabilities in the computer data base.

RESULTS

The results of the 10R examinations of the "Degraded" tubes were consistent with previous examination results. The majority of the previously identified indications showed no evidence of change from previous examinations. In two cases (one in each OTSG), the reported % through wall values exceeded the

established plugging criteria. One tube was repaired by sleeving and the other was removed from service by plugging.

OTSG A

One (1) tube (A-74-30) had an inner diameter initiated indication of >40% through wall in the upper tubesheet portion of the tube. This section of tubing was repaired by inserting an 80 inch sleeve from the top of the upper tubesheet. This sleeve is the same design as the sleeves installed in the lane wedge region.

OTSG B

One (1) tube (B-8-44) had an inner diameter initiated indication of >40% through wall in the freespan portion of the tube and was removed from service by plugging. The indication in this tube was determined to be a single volumetric indication (SVI) by the MRPC probe. Since the indication was previously examined and determined to be a 1-coil indication by 8x1-ABS, and the amplitude of the bobbin coil indication had not changed, it was determined to be a 1-coil indication for the application of the stabilization criteria.

TRENDING OF I.D. INDICATIONS

To monitor for evidence of continuing degradation of identified indications, the 1993-10R examination results were compared to the 1991-9R results. The indications included in this comparison were previously recorded indications with through wall values of 16% or greater (See note on Table III-2) in both 1993-10R and 1991-9R. A complete listing of the indications is shown in Table III-1 and Appendix II.

In "A" OTSG, 165 indications met the above criteria. The mean change in the indications was -0.5% of wall thickness between 9R and 10R (standard deviation 6.68% of wall). The amplitude of these indications showed a mean change of +0.19 volts (standard deviation 0.33 volts).

In "B" OTSG, 35 indications met the criteria. The average change in the indications was -0.8% of wall thickness between 9R and 10R (standard deviation 6.32% of wall). The amplitude of these indications showed a mean change of +0.05 volts (standard deviation 0.13 volts).

When combined, the average change per indication for both OTSGs was -0.6% of wall (standard deviation 6.62% of wall). The mean amplitude change was +0.16 volts (standard deviation 0.28 volts).

To determine the significance of these changes, the data was compared to similar evaluations performed during previous examinations. Based on this comparison (see Table III-2), in which the mean change has been both positive (apparent increase in the depth of the indications) and negative (apparent decrease in the depth of the indications), the identified changes are considered to be within the qualified repeatability of the ECT process, and do not indicate a trend of ongoing degradation. This variability is discussed in Reference 3.

TABLE III-1

COMPARISON OF INDICATIONS IN DEGRADED TUBES

	NUMBER OF TUBES		
	OTSG A	OTSG B	TOTAL
Total Degraded Tube Population	288	39	327
Tubes Included in Comparison *	125	25	150
Indications in Comparison	165	35	200
Tubes Excluded from Comparison **	163	14	177

* Comparison includes only indications >16% T.W. in 9R and 10R.

** Excluded indications were not recorded as >16% T.W. in 9R or 10R.

% Through Wall Comparison

OTSG	Number Indica- tions	No. Inds % T.W. Increased 9R-10R	No. Inds T.W. Decreased 9R-10R	No. Inds % T.W. Unchanged 9R-10R	Mean Change % T.W. 9R-10R	Std Deviation % T.W. 9R-10R
A	165	56	63	46	-0.5	6.68
B	35	13	15	7	-0.8	6.32
Both	200	69	78	53	-0.6	6.62
A&B						

Amplitude Comparison

OTSG	Number Indica- tion	No. Inds Volts Increased 9R-10R	No. Inds Volts Decreased 9R-10R	No. Inds. Volts Unchanged 9R-10R	Mean Change Volts 9R-10R	Std Deviation Volts 9R-10R
A	165	121	41	3	0.19	0.30
B	35	22	11	2	0.05	0.13
Both	200	143	52	5	0.16	0.28
A&B						

TABLE III-2

COMPARISON OF STATISTICAL EVALUATION TO PREVIOUS EVALUATIONS

Period	Number Indica- tions	Mean Change % T.W.	STD Deviation % T.W.	Mean Change Volts	STD Deviation Volts
1984/1986-5M	152	-2.6	6.1	-0.2	0.3
1986-5M/1986-6R	118	+1.1	6.6	0.0	0.2
1986-6R/1988-7R	119	+2.6	5.5	+0.2	0.3
1988-7R/1990-8R	291	+0.2	7.43	-0.25	0.35
1990-8R/1991-9R	229	-2.0	6.96	+0.07	0.31
1991-9R/1993-10R	207	-0.6	6.62	+0.16	0.28

Previous data extracted from GPUN TDR 1068, Revision 0 (Reference 8).

NOTE: For outages 1984 through 1988-7R, all indications were examined with both the 8x1-ABS and .540" bobbin coil probes and only indications >20% T.W. and confirmed by both probes were included. This criteria biased the data by eliminating threshold level indications which showed a decrease in % T.W., thereby dropping below 20% T.W., or were affected by the variability of the 8x1-ABS probe. For 1990-8R through 1993-10R, all indications ≥16% T.W. were included, which allows for the variability of the process and accounts for the increased number of indications.

A-2 TECH. SPEC. RANDOM SAMPLES

Data Sets: 3%-TS
Probe: .510" Bobbin, .540" Bobbin (Limited)
Extent: Full Length

SCOPE

In OTSG "A", 470 tubes were examined.
In OTSG "B", 470 tubes were examined.

REASON FOR EXAMINATION

The tubes in this sample have no history of degradation below the kinetic expansion. They are examined to monitor the overall condition of the steam generator tubing.

SELECTION CRITERIA

The initial sample included at least 3% of all the tubes in each OTSG. As required by T.S. 4.19.2.a.2, at least 50% of the tubes were located in the areas where experience has indicated potential problems. This area is the outer periphery, which is defined as the tubes located outside the radius of the outer support rods. The remaining tubes were selected to provide a representative sample of the tube bundle. As directed by Engineering, the samples were selected to include tubes which have not been examined since the 1984 examinations (73%) and tubes which had been examined since 1984 (27%).

RESULTS

OTSG A

In OTSG A, the examination of the 3%-TS sample revealed inner diameter initiated indications exceeding 20% through wall in two tubes (A-13-10 and A-103-77). The indications in these tubes were recorded as 23% and 33% through wall, respectively, and were confirmed as single volumetric indications (SVI) by the MRPC probe. The tubes will be added to the degraded tube population of the next examination.

Three tubes had non-quantifiable indications (NQI) which were recorded using the bobbin coil probe. The indications in two of these tubes (A-25-87 and A-63-41) were outer diameter initiated while the indications in one tube (A-25-81) was inner diameter initiated. All three of these areas were examined using the MRPC probe and no detectable degradation (NDD) was reported. No additional monitoring will be required for these tubes.

In one tube (A-72-124), a small amplitude inner diameter indication was recorded as a BVC. This area was examined using the MRPC and a single volumetric indication was noted. Since this indication is below the voltage criteria for sizing using the bobbin coil probe, and since the MRPC confirms its minor nature, the tube remained inservice and will be monitored as a BVC tube.

OTSG B

In OTSG B, the examination of the 3%-TS sample revealed one tube (B-28-42) with an indication exceeding 20% through wall. This indication was outer diameter initiated and was recorded as 22% through wall using the bobbin coil probe. An MRPC examination of this area showed no detectable degradation (NDD), however, this tube will be monitored as a NRI tube during the next examination.

Two tubes (B-22-83 and B-68-62) had distorted tube support plate signals with possible outer diameter initiated indications (DSI) recorded. These areas were examined using the MRPC probe and showed no detectable degradation (NDD). No additional monitoring will be required for these tubes.

B. GPUN ELECTIVE EXAMINATIONS

B-1 TUBES WITH INDICATIONS NOT CONFIRMED BY 8x1
ABSOLUTE EXAM IN PREVIOUS EXAMINATIONS

Data Set: DS7, GE20-OLD
Probe: .540" Bobbin
Extent: Full Length

SCOPE

In OTSG "A", 223 tubes were examined.
In OTSG "B", 67 tubes were examined.

REASON FOR EXAMINATION

Since 1981, GPUN has used a two step process to identify and disposition indications. In this process, indications are screened using the bobbin coil probe and are confirmed using the 8x1-ABS probe. Indications which are screened by the bobbin probe but are not confirmed by the 8x1-ABS probe are considered to be either relevant indications, which are below the required threshold of detection, or non-relevant indications, caused by something other than tube wall degradation.

Starting in 1981, these indications have been recorded using various codes to permit future monitoring. In outages since 1981, a small number of these indications have been determined to be relevant and the tubes have been reclassified as degraded or removed from service. In other cases, the indications have been recorded and tubes were returned to the general tube population.

For the 1993-10R outage, GPUN decided to re-examine all tubes with previously accepted indications. The purpose of this examination was to standardize the manner in which the indications are recorded and to ensure that the latest criteria have been applied in the dispositioning of each tube.

SELECTION CRITERIA

All inservice tubes, which have had indications screened by the bobbin coil probe and subsequently accepted by the 8x1-ABS probe, are included in this group.

RESULTS

OTSG A

In OTSG A, three tubes had inner diameter indications screened as 20% through wall or greater using the .510" bobbin coil probe. In two tubes (A-40-98, A-43-107) a re-examination of the indications, using the .540" bobbin coil probe, showed them to be less than 20% through wall. In one tube (A-32-81), the .540" probe confirmed the indication was 30% through wall. Since this

indication was previously confirmed by 8X1-ABS (1986-5M), this tube will be added to the degraded tube population.

One tube (A-55-122) had a small amplitude inner diameter indication recorded as a BVC. This area was examined using the MRPC probe and the indication was determined to be a small single volumetric indication (SVI). This tube will continue to be monitored as a BVC tube.

In three tubes distorted indications were recorded as DSI and NQI. These areas were examined using the MRPC probe. In two cases (A-80-115, A-99-99), the indications were determined to be non-relevant. In the third case (A-15-41), the indications were determined to be shallow, outer diameter wear, from the contact surface of the broached tube support plate. Based on the combined results of the bobbin coil and MRPC examinations, the wear was determined to be approximately 20-30% through wall and this tube will be monitored as a degraded tube during future examinations.

OTSG B

In OTSG B, three tubes had outer diameter indications identified as 20% through wall or greater. The indications in two of the tubes (B-26-31, B-61-98) were determined to be nonrelevant based on the MRPC probe. These tubes will be monitored as NRI tubes during the next examination. In the third tube (B-120-42), the indication was determined to be a small, single volumetric indication. This tube will be monitored as a degraded tube during future examinations.

In addition, distorted indications were identified in two tubes (B-66-37, B-87-1) and were recorded as NQI and DSI. Follow-up examinations using the MRPC probe showed both indications were non-relevant. No additional monitoring of these tubes will be required.

B-2 LANE/WEDGE TUBES

Data Set: Lane/Wedge, Sleevebase, Sleeves-OLD, Sleevepost
Probe: .510" Bobbin, 8x1-ABS, 400-Combo
Extent: .510" Bobbin Coil - Full Length
.510" Bobbin Coil - Lower sleeve end to lower
tube end for previously sleeved tubes.
8x1-ABS - 14th T.S.P. to Upper Roll Transition
.400" Combo Lower Sleeve End to Upper Sleeve End

SCOPE:

In OTSG "A":	.510" Bobbin -	323 Lane/Wedge Tubes, 123 Sleevebase Tubes
	8x1-ABS -	217 Lane/Wedge Tubes
	.400" Combo -	124 Sleevepost Tubes, 125 Sleeves-OLD
In OTSG "B":	.510" Bobbin -	333 Lane/Wedge Tubes, 128 Sleevebase Tubes
	8x1-ABS -	217 Lane/Wedge Tubes
	.400" Combo -	128 Sleevepost Tubes, 125 Sleeves-OLD

REASON FOR EXAMINATION:

OTSGs have historically experienced degradation in the lane/wedge tubes. Previously observed damage mechanisms have included tube to tube support plate wear at various axial locations and high cycle fatigue cracking at the 15th tube support plate and the secondary face of the upper tubesheet. In consideration of these damage mechanisms, GPUN elected to examine all of the tubes in this region. In addition, GPUN has preventively sleeved some tubes in this region, to reduce the probability of high cycle fatigue cracking.

SELECTION CRITERIA

LANE/WEDGE: These examinations included all inservice tubes in the lane and wedge regions as defined in paragraph 4.19.2.a.4(1) of the TMI-1 Technical Specifications (Reference 1). NOTE: Tubes which were sleeved during 1993-10R were examined as the sleevebase data set. The lane area includes the tubes in three rows on each side of the open inspection lane (Rows 73, 74, 75, 77, 78, 79) from Tube 1 to the center of the OTSG. The wedge tubes are the tubes included in the wedge formed by drawing a line from Row 66 Tube 1 to Row 75 Tube 15 and from Row 86 Tube 1 to Row 77 Tube 15. See Figures III-3 and III-4.

For tubes which had not been sleeved during Outage 199 -9R, the examinations included a .510" bobbin coil examination of the full length of the tube. The tubes which had been sleeved during 1991-9R were examined, from the lower sleeve end to the lower roll transition, using the same probe.

All of the unsleeved tubes were also examined in the areas of the 15th tube support plate, the secondary face of the upper tube sheet and the kinetic

transition zone in the upper tube sheet. These examinations were performed using the 8xl-ABS probe.

SLEEVEBASE: This group includes the tubes which were sleeved during outage 1993-10R. The majority of the tubes in this group were from the lane wedge region, described above with approximately 50 tubes per OTSG which are outside the previously defined lane region. The tubes in this group were examined over their full length using the .510" bobbin probe. The data from these examinations was evaluated for detecting degradation and was also examined to profile the tube diameters prior to installing the sleeves.

SLEEVES-0, SLEEVEPOST: The scope of these examinations included the sleeves which had been installed during outage 1991-9R (Sleeves-0) and the sleeves which were installed during outage 1993-10R (Sleevepost). The examinations were performed using the .400" X-Axis combination probe.

The area of interest for the examination include the entire length of the sleeve and the parent tube in the areas of the roll expansions. For the sleeves installed during 1993-10R, the data was also analyzed using the profilometry software to verify the dimensions of the roll expansions.

RESULTS

OTSG-A

In OTSG A, two tubes had an outer diameter initiated indication identified as 20% through wall or greater. In tube A-77-37, the indication was determined to be 32% through wall at the 7th tube support plate. An MRPC examination of this area showed the indication to be a single volumetric indication (SVI). This tube will be monitored as a degraded tube during the next examination. In tube A-72-11, the bobbin coil indication was 26% through wall but the MRPC examination showed the indication was non-relevant. This tube will be monitored as a NRI tube during the next examination.

A total of nine other tubes (A-73-26, A-73-45, A-73-55, A-75-46, A-78-34, A-79-13, A-79-21, A-79-22, A-79-32) had distorted signals (DSI, DTI) or other outer diameter indications screened by the bobbin coil probe. No relevant indications were recorded during the MRPC examinations of these areas and no future monitoring will be required.

The post-sleeve examinations and the examination of the sleeves installed during outage 1991-9R did not identify any degradation. The data from measuring the expansion diameters were turned over to the B&W process engineers. No nonconforming conditions, which required corrective actions, were noted.

OTSG-B

In OTSG B, one tube (B-79-65) had an outer diameter indication recorded as 24% T.W. using the bobbin coil. This indication is located 2.0 inches above the lower tube sheet and was also recorded as a possible loose part (PLP). An MRPC examination of this area did not confirm either the indication or the PLP. This tube will be monitored as a degraded tube during the next examination.

Five tubes (B-66-4, B-74-52, B-74-63, B-77-41, B-87-1) had outer diameter indications recorded as non-quantifiable, (NQI, DSI) while one tube (B-74-10) had an inner diameter indication as non-quantifiable (NQI). These areas were all examined using the MRPC probe and no relevant indications were noted. No future monitoring will be required for these indications.

The post-sleeve examinations and the examinations of the sleeves installed during 1991-9R did not identify any degradation. The data from measuring the expansion diameters were turned over to the B&W process engineers. No nonconforming conditions, which required corrective actions, were noted.

B-3 TUBES WITH PREVIOUS SMALL AMPLITUDE INDICATIONS

Data Set: S/N-SM, S/N, BVC, BVC-9R
Probe: .510" Bobbin
Extent: Full Length

SCOPE

In OTSG "A", 134 tubes were examined.
In OTSG "B", 46 tubes were examined.

REASON FOR EXAMINATION

Starting with the examinations performed during the 1986-5M outage, GPUN has applied an amplitude threshold for evaluating poor signal to noise ratio indications. Using this threshold, GPUN has recorded indications (amplitudes less than 1.0 volt, and signal to noise ratios of <3:1), for future monitoring, without assigning a percent through wall value.

This threshold was originally established based on the qualification work performed during the early 1980's. The basic threshold has not changed since the original implementation, however, the specific applications have been improved during each examination.

For example, during the outages from 1986-5M to 1988-8R, tubes with these small amplitude indications were screened and follow-up examination were performed using the 8x1-ABS probe. If the indications were confirmed by the 8x1-ABS probe, the tube was monitored during the subsequent outage. If the indication was not confirmed, the tube was returned to the general population.

Experience gained during examinations from 1986-5M through 1991-9R has shown that small amplitude indications of this type may not be consistently repeatable. In order to address this repeatability question, GPUN examined all inservice tubes with relevant small amplitude indications which had been recorded using three letter codes such as BVC and S/N were examined in accordance with Figures II-1 and II-2.

SELECTION CRITERIA

All inservice tubes with indications recorded as S/N or BVC which had phase angles of 5-110° are included in this group. This includes both indications which have been confirmed by the 8x1-ABS probe and indications which were not confirmed by the 8x1-ABS probe.

RESULTS

OTSG A

In OTSG A, no indications greater than or equal to 20% through wall were recorded. Small amplitude indications were identified in seven tubes (A-3-14, A-4-30, A-64-127, A-64-128, A-72-130, A-142-43, A-149-15) and were recorded as BVC's. In addition, non-quantifiable indications were detected in eight tubes (A-36-103, A-59-72, A-70-81, A-73-18, A-87-81, A-88-77, A-115-42, A-133-26)

and were recorded as NQI's. These tubes with NQI's were re-examined using the MRPC probe and in all cases, the indications were determined to be nonrelevant. The tubes with the BVC indications will be monitored during the next examination. No additional monitoring is required for the other tubes.

OTSG B

In OTSG B, no indications greater than or equal to 20% through wall were recorded. Small amplitude indications were indicated in nine tubes (B-6-41, B-14-53, B-21-4, B-27-66, B-28-66, B-48-76, B-67-1, B-107-5, B-133-80) and recorded as BVC's. In one tube (B-80-11), a distorted support plate indication was recorded as a DSI. This area was examined using the MRPC probe and the indication was determined to be nonrelevant. The tubes with the BVC indications will continue to be monitored during the next examination. No additional examinations will be scheduled for the other tube.

B-4 EXTRA

Data Set: Extra
Probe: .510" Bobbin, 8x1-ABS
Extent: Full Length, Partial Length

SCOPE

OTSG "B", 2 tubes were examined with .510" Bobbin Probe.
OTSG "B", 1 tube was examined with the 8x1-ABS Probe.

REASON FOR EXAMINATION

During the course of the examinations, eddy current data was acquired on tubes not identified on the ECT data sheets. The tubes were examined as a result of the typographical or interpretive errors on the part of the data acquisition personnel. Once the ECT data is recorded, it is evaluated and the tubes dispositioned accordingly.

SELECTION CRITERIA

These tubes are randomly located.

RESULTS

OTSG B

In OTSG B, no indications were recorded.

B-5 SPECIAL

Data Set: Special
Probe: 8x1-ABS
Extent: 15" T.S.P. to Upper Tube End

SCOPE

OTSG "B", 1 tube was examined.

REASON FOR EXAMINATION

During the course of indoctrinating the Data Analysts, they are instructed to be observant of any abnormal conditions which are not addressed in the data interpretation guidelines. If anything abnormal is noted, appropriate actions will be taken to further understand the condition. These tubes were considered special cases.

SELECTION CRITERIA

During the 1991-9R bobbin coil examinations, a large amplitude indication was noted within the kinetic expansion area of tube B-44-85 in OTSG B. This indication was above the area required to be examined, using the bobbin coil probe, per the analysis guidelines. In order to better understand this indication, the tube was examined using the 8x1-ABS probe.

RESULTS

OTSG B

The indication in this tube was determined to be the result of multiple axial indications above the kinetic transition. These indications appeared as shallow inner diameter indications on 3 coils of the 8x1-ABS probe. An MRPC examination confirmed that they were multiple axial indications. The large amplitude of the bobbin coil signal is attributed to the axial orientation of the indications. No additional actions will be taken for this tube.

C. DISCUSSION OF RESULTS

1. INNER DIAMETER TUBE INDICATIONS

Since 1981, GPUN has characterized the location and distribution of indications in the OTSG's by a bulk comparison of the recorded indications. This characterization includes both newly detected and previously detected indications and is intended to confirm that the population of indications is stable and the condition of the OTSG's has not changed significantly since the previous examination. The data from the 1982 examinations is presented to show the contrast between the examination prior to and after the 1982 repairs. See Figures III-5 to III-8.

The breakdown of the indications shows they are located towards the top of the tube bundle in both OTSG A and OTSG B. In OTSG A, the indication rates are higher towards the periphery of the tube bundle, while in OTSG B, the distribution is more uniform.

A characterization of the size of the indications shows the relative amplitude continues to remain small, with 92 percent of the indications less than 2.0 volts. The indications continue to be part through wall with 330 of the 332 indications, which could be assigned through wall values, recorded as less than 40% percent through wall.

In the past, the circumferential extent of the indications was monitored using the 8x1-ABS probe. During this outage, this function was performed using the MRPC probe. The circumferential extent was recorded with respect to the orientation of the indication. Of the 35 indications recorded with the MRPC probe, 34 were recorded as single volumetric indications (SVI) indicating there was no significant circumferential extent. The remaining indication was recorded as a multiple axial indication in the upper tube sheet and was determined to be above the kinetic expansion transition.

During this outage, 27 tubes (excluding previously degraded tubes) had inner diameter indications screened by the bobbin coil probe. These tubes included three tubes from the 3% - T.S. sample (Section A.2) with the other 24 coming from the elective tube examination population. A comparison of these indications shows they are consistent in both location and size, with the previously identified degradation.

2. OUTER DIAMETER TUBE INDICATIONS

During the bobbin coil examinations, possible outer diameter initiated indications were identified in 34 tubes in OTSG A

and 17 tubes in OTSG B for a total of 51 tubes. This population of tubes included 12 tubes from the degraded tube sample (Section A.1) and 6 tubes from the 3% T.S. sample, with the remaining tubes from the various elective examination populations.

These indications were evaluated in a very conservative manner and the subject locations were then examined using the MRPC probe. This population included 28 indications located at the tube support plates or inside the tube sheets and 23 indications located in the free span portion of the tubes. Of the 51 indications, only three (A-15-41, A-77-37, and B-120-42) were confirmed by the MRPC probe.

In two tubes (A-15-41 and A-77-37), the indications were determined to be "wear" from contact between the tube and the tube support plate, at the 5th and 7th T.S.P. respectively. The wear was determined to be shallow based on the combined results of the bobbin coil and MRPC examinations. In tube A-15-41, the wear was determined to be 20-30% through wall while the indication in A-77-37 was determined to be 32 percent through wall.

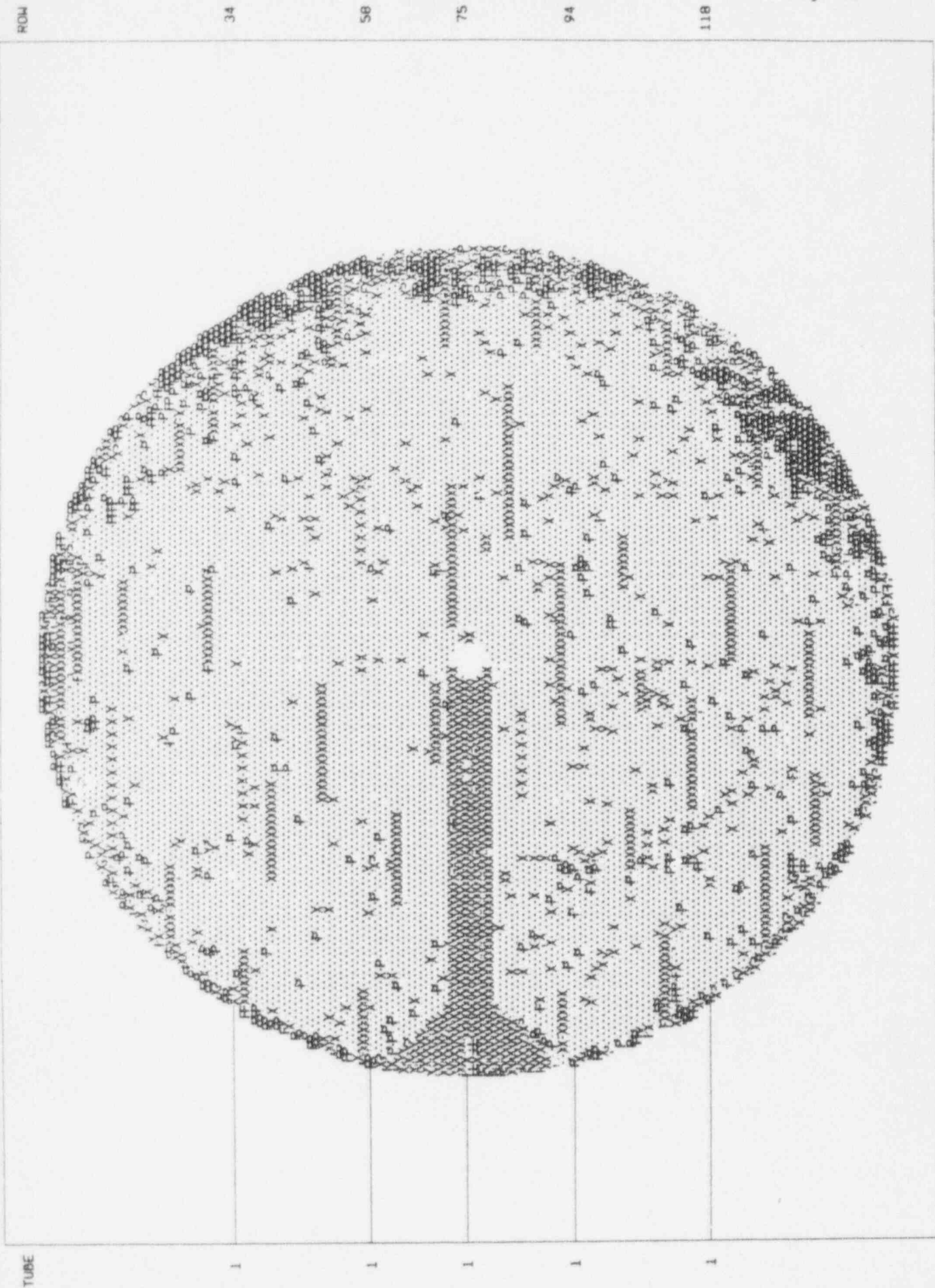
The third confirmed indication (B-120-42) was an isolated indication located between the 4th and 5th tube support plates. This indication was determined to be 35 percent through wall based on the bobbin coil probe. The MRPC examination showed the indication was a single volumetric flaw (SVI).

3. REVIEW OF PREVIOUS DATA

The previous examination data was reviewed for the two tubes that had indications which exceeded 40% through wall (A-74-30, B-8-44). Both of these tubes were previously degraded tubes and had been examined as part of the ISI data set. The review showed no significant change in the shape or amplitude of the ECT signals between outages 1991-9R and 1993-10R. For tube A-74-30, the amplitude of the indications was previously recorded as high as 1.7 volts in 1988-7R and was recorded as 1.4 volts during 1993-10R. The indication in B-8-44 was previously recorded as .9 volts during 1988-7R and was recorded as .8 volts during 1993-10R. This comparison indicates there was no obvious change in the physical condition of tube. The change in percent through wall is attributed to the ECT process.

FIGURE III-1
OTSG A TUBES EXAMINED

Attachment 1
Revision 0
Page 32



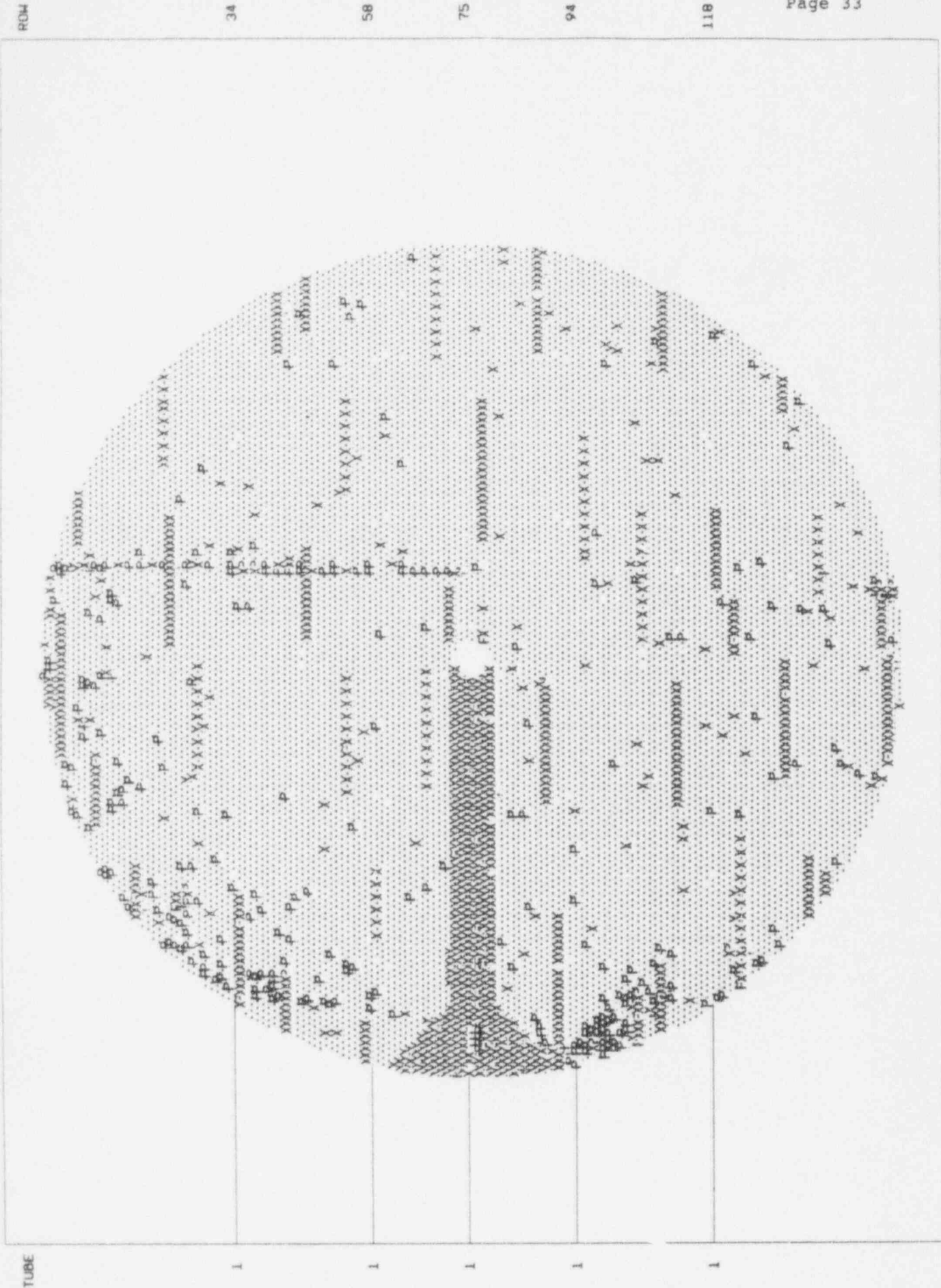
P: 1288: PLUGGED TUBES
X: 1559: TUBES EXAMINED DURING '10R'

GPU NUCLEAR CORP. IMI - UNIT 1
ONCE THROUGH STEAM GENERATOR: A
04/05/94

ACRI ISIS Tubes

FIGURE III-2
OTSG B TUBES EXAMINED

Attachment 1
Revision 0
Page 33



P: 3721 PLUGGED TUBES
X: 1083: TUBES EXAMINED DURING '10R'

GPU NUCLEAR CORP. IMI - UNIT 1
ONCE THROUGH STEAM GENERATOR: B
04/05/94

ACRI ISIS Tubes

TUBE

ROW

1

81

1

88

1

75

1

83

1

91

FIGURE III-3
OTSG A TUBES SLEEVED 10R

Attachment 1
Revision 0
Page 34

9: 125: SLEEVES INSTALLED '9R'
1: 124: SLEEVES INSTALLED '10R'
X: 112: TUBES PLUGGED IN THIS AREA

GPU NUCLEAR CORP. TMI - UNIT 1
ONCE THROUGH STEAM GENERATOR: A
04/05/94

ACRI ISIS Tubes

TUBE

ROW

1

61

1

88

1

75

1

83

1

91

FIGURE III-4
OTSG B TUBES SLEEVED 10R

Attachment 1
Revision 0
Page 35

9: 125: SLEEVES INSTALLED '9R'
1: 128: SLEEVES INSTALLED '10R'
X: 96: TUBES PLUGGED IN THIS AREA

GPU NUCLEAR CORP. TMI - UNIT 1
ONCE THROUGH STEAM GENERATOR: 8
04/05/94

ACRI ISIS Tubes

FIGURE III-5
DISTRIBUTION OF INDICATIONS BY AXIAL LOCATIONS
(INCLUDES PREVIOUSLY IDENTIFIED INDICATIONS)

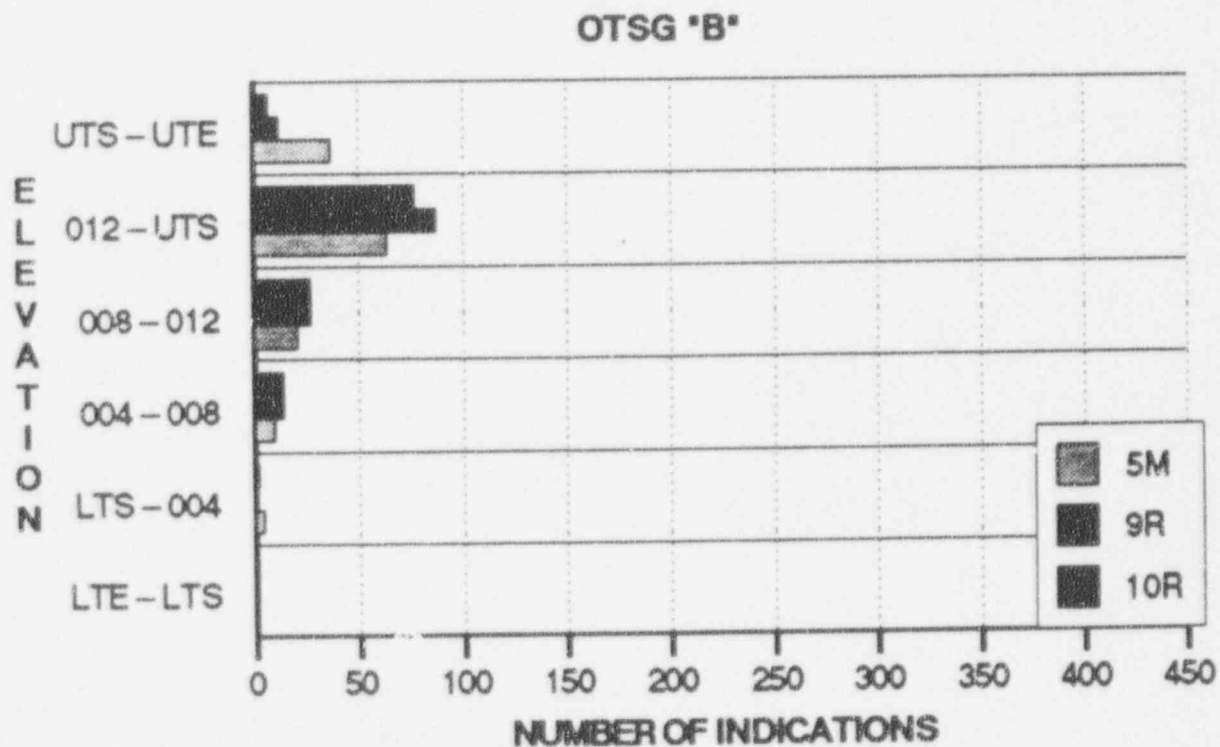
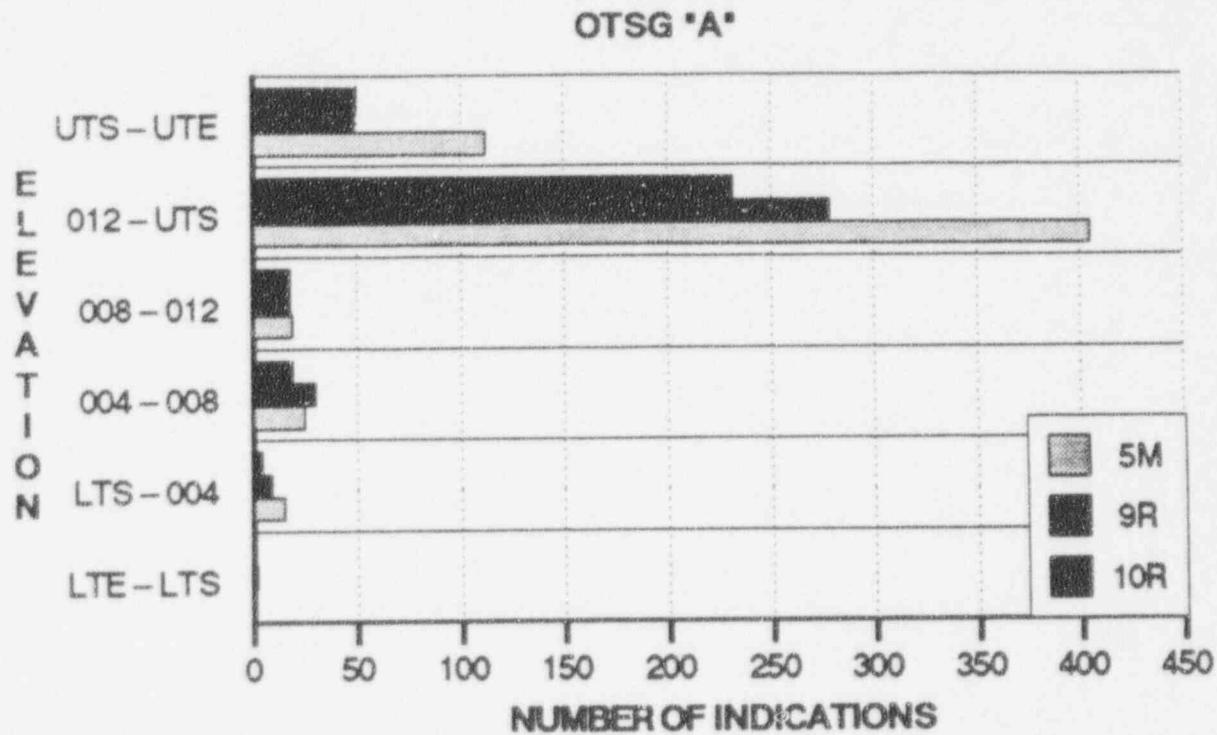


FIGURE III-6
INDICATION RATES BY REGION
TUBES WITH INDICATIONS / TUBES EXAMINED
(INCLUDES PREVIOUSLY IDENTIFIED INDICATIONS)

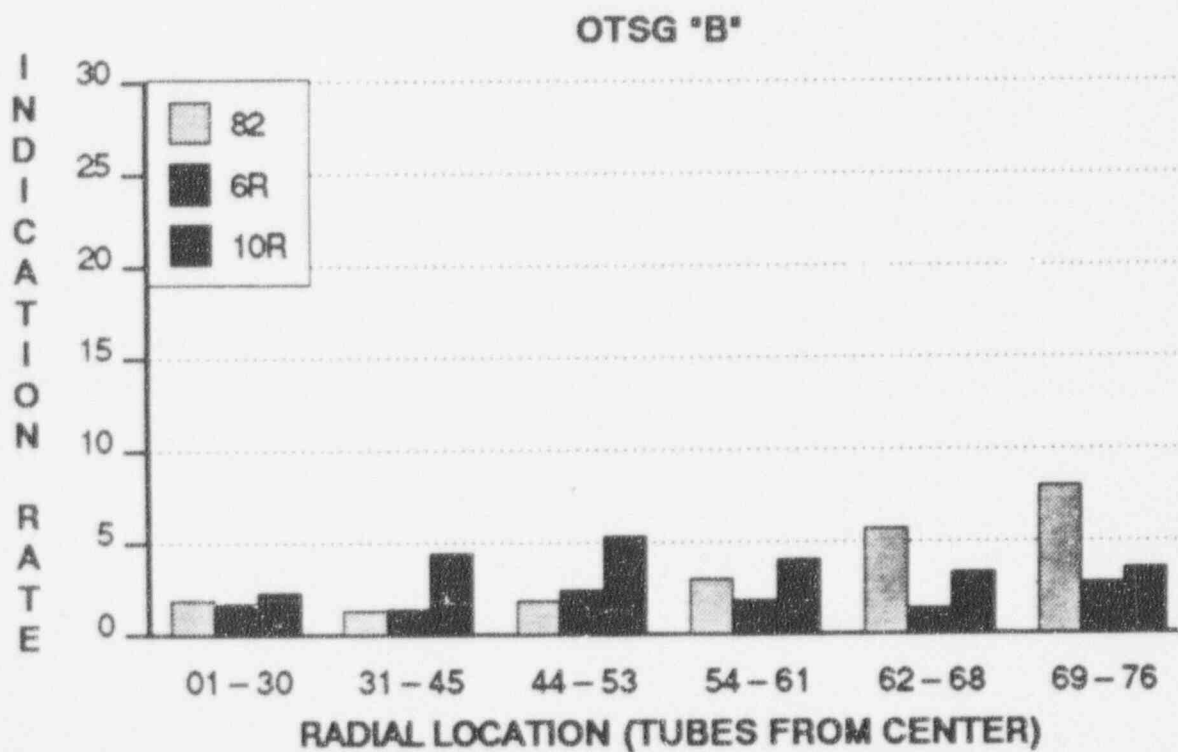
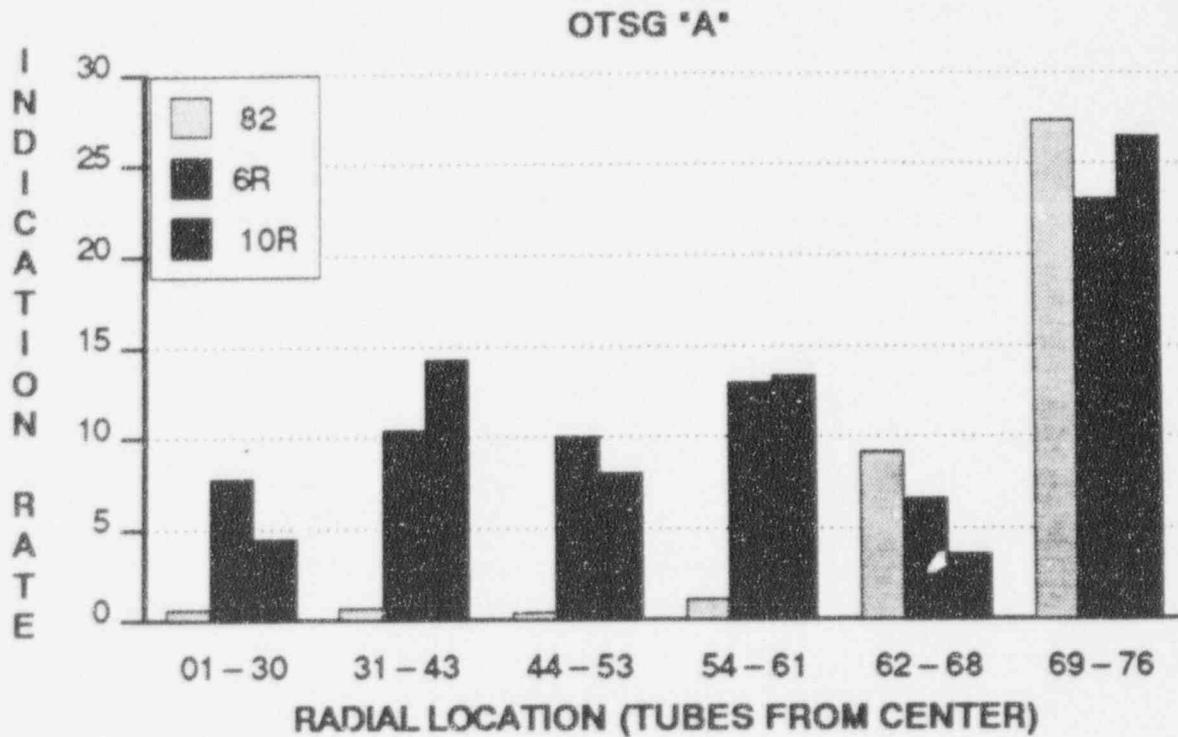


FIGURE III-7
DISTRIBUTION OF INDICATIONS BY PERCENT THROUGH WALL
(INCLUDES PREVIOUSLY IDENTIFIED INDICATIONS)

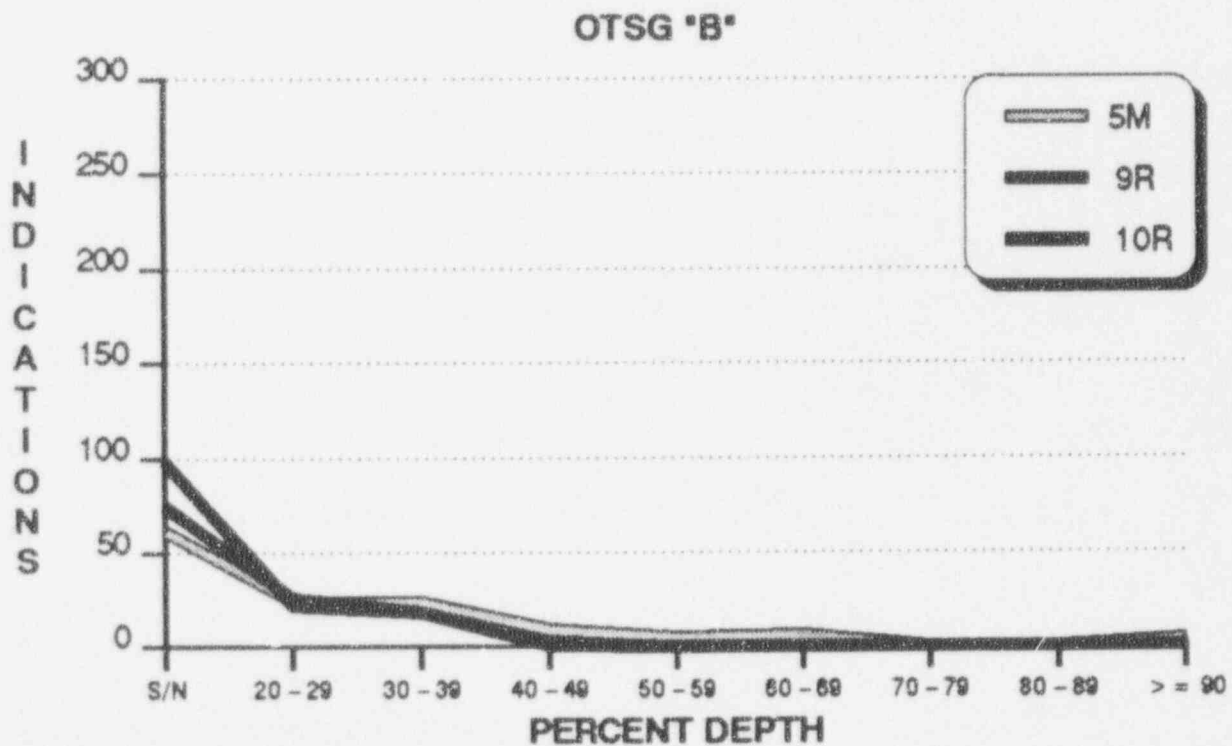
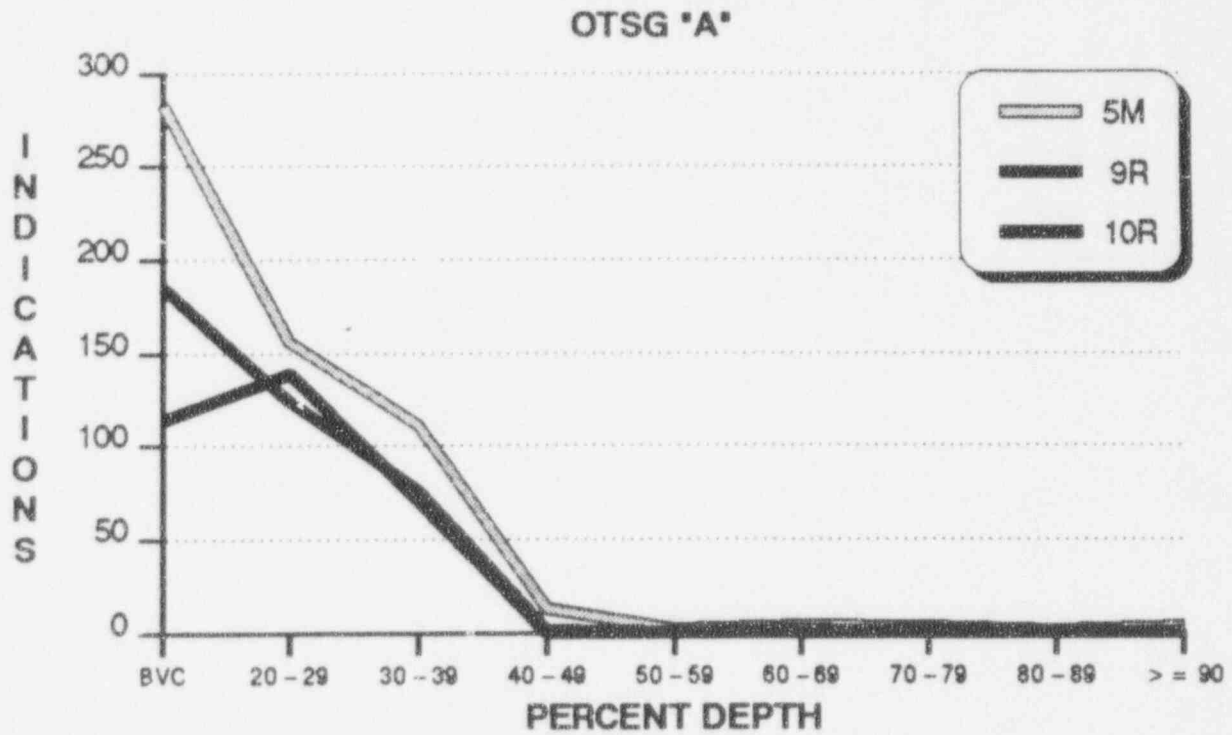
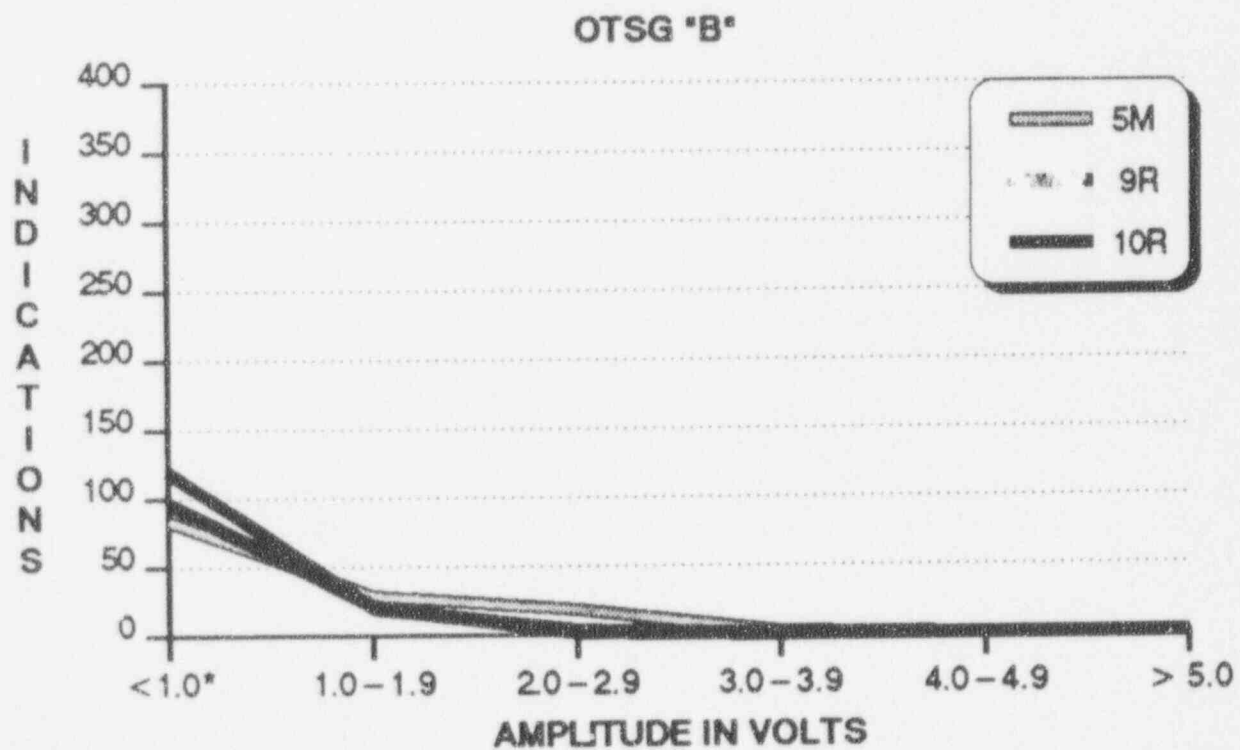
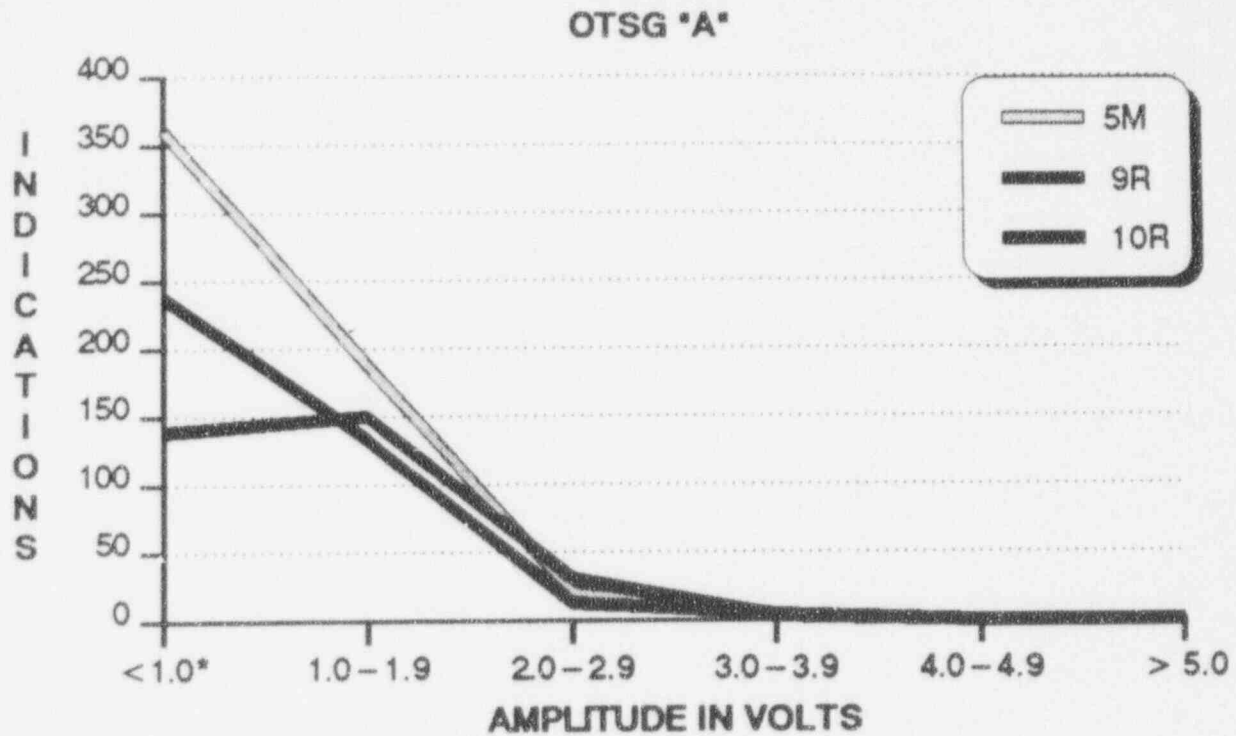


FIGURE III-8
DISTRIBUTION OF INDICATIONS BY AMPLITUDE
(INCLUDES PREVIOUSLY IDENTIFIED INDICATIONS)



IV.

CONCLUSIONS

Based on the results of the 1993, Outage 10R, ECT examinations and data evaluations, GPUN was able to reach the following conclusions:

1. The examinations of the previously "Degraded Tubes" did not indicate a trend of ongoing degradation.
2. The results of the Technical Specification required examinations did not reveal a trend of new or continuing damage mechanisms. The sample requirements of Technical Specification 4.19 were satisfied without sample escalation.
3. Tube to tube support plate wear is occurring in isolated cases. At present, the detected wear appears to be minor in nature, however, continued emphasis should be placed on this mechanism.
4. The examination of the previously installed and newly installed sleeves did not identify any conditions requiring further evaluations.

V.

REFERENCES

1. Appendix A to the TMI-1 Operating License, Amendment 153, Technical Specification 4.19, 05/29/90.
2. GPUN TDR 423, Rev. 1, R. Barley, J. Janiszewski, G. Rhedrick, M. Torborg, "Three Mile Island - Unit 1 OTSG Tubing Eddy Current Program Qualification," 03/15/84.
3. GPUN TDR 642, Rev. 2, M. Torborg, G. Rhedrick "Qualification of Conversion Curve for Inner Diameter Discontinuities," 10/31/85.
4. GPUN TDR 999, Rev.0, M. T. Torborg, "Evaluation of ECT Probes for Use in Examining the TMI-1 OTSGs", 01/09/90.
5. Three Mile Island Nuclear Station Unit No. 1 Surveillance Procedure 1300-4B, Rev. 7, "Eddy Current Examination of OTSG," 09/15/93.
6. GPUN Quality Assurance Department Procedure Manual, 6100-QAP-7209.63, Rev.0, "Analysis of OTSG Eddy Current Data", 09-16-93.
7. PWR Steam Generator Examination Guidelines, Revision 2, August 1988, EPRI.
8. GPUN TDR 1068, Rev.0, M. T. Torborg, "9R OTSG Eddy Current Results", 09/24/92.
9. GPUN TDR 858, Rev.0, B. Bader, "Circumferential Extent of Flaws as a Function of 8x1-.187 inch Coil Coverage", 10/19/87.
10. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components", 1986 Edition.
11. GPUN TDR 1134, Rev.0, M. T. Torborg, "10R OTSG Eddy Current Results", 07/21/94.

DDA ANALYSIS CODES TO BE PUT IN PERCENT COLUMN

Absolute Drift	ADR
Axial Outer Diameter Anomaly	AOD
Circumferential Outer Diameter Anomaly	COD
Retest Bad Data	RBD
Dent	DNT
Dent With Possible Indication	DNI
Ding	DNG
Distorted Roll Transition	DRT
Distorted Roll Transition W/Poss Indication	DRI
Distorted Tubesheet Signal	DTS
Distorted Tubesheet Signal With Indication	DTI
Distorted Tube Support Signal	DSS
Distorted Tube Support Signal W/Indication	DSI
Expansion Transition Location	ETL
Fixture	FIX
ID Chatter	IDC
Retest IDC	RDC
Indication Below Voltage Criteria	BVC
Indication Not Reportable	INR
Indication Not Found	INF
Multiple Circumferential Indication	MCI
Multiple Axial Indication	MAI
Multiple Volumetric Indication	MVI
No Detectable Discontinuity	NDD
Non Quantifiable Indication	NQI
Obstructed	OBS
Permeability Variation	PVN
Retest PVN	RPV
Positive Identification of Tube	PID
Plugged	PLG
Retest Incomplete Exam	RIC
Retest Tube Number Check	RNC
Single Volumetric Indication	SVI
Single Axial Indication	SAI
Single Circumferential Indication	SCI
Sludge	SLG

EXPLANATION OF DDA-4 ANALYSIS CODES

Absolute Drift (ADR) - Normally refers to drift in the crevice of non-expanded tubesheets. Can also be used for tube to be wear in free standing section of tubing. Possible indicator of Inter Granular Attack (IGA). Recorded in low frequency absolute.

Axial Outer Diameter Anomaly (AOD) - An indication observed during the MRPC examinations of plugs which is outer diameter initiated and based on the shape of the signal does not appear to be from degradation.

Circumferential Outer Diameter Anomaly (COD) - See Axial Outer Diameter Anomaly (AOD).

Bad Data (RBD) - Self explanatory

Dent (DNT) - Tube I.D. smaller than nominal I.D., occurring at support plate. Intersections or top of tubesheets. Recorded in differential mix.

Dent With Possible Indication (DNI) - Possible discontinuity indication associated with dent but is not measurable. Recorded from differential mix.

Ding (DNG) - Similar to dent but in free-standing part of tube. Either caused in manufacturing or by mechanical cause. Recorded in prime frequency.

Distorted Roll Transition (DRT) - Self explanatory.

Distorted Roll Transition W/Possible Indication (DRI) - A distorted rolled transition that has sufficient distortion that a discontinuity may be creating the distortion.

Distorted Tubesheet Signal (DTS) - Self explanatory.

Distorted Tubesheet Signal With Indication (DTI) - An indication at the intersection of the upper or lower secondary tubesheets which may be indicative of a possible discontinuity. The signal may be distorted by deposits, dents, or saturated tubesheet signals.

Distorted Tube Support Signal (DSS) - A tube support signal which may be distorted due to deposits or denting.

Distorted Tube Support Signal w/Possible Indication (DSI) - A distorted support plate signal which is also indicative of a possible discontinuity.

Fixture (FIX) - Used when tubes cannot be examined because the fixture foot is obstructing tube or the fixture will not reach a particular tube.

ID Chatter (IDC) - Caused by manufacturing process (pilgering). Characterized by long areas of horizontal motion. Recorded in prime frequency.

EXPLANATION OF DDA-4 ANALYSIS CODES (Continued)

Indication Below Voltage Criteria (BVC) - Low level indications which are below the establish voltage criteria for assigning percent through wall values.

Indication Not Reportable (INR) - Indication that has been previously reported but does not meet current reporting criteria.

Indication Not Found (INF) - Indication that has been previously reported but is not found on current examination.

Multiple Circumferential Indication (MCI) - Self explanatory.

Multiple Axial Indication (MAI) - Self Explanatory.

Multiple Volumetric Indication (MVI) - Self Explanatory.

No Detectable Discontinuity (NDD) - Entry not required if dBASE system used.

Non Quantifiable Indication (NQI) - Condition where a signal forms abnormally and is indicative of degradation which is non-quantifiable.

Obstructed (OBS) - Tube that is obstructed by foreign material, i.e., dirt, chunk of metal, broken off probe head, etc.

Positive Identification (PID) - Code assigned to show the examination was performed to verify the tube identification and the tube is properly identified.

Permeability Variation (PVN) - Self explanatory. Recorded in prime frequency free-standing tube, measured in differential mix at support plate intersections.

Plugged (PLG) - Permanent mechanical plug, not to be confused with obstruction.

Retest Incomplete Exam (RIC) - Tube not run to the extent required or complete tube not recorded.

Retest Tube Number Check (RNC) - Used when the tube identity is in doubt.

Single Volumetric Indication (SVI) - Self explanatory.

Single Axial Indication (SAI) - Self explanatory.

Single Circumferential Indication (SCI) - Self explanatory.

Sludge (SLG) - Accumulation of ferromagnetic material on top of tubesheets or support plates. Recorded in lowest absolute frequency as per specific plant requirements.

THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
1	4	ISI	10R	22548	013+ 6.7	8	27	2.01		
		ISI	09R	17044	013+ 6.6	5	17	1.79	00.22	10.00
		ISI	10R	22548	015+ 36.1	7	23	2.42		
		ISI	09R	17044	015+ 36.4	5	17	2.29	00.13	06.00
1	14	ISI-9R	10R	22833	012+ 25.9	5	17	1.96		
		3%-TS	09R	18995	012+ 25.9	7	23	1.69	00.27	-6.00
2	6	ISI	10R	22549	015+ 24.5	5	17	1.23		
		ISI	09R	17045	015+ 24.6	6	20	1.08	00.15	-3.00
		ISI	10R	22549	015+ 25.1	7	23	1.79		
		ISI	09R	17045	015+ 25.2	7	23	1.13	00.66	00.00
2	25	ISI	10R	22550	012+ 35.5	8	27	1.34		
		ISI	09R	17046	012+ 36.0	7	23	1.18	00.16	04.00
		ISI	10R	22550	013+ 9.2	5	17	1.45		
		ISI	09R	17046	013+ 9.1	5	17	1.47	-00.02	00.00
4	29	ISI	10R	22551	015+ 27.3	9	30	2.17		
		ISI	09R	17047	015+ 27.6	9	30	1.87	00.30	00.00
5	3	ISI	10R	22552	015+ 44.4	6	20	2.09		
		ISI	09R	17048	015+ 44.7	6	20	1.46	00.63	00.00
		ISI	10R	22552	015+ 45.0	8	27	3.83		
		ISI	09R	17048	015+ 45.3	8	27	2.45	01.38	00.00
5	5	ISI	10R	22650	012+ 27.1	92	34	0.81		
		ISI	09R	17146	012+ 26.9	78	47	0.46	00.35	-13.00
		ISI	10R	22650	015+ 34.7	5	17	1.62		
		ISI	09R	17146	015+ 34.7	8	27	1.10	00.52	-10.00
6	43	ISI	10R	22554	UTS+ 3.6	7	23	2.63		
		ISI	09R	17050	UTS+ 3.8	8	27	1.44	01.19	-4.00
		ISI	10R	22554	UTS+ 6.4	9	30	2.06		
		ISI	09R	17050	UTS+ 6.5	6	20	1.49	00.57	10.00
6	47	ISI	10R	22555	015+ 19.9	5	17	1.27		
		ISI	09R	17051	015+ 19.9	8	27	1.04	00.23	-10.00

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THREE MILE ISLAND: UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
6	48	ISI	10R	22556	UTS+ 0.5	5	17	2.84		
		ISI	09R	17052	UTS+ 0.5	8	27	1.93	00.91	-10.00
8	2	ISI	10R	22557	012+ 16.1	7	23	1.79		
		ISI	09R	17053	012+ 16.2	5	17	1.11	00.68	06.00
		ISI	10R	22557	012+ 29.1	7	23	2.17		
		ISI	09R	17053	012+ 29.2	7	23	1.35	00.82	00.00
		ISI	10R	22557	012+ 33.4	7	23	2.55		
		ISI	09R	17053	012+ 33.3	7	23	1.79	00.76	00.00
8	43	ISI	10R	22651	015+ 23.7	5	17	1.62		
		ISI	09R	17147	015+ 24.1	7	23	0.97	00.65	-6.00
		ISI	10R	22651	015+ 24.2	6	20	1.38		
		ISI	09R	17147	015+ 24.5	10	33	0.95	00.43	-13.00
		ISI	10R	22651	015+ 28.4	5	17	1.33		
		ISI	09R	17147	015+ 28.7	7	23	0.87	00.46	-6.00
11	4	ISI	10R	22558	015+ 21.3	10	33	1.48		
		ISI	09R	17054	015+ 21.2	10	30	0.97	00.51	03.00
13	1	ISI	10R	22559	011+ 35.6	8	27	1.74		
		ISI	09R	17055	011+ 35.5	8	27	1.14	00.60	00.00
		ISI	10R	22559	013+ 23.1	10	33	2.16		
		ISI	09R	17055	013+ 23.3	5	17	1.51	00.65	16.00
15	77	ISI	10R	22652	012+ 30.4	8	27	1.25		
		ISI	09R	17148	012+ 30.5	7	23	1.06	00.19	04.00
16	2	ISI	10R	22560	015+ 42.5	6	20	1.52		
		ISI	09R	17056	015+ 42.5	5	17	0.96	00.56	03.00
18	1	ISI	10R	22653	004+ 5.3	10	33	1.29		
		ISI	09R	17149	004+ 5.1	7	23	1.02	00.27	10.00
18	3	ISI	10R	22654	015+ 25.2	9	30	1.12		
		ISI	09R	17150	015+ 25.4	6	20	0.96	00.16	10.00
18	84	ISI	10R	22561	015+ 32.7	6	20	1.28		
		ISI	09R	17057	015+ 32.6	6	20	1.10	00.18	00.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
		ISI	10R	22561	015+ 33.2	8	27	1.50		
		ISI	10R	22561	015+ 34.0	8	27	0.91		
		ISI	09R	17057	015+ 34.4	8	27	1.23	-00.32	00.00
		ISI	10R	22561	015+ 34.6	8	27	1.37		
		ISI	10R	22561	015+ 38.2	7	23	1.63		
		ISI	09R	17057	015+ 38.1	6	20	1.48	00.15	03.00
		ISI	10R	22561	015+ 41.0	11	37	1.17		
		ISI	09R	17057	015+ 40.8	11	37	1.03	00.14	00.00
		ISI	10R	22561	015+ 42.0	8	27	1.54		
		ISI	09R	17057	015+ 41.9	6	20	1.33	00.21	07.00
20	1	ISI	10R	22656	005+ 32.2	7	23	1.68		
		ISI	09R	17152	005+ 31.9	6	20	1.00	00.68	03.00
20	56	ISI	10R	22562	015+ 33.4	5	17	1.20		
		ISI	09R	17058	015+ 33.3	7	23	1.02	00.18	-6.00
20	85	ISI	10R	22563	010+ 14.7	5	17	1.25		
		ISI	09R	17059	010+ 15.1	5	17	0.94	00.31	00.00
		ISI	10R	22563	010+ 17.6	9	30	1.55		
		ISI	09R	17059	010+ 18.0	8	27	1.26	00.29	03.00
		ISI	10R	22563	010+ 18.5	8	27	1.38		
		ISI	09R	17059	010+ 18.9	10	33	1.16	00.22	-6.00
		ISI	10R	22563	010+ 31.7	5	17	1.19		
		ISI	09R	17059	010+ 31.8	5	17	1.09	00.10	00.00
		ISI	10R	22563	014+ 31.5	10	33	0.99		
		ISI	09R	17059	014+ 31.5	8	30	0.84	00.15	03.00
27	78	ISI	10R	22660	015+ 29.9	7	23	1.50		
		ISI	09R	17156	015+ 30.1	7	23	0.93	00.57	00.00
		ISI	10R	22660	015+ 32.8	11	37	1.84		
		ISI	09R	17156	015+ 32.8	11	37	1.21	00.63	00.00
28	78	ISI	10R	22566	015+ 14.5	7	23	2.83		
		ISI	09R	17062	015+ 14.6	6	20	2.59	00.24	03.00
		ISI	10R	22566	015+ 28.2	9	30	1.00		
		ISI	09R	17062	015+ 28.5	10	33	1.01	-00.01	-3.00
29	58	ISI	10R	22661	015+ 29.8	6	20	1.33		
		ISI	09R	17157	015+ 29.9	6	20	0.81	00.52	00.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
30	23	ISI	10R	22567	015+ 13.1	5	17	0.92		
		ISI	09R	17063	015+ 13.2	5	17	0.79	00.13	00.00
31	1	ISI	10R	22662	008+ 6.7	8	27	1.02		
		ISI	09R	17158	008+ 6.5	6	20	1.04	-00.02	07.00
33	102	ISI	10R	22690	015+ 5.7	8	27	1.20		
		ISI	09R	17186	015+ 5.7	6	20	1.07	00.13	07.00
34	1	ISI	10R	22788	006+ 15.6	9	30	1.28		
		ISI	09R	17284	006+ 15.6	6	20	1.00	00.28	10.00
34	3	ISI	10R	22569	UTS+ 2.0	6	20	2.58		
		ISI	09R	17065	UTS+ 2.0	9	30	1.22	01.36	-10.00
37	109	ISI	10R	22664	015+ 39.1	11	37	1.17		
		ISI	09R	17160	015+ 39.0	9	30	1.01	00.16	07.00
38	29	ISI	10R	22665	012+ 3.6	6	20	1.73		
		ISI	09R	17161	012+ 3.8	5	17	1.52	00.21	03.00
39	101	ISI	10R	22571	015+ 34.4	7	23	1.21		
		ISI	09R	17067	015+ 34.7	8	27	0.99	00.22	-4.00
39	110	ISI	10R	22572	015+ 39.8	10	33	1.22		
		ISI	09R	17068	015+ 39.9	9	30	1.00	00.22	03.00
41	94	ISI	10R	22573	015+ 16.0	7	23	1.07		
		ISI	09R	17069	015+ 16.1	5	17	0.99	00.08	06.00
42	114	ISI	10R	22695	015+ 34.7	7	23	1.06		
		ISI	09R	17191	015+ 34.9	7	23	0.83	00.23	00.00
		ISI	10R	22695	015+ 43.3	5	17	0.70		
		ISI	09R	17191	015+ 43.6	6	20	0.57	00.13	-3.00
43	82	ISI	10R	22574	007+ 37.2	8	27	1.59		
		ISI	09R	17070	007+ 37.6	8	27	0.90	00.69	00.00
46	88	ISI	10R	22696	015+ 30.1	5	17	1.78		
		ISI	09R	17192	015+ 30.3	7	23	1.15	00.63	-6.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
48	118	ISI	10R	22576	014+ 29.9	5	17	0.97		
		ISI	09R	17072	014+ 29.6	7	23	0.87	00.10	-6.00
49	73	ISI	10R	22577	UTS+ 5.1	9	30	1.90		
		ISI	09R	17073	UTS+ 5.1	10	33	1.48	00.42	-3.00
51	2	ISI	10R	22666	015+ 20.5	10	33	1.00		
		ISI	09R	17162	015+ 20.6	11	37	0.82	00.18	-4.00
52	34	ISI	10R	22791	013+ 23.0	5	17	1.13		
		ISI	09R	17287	013+ 23.3	5	17	1.02	00.11	00.00
56	93	ISI	10R	22707	015+ 39.0	8	27	0.91		
		ISI	09R	17203	015+ 39.4	11	37	0.80	00.11	-10.00
57	63	ISI	10R	22580	015+ 36.9	9	30	2.31		
		ISI	09R	17076	015+ 36.9	8	27	2.01	00.30	03.00
57	65	ISI	10R	22581	015+ 37.6	11	37	1.03		
		ISI	09R	17077	015+ 37.4	10	33	0.97	00.06	04.00
58	94	ISI	10R	22709	015+ 43.6	7	23	1.05		
		ISI	09R	17205	015+ 44.1	7	23	0.90	00.15	00.00
60	65	ISI	10R	22714	015+ 37.3	8	27	0.99		
		ISI	09R	17210	015+ 37.4	7	23	1.07	-00.08	04.00
63	126	ISI	10R	22792	015+ 22.6	8	27	1.19		
		ISI	09R	17288	015+ 23.0	8	27	1.01	00.18	00.00
64	129	ISI	10R	22583	015+ 45.2	11	37	1.61		
		ISI	09R	17079	015+ 45.2	11	37	1.38	00.23	00.00
65	94	ISI	10R	22584	015+ 35.5	7	23	0.92		
		ISI	09R	17080	015+ 35.9	7	23	0.80	00.12	00.00
66	1	ISI	10R	22585	004+ 27.8	11	37	2.80		
		ISI	09R	17081	004+ 27.7	9	30	2.25	00.55	07.00
66	127	ISI	10R	22586	015+ 44.8	9	30	1.06		
		ISI	09R	17082	015+ 45.2	9	30	1.14	-00.08	00.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason ISI	Exam Out 10R	Exam Numb 22586	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
					015+ 44.8	10	33	1.10		
67	93	ISI	10R	22668	015+ 35.8	5	17	1.03		
		ISI	09R	17164	015+ 36.2	5	17	0.93	00.10	00.00
72	21	ISI	10R	22721	015+ 35.6	5	17	1.61		
		ISI	09R	17217	015+ 35.7	7	23	1.02	00.59	-6.00
74	30	ISI	10R	22589	UTS+ 5.9	18	60	1.37		
		ISI	09R	17085	UTS+ 5.8	10	33	0.98	00.39	27.00
75	123	ISI	10R	22592	015+ 21.1	7	23	1.06		
		ISI	09R	17088	015+ 21.1	8	27	0.72	00.34	-4.00
81	92	ISI	10R	22596	UTS+ 0.8	9	30	1.26		
		ISI	09R	17092	UTS+ 0.8	5	17	0.87	00.39	13.00
82	32	ISI	10R	22597	UTS+ 6.5	11	37	2.29		
		ISI	09R	17093	UTS+ 6.3	10	33	1.80	00.49	04.00
82	128	ISI	10R	22731	015+ 8.0	6	20	1.19		
		ISI	09R	17227	015+ 8.0	5	17	1.18	00.01	03.00
83	17	ISI	10R	22598	015+ 35.6	9	30	1.43		
		ISI	09R	17094	015+ 35.5	10	33	1.30	00.13	-3.00
87	1	ISI	10R	22600	012+ 7.4	5	17	3.81		
		ISI	09R	17096	012+ 7.1	6	20	3.85	-00.04	-3.00
		ISI	10R	22600	012+ 7.8	6	20	3.66		
87	20	ISI	10R	22733	015+ 33.2	7	23	1.03		
		ISI	09R	17229	015+ 33.4	7	23	0.91	00.12	00.00
88	124	ISI	10R	22734	015+ 3.7	6	20	1.08		
		ISI	09R	17230	015+ 3.6	5	17	1.15	-00.07	03.00
90	80	ISI	10R	22674	015+ 31.2	6	20	1.39		
		ISI	09R	17170	015+ 30.9	10	33	1.19	00.20	-13.00
90	128	ISI	10R	22601	015+ 2.2	6	20	1.70		
		ISI	09R	17097	015+ 2.1	9	30	1.27	00.43	-10.00

Continues Next Page =>

THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
93	27	ISI	10R	22675	015+ 38.0	5	17	1.02		
		ISI	09R	17171	015+ 38.2	5	17	1.14	-00.12	00.00
93	90	ISI	10R	22738	UTS+ 0.8	10	33	1.23		
		ISI	09R	17234	UTS+ 0.7	7	23	0.56	00.67	10.00
93	123	ISI	10R	22796	015+ 6.7	7	23	0.91		
		ISI	09R	17292	015+ 7.1	9	30	0.92	-00.01	-7.00
		ISI	10R	22796	015+ 7.1	6	20	1.00		
94	113	ISI	10R	22797	015+ 32.9	5	17	1.37		
		ISI	09R	17293	015+ 33.1	5	17	1.26	00.11	00.00
95	111	ISI	10R	22603	015+ 39.7	5	17	1.47		
		ISI	09R	17099	015+ 39.8	6	20	1.05	00.42	-3.00
95	123	ISI	10R	22604	UTS+ 2.1	5	17	3.63		
		ISI	09R	17100	UTS+ 2.1	6	20	3.73	-00.10	-3.00
95	124	ISI	10R	22798	UTS+ 2.4	9	30	0.91		
		ISI	09R	17294	UTS+ 2.4	8	27	0.99	-00.08	03.00
95	127	ISI	10R	22821	012+ 13.5	8	27	0.74		
		ISI-8R	09R	17346	012+ 13.4	6	20	0.77	-00.03	07.00
96	32	ISI	10R	22605	015+ 37.5	6	20	1.71		
		ISI	09R	17101	015+ 37.7	10	33	1.76	-00.05	-13.00
		ISI	10R	22605	015+ 43.2	11	37	0.95		
		ISI	09R	17101	015+ 43.4	11	37	1.29	-00.34	00.00
		ISI	10R	22605	UTS+ 4.1	11	37	1.40		
		ISI	09R	17101	UTS+ 4.1	5	17	1.47	-00.07	20.00
99	1	ISI	10R	22607	004+ 24.0	5	17	1.53		
		ISI	09R	17103	004+ 24.2	8	27	1.32	00.21	-10.00
		ISI	10R	22607	005+ 12.8	8	27	1.66		
		ISI	09R	17103	005+ 12.6	5	17	1.78	-00.12	10.00
		ISI	10R	22607	008+ 5.1	7	23	1.13		
		ISI	09R	17103	008+ 5.1	5	17	1.00	00.13	06.00
99	17	ISI	10R	22608	015+ 33.1	8	27	1.82		
		ISI	09R	17104	015+ 33.3	6	20	1.82	00.00	07.00

Continues Next Page =>

THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
100	122	ISI	10R	22609	UTS+ 5.2	7	23	1.81		
		ISI	09R	17105	UTS+ 5.1	8	27	1.83	-00.02	-4.00
101	16	ISI	10R	22610	015+ 31.4	6	20	1.34		
		ISI	09R	17106	015+ 31.3	7	23	1.24	00.10	-3.00
101	51	ISI	10R	22611	UTS+ 4.1	11	37	1.49		
		ISI	09R	17107	UTS+ 4.3	11	37	1.18	00.31	00.00
101	61	ISI	10R	22613	015+ 29.0	7	23	2.30		
		ISI	09R	17109	015+ 29.4	7	23	2.07	00.23	00.00
103	121	ISI	10R	22614	014+ 12.3	5	17	1.22		
		ISI	09R	17110	014+ 12.4	10	33	1.14	00.08	-16.00
		ISI	10R	22614	014+ 15.5	6	20	1.07		
		ISI	09R	17110	014+ 15.8	6	20	1.07	00.00	00.00
		ISI	10R	22614	015+ 43.7	7	23	2.30		
		ISI	09R	17110	015+ 43.7	8	27	2.29	00.01	-4.00
		ISI	10R	22614	015+ 44.0	5	17	1.24		
		ISI	09R	17110	015+ 43.7	8	27	2.29	-1.05	-10.00
104	75	ISI	10R	22677	015+ 39.2	6	20	1.35		
		ISI	09R	17173	015+ 39.7	5	17	1.18	00.17	03.00
105	94	ISI	10R	22615	014+ 0.1	95	28	2.33		
		ISI	09R	17111	014+ 0.1	93	25	2.32	00.01	03.00
106	2	ISI	10R	22616	015+ 10.7	7	23	1.08		
		ISI	09R	17112	015+ 10.6	8	27	0.91	00.17	-4.00
107	29	ISI	10R	22619	015+ 37.9	7	23	1.23		
		ISI	09R	17115	015+ 37.7	7	23	1.41	-00.18	00.00
107	116	ISI	10R	22745	015+ 43.4	8	27	0.82		
		ISI	09R	17241	015+ 43.5	7	23	0.88	-00.06	04.00
107	120	ISI	10R	22620	UTS+ 4.9	8	27	1.56		
		ISI	09R	17116	UTS+ 4.9	7	23	1.22	00.34	04.00
110	52	ISI	10R	22622	UTS+ 1.2	13	37	1.38		
		ISI	09R	17118	UTS+ 1.1	6	21	1.13	00.25	16.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
112	116	ISI	10R	22624	012+ 22.3	5	17	1.82		
		ISI	09R	17120	012+ 22.3	9	30	1.64	00.18	-13.00
114	93	ISI	10R	22625	015+ 40.2	8	27	1.60		
		ISI	09R	17121	015+ 40.0	10	33	1.50	00.10	-6.00
114	113	ISI	10R	22679	013+ 29.3	6	20	2.26		
		ISI	09R	17175	013+ 29.5	5	17	2.31	-00.05	03.00
115	26	ISI	10R	22626	015+ 25.8	9	30	1.18		
		ISI	09R	17122	015+ 25.6	11	37	1.43	-00.25	-7.00
115	109	ISI	10R	22627	UTS+ 5.2	5	17	3.14		
		ISI	09R	17123	UTS+ 5.1	6	20	3.04	00.10	-3.00
116	2	ISI	10R	22807	006+ 3.8	8	27	2.25		
		ISI-8R	09R	17332	006+ 3.8	10	33	2.22	00.03	-6.00
116	109	ISI	10R	22628	015+ 36.7	7	23	1.35		
		ISI	09R	17124	015+ 36.9	11	37	1.12	00.23	-14.00
119	77	ISI	10R	22629	015+ 29.3	9	30	1.82		
		ISI	09R	17125	015+ 28.8	9	30	1.72	00.10	00.00
119	107	ISI	10R	22630	015+ 38.7	7	23	1.96		
		ISI	09R	17126	015+ 38.8	7	23	1.92	00.04	00.00
121	104	ISI	10R	22633	015+ 4.3	7	23	1.24		
		ISI	09R	17129	015+ 4.3	8	27	1.22	00.02	-4.00
122	26	ISI	10R	22799	015+ 45.5	6	20	1.31		
		ISI	09R	17296	015+ 45.9	9	30	1.18	00.13	-10.00
122	30	ISI	10R	22634	UTS+ 0.9	7	23	1.21		
		ISI	09R	17130	UTS+ 1.0	5	17	1.24	-00.03	06.00
123	96	ISI	10R	22767	015+ 41.6	6	20	2.24		
		ISI	09R	17263	015+ 41.5	6	20	2.03	00.21	00.00
124	1	ISI	10R	22635	012+ 23.6	7	23	1.74		
		ISI	09R	17131	012+ 23.5	8	27	1.74	00.00	-4.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
124	99	ISI ISI-8R	10R 09R	22811 17336	013+ 8.2 013+ 8.4	7 5	23 17	0.72 0.69	00.03	06.00
125	97	ISI ISI	10R 09R	22801 17298	015+ 40.9 015+ 40.9	6 10	20 33	1.03 1.02	00.01	-13.00
126	94	ISI ISI	10R 09R	22769 17265	015+ 35.9 015+ 36.0	8 11	27 37	2.62 2.28	00.34	-10.00
126	97	ISI ISI	10R 09R	22770 17266	015+ 26.7 015+ 26.4	8 7	27 23	1.23 1.26	-00.03	04.00
127	94	ISI ISI	10R 09R	22771 17267	UTS+ 4.6 UTS+ 4.7	11 10	37 33	0.91 1.13	-00.22	04.00
130	41	ISI ISI	10R 09R	22637 17133	015+ 27.4 015+ 27.7	6 9	20 31	1.78 1.32	00.46	-11.00
131	1	ISI ISI	10R 09R	22803 17300	013+ 25.6 013+ 25.6	8 9	27 30	1.34 1.28	00.06	-3.00
131	82	ISI ISI ISI ISI ISI ISI	10R 09R 10R 09R 10R 09R	22766 17262 22766 17262 22766 17262	015- 0.0 015- 0.1 015+ 37.6 015+ 37.3 015+ 42.6 015+ 42.3	7 10 10 8 8 7	23 33 33 27 27 23	1.07 1.02 1.74 1.80 1.19 1.42	00.05 -00.06 06.00 -00.23	-10.00 06.00 04.00
132	39	ISI ISI-8R	10R 09R	22831 17356	015+ 31.3 015+ 30.9	5 9	17 31	1.33 0.82	00.51	-14.00
134	1	ISI ISI ISI ISI ISI ISI	10R 09R 10R 09R 10R 09R	22639 17135 22639 17135 22639 17135	004+ 1.5 004+ 1.5 004+ 2.4 004+ 2.3 004+ 3.3 004+ 3.5	5 6 8 7 6 6	17 20 27 23 20 20	1.09 1.02 1.27 1.47 1.11 1.14	00.07 -00.20 04.00 -00.03	-3.00 04.00 00.00
135	2	ISI ISI	10R 09R	22640 17136	013+ 33.8 013+ 33.5	5 8	17 27	0.94 0.95	-00.01	-10.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
		ISI	10R	22640	014+ 2.3	6	20	1.03		
		ISI	09R	17136	014+ 2.3	5	17	1.09	-00.06	03.00
		ISI	10R	22640	015+ 12.0	9	30	1.21		
		ISI	09R	17136	015+ 11.5	9	30	1.11	00.10	00.00
		ISI	10R	22640	015+ 16.7	5	17	0.83		
		ISI	09R	17136	015+ 16.3	6	20	0.84	-00.01	-3.00
		ISI	10R	22640	015+ 18.0	7	23	0.85		
		ISI	09R	17136	015+ 17.5	7	23	0.83	00.02	00.00
135	5	ISI	10R	22641	014+ 27.4	5	17	1.50		
		ISI	09R	17137	014+ 27.6	6	20	1.55	-00.05	-3.00
136	6	ISI	10R	22644	015+ 36.8	10	33	1.71		
		ISI	09R	17140	015+ 36.9	11	37	1.65	00.06	-4.00
		ISI	10R	22644	015+ 40.3	5	17	0.79		
		ISI	09R	17140	015+ 40.5	5	17	0.86	-00.07	00.00
136	69	ISI	10R	22773	015+ 33.3	5	17	1.23		
		ISI	09R	17269	015+ 33.0	7	23	1.15	00.08	-6.00
		ISI	10R	22773	015+ 37.5	5	17	2.35		
		ISI	09R	17269	015+ 37.1	8	27	2.36	-00.01	-10.00
138	65	ISI	10R	22774	UTS+ 6.1	10	33	1.69		
		ISI	09R	17270	UTS+ 6.1	10	33	1.85	-00.16	00.00
139	71	ISI	10R	22775	013+ 25.4	8	27	1.98		
		ISI	09R	17271	013+ 25.7	8	27	1.90	00.08	00.00
140	67	ISI	10R	22776	UTS+ 3.5	11	37	1.20		
		ISI	09R	17272	UTS+ 3.6	11	37	1.19	00.01	00.00
143	55	ISI	10R	22787	UTS+ 3.4	10	33	1.29		
		ISI	09R	17283	UTS+ 3.1	9	30	1.30	-00.01	03.00
145	50	ISI	10R	22778	UTS+ 4.5	5	17	4.01		
		ISI	09R	17274	UTS+ 4.4	5	17	4.05	-00.04	00.00
146	1	ISI	10R	22645	004+ 35.4	7	23	1.72		
		ISI	09R	17141	004+ 35.5	8	27	1.88	-00.16	-4.00
146	50	ISI	10R	22780	003+ 35.8	8	27	1.98		
		ISI	09R	17276	003+ 35.8	8	27	1.91	00.07	00.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
147	2	ISI	10R	22646	012+ 10.7	11	37	1.08		
		ISI	09R	17142	012+ 10.5	10	33	1.13	-00.05	04.00
150	8	ISI	10R	22681	015+ 3.7	7	23	1.13		
		ISI	09R	17177	015+ 3.5	8	27	1.08	00.05	-4.00
		ISI	10R	22681	015+ 18.7	6	20	1.00		
		ISI	09R	17177	015+ 18.5	8	27	0.96	00.04	-7.00

Total Tubes Included : 125 Total Indications : 170

Voltage Summary :

Tubes Compared :	125	Number Increased :	121
Indications Compared :	165	Number Decreased :	41
		Number No Change :	3
		Mean Change :	0.19
		Std. Dev. :	0.30

Percent Summary :

Tubes Compared :	125	Number Increased :	56
Indications Compared :	165	Number Decreased :	63
		Number No Change :	46
		Mean Change :	- 0.52
		Std. Dev. :	6.68

THREE MILE ISLAND:UNIT 1
COMPONENT : SG B
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
7	42	ISI	10R	14984	012+ 12.1	7	23	0.87		
		ISI	09R	12984	012+ 12.2	7	23	0.88	-00.01	00.00
		ISI	10R	14984	013+ 11.3	13	37	0.91		
		ISI	09R	12984	013+ 11.4	8	27	0.99	-00.08	10.00
		ISI	10R	14984	014+ 23.2	10	33	0.79		
		ISI	09R	12984	014+ 22.9	8	27	0.81	-00.02	06.00
8	44	ISI	10R	15018	014+ 16.4	14	47	0.73		
		ISI-8R	09R	13019	014+ 16.3	11	37	0.80	-00.07	10.00
		ISI	10R	15018	014+ 29.4	10	33	0.56		
		ISI-8R	09R	13019	014+ 29.3	10	33	0.65	-00.09	00.00
9	22	ISI	10R	14985	015+ 44.8	9	30	1.29		
		ISI	09R	12985	015+ 44.6	8	27	1.19	00.10	03.00
19	44	ISI	10R	14986	015+ 41.5	8	27	1.77		
		ISI	09R	12986	015+ 41.2	8	27	1.72	00.05	00.00
24	11	ISI-9R	10R	15021	005+ 31.0	5	17	2.52		
		GE20-O	09R	13690	005+ 31.1	9	30	2.14	00.38	-13.00
30	13	ISI	10R	14987	015+ 44.9	10	33	2.06		
		ISI	09R	12988	015+ 45.2	9	30	2.17	-00.11	03.00
30	71	ISI	10R	14988	015+ 32.0	7	23	1.71		
		ISI	09R	12989	015+ 32.0	6	20	1.71	00.00	03.00
		ISI	10R	14988	015+ 32.6	9	30	1.22		
		ISI	09R	12989	015+ 32.7	9	30	1.14	00.08	00.00
38	72	ISI	10R	15017	012+ 7.3	11	37	0.80		
		ISI-8R	09R	13018	012+ 7.7	13	43	0.81	-00.01	-6.00
		ISI	10R	15017	012+ 35.7	11	37	0.83		
		ISI-8R	09R	13018	012+ 35.8	9	30	0.85	-00.02	07.00
44	75	ISI	10R	15016	013+ 29.3	7	23	0.96		
		ISI-8R	09R	13017	013+ 29.0	7	23	0.90	00.06	00.00
		ISI	10R	15016	014+ 9.7	10	33	0.86		
		ISI-8R	09R	13017	014+ 9.8	11	37	0.75	00.11	-4.00
50	39	ISI	10R	15012	008+ 34.0	7	23	1.14		
		ISI-8R	09R	13013	008+ 34.0	8	27	1.22	-00.08	-4.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG B
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
60	83	ISI	10R	14989	015+ 39.7	9	30	1.05		
		ISI	09R	12990	015+ 39.3	11	37	1.01	00.04	-7.00
64	83	ISI	10R	14990	015+ 31.4	8	27	1.78		
		ISI	09R	12991	015+ 31.5	10	33	1.23	00.55	-6.00
74	56	ISI	10R	15015	014+ 2.3	8	27	1.51		
		ISI-8R	09R	13016	014+ 2.1	10	33	1.46	00.05	-6.00
79	47	ISI	10R	15009	004+ 25.0	80	36	0.75		
		ISI-8R	09R	13010	004+ 25.0	79	33	0.63	00.12	03.00
103	33	ISI	10R	15014	014+ 0.1	7	23	1.53		
104	77	ISI	10R	14991	UTS+ 4.5	6	20	1.69		
		ISI	09R	12992	UTS+ 4.1	8	27	1.62	00.07	-7.00
105	8	ISI	10R	14992	UTS+ 6.5	6	20	1.32		
		ISI	09R	12993	UTS+ 6.5	3	27	1.22	00.10	-7.00
109	11	ISI	10R	14993	015+ 45.1	10	33	1.13		
		ISI	09R	12994	015+ 44.9	6	20	1.12	00.01	13.00
		ISI	10R	14993	015+ 46.0	7	23	1.01		
		ISI	09R	12994	015+ 46.0	7	23	0.89	00.12	00.00
		ISI	10R	14993	UTS+ 5.4	7	23	1.10		
		ISI	09R	12994	UTS+ 5.3	9	30	1.12	-00.02	-7.00
109	112	ISI	10R	14994	004+ 0.1	8	27	2.14		
		ISI	09R	12995	004+ 0.0	7	23	1.88	00.26	04.00
		ISI	10R	14994	004+ 4.8	6	20	1.22		
		ISI	09R	12995	004+ 4.9	9	30	1.21	00.04	-10.00
124	36	ISI	10R	14996	015+ 45.2	6	20	1.20		
		ISI	09R	12997	015+ 45.3	10	33	1.17	00.03	-13.00
131	27	ISI	10R	15010	011+ 10.2	6	20	0.95		
		ISI-8R	09R	13011	011+ 10.5	8	27	0.90	00.05	-7.00
136	40	ISI	10R	14997	015+ 40.5	6	20	1.46		
		ISI	09R	12998	015+ 40.7	6	20	1.37	00.09	00.00

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG B
OUTAGE : 10R
COMPARISON "ISI TUBE" EXAMINATION RESULTS

Row	Tube	Exam Reason	Exam Out	Exam Numb	Indication Location	Ind Deg	% T.W.	Ind Volt	Delta Volts	Delta Depth
143	43	ISI	10R	14998	010+	7.9	8	27	0.78	
		ISI	09R	12999	010+	8.1	9	30	0.75	00.03 -3.00
		ISI	10R	14998	012+	0.2	10	33	0.86	
		ISI	09R	12999	012+	C.1	11	37	0.90	-00.04 -4.00
146	37	ISI	10R	15000	012+	7.3	11	37	1.00	
		ISI	09R	13001	012+	7.5	9	30	0.98	00.02 07.00
150	25	ISI	10R	15001	007+	25.4	9	30	1.09	
		ISI	09R	13002	007+	25.5	8	27	0.98	00.11 03.00
		ISI	10R	15001	015+	19.5	7	23	0.75	
		ISI	09R	13002	015+	19.9	6	20	0.75	00.00 03.00

Total Tubes Included : 25 Total Indications : 36

Voltage Summary :

Tubes Compared :	24	Number Increased :	22
Indications Compared :	35	Number Decreased :	11
		Number No Change :	2
		Mean Change :	0.05
		Std. Dev. :	0.13

Percent Summary :

Tubes Compared :	24	Number Increased :	13
Indications Compared :	35	Number Decreased :	15
		Number No Change :	7
		Mean Change :	- 0.83
		Std. Dev. :	6.32

THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
TUBES REPAIRED DURING OUTAGE 10R

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Circ	Ind Volt	Per Ext	Exam ID #	Out age
74	30	ISI	540-MIZ18	A011	UTS+	1.2	8	27	1.01	LTE 22589	10R
		ISI	540-MIZ18	A011	UTS+	5.9	18	60	1.37	LTE 22589	10R
74	30	LANE/W	8X1-ABS	A017	+	0.0	0	0	0.00	015 24226	10R
74	30	CONFIR	MRPC	A021	UTS+	5.9	17	SVI	7.77	UTS 22556	10R
74	30	SLEEVE	400-COMBO	A049	+	0.0	0	0	0.00	LSE 22653	10R

Total Examinations : 4

Total Indications : 5

THREE MILE ISLAND:UNIT 1
COMPONENT : SG B
TUBES REPAIRED DURING OUTAGE 10R

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Circ	Ind Volt	Per Ext	Exam ID #	Out age
8	44	ISI	540-MIZ18	B004	011+ 26.5	10	BVC	0.67	LTE	15018	10R
		ISI	540-MIZ18	B004	011+ 34.8	15	BVC	0.65	LTE	15018	10R
		ISI	540-MIZ18	B004	012+ 8.0	15	BVC	0.59	LTE	15018	10R
		ISI	540-MIZ18	B004	012+ 17.6	9	BVC	0.73	LTE	15018	10R
		ISI	540-MIZ18	B004	012+ 27.2	17	BVC	0.54	LTE	15018	10R
		ISI	540-MIZ18	B004	014+ 16.4	14	47	0.73	LTE	15018	10R
		ISI	540-MIZ18	B004	014+ 29.4	10	33	0.56	LTE	15018	10R
		ISI	540-MIZ18	B004	014+ 32.8	12	BVC	0.60	LTE	15018	10R
8	44	CONFIR MRPC		B017	+ 0.0	0	0	0.00	013	17488	10R
		CONFIR MRPC		B017	011+ 26.5	0	NDD	0.00	011	17488	10R
		CONFIR MRPC		B017	011+ 35.1	359	SVI	0.94	011	17488	10R
		CONFIR MRPC		B017	012+ 8.4	24	SVI	0.69	012	17488	10R
		CONFIR MRPC		B017	012+ 17.5	0	NDD	0.00	012	17488	10R
		CONFIR MRPC		B017	012+ 27.1	10	SVI	0.87	012	17488	10R
		CONFIR MRPC		B017	014+ 16.3	28	SVI	0.73	014	17488	10R
		CONFIR MRPC		B017	014+ 29.5	354	SVI	0.83	014	17488	10R
		CONFIR MRPC		B017	014+ 33.0	348	SVI	0.66	014	17488	10R

Total Examinations : 2

Total Indications : 17

THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS ≥ 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
1	4	ISI	540-MIZ18	A010	012 + 6.8	7	23	1.21	LTEUTE
		ISI	540-MIZ18	A010	013 + 6.7	8	27	2.01	LTEUTE
		ISI	540-MIZ18	A010	015 + 36.1	7	23	2.42	LTEUTE
2	6	ISI	540-MIZ18	A010	015 + 25.1	7	23	1.79	LTEUTE
		ISI	540-MIZ18	A010	015 + 28.8	7	23	2.42	LTEUTE
		ISI	540-MIZ18	A010	015 + 40.4	6	20	2.11	LTEUTE
2	25	ISI	540-MIZ18	A010	012 + 35.5	8	27	1.34	LTEUTE
3	17	ISI	540-MIZ18	A010	015 + 32.3	8	27	1.09	LTEUTE
4	29	ISI	540-MIZ18	A010	015 + 27.3	9	30	2.17	LTEUTE
5	3	ISI	540-MIZ18	A010	015 + 44.4	6	20	2.09	LTEUTE
		ISI	540-MIZ18	A010	015 + 45.0	8	27	3.83	LTEUTE
5	5	ISI	540-MIZ18	A010	012 + 27.1	92	34	0.81	LTEUTE
		CONFIR MRPC		A021	012 + 27.8	0	NDD	0.00	012013
6	43	ISI	540-MIZ18	A010	UTS + 3.6	7	23	2.63	LTEUTE
		ISI	540-MIZ18	A010	UTS + 6.4	9	30	2.06	LTEUTE
8	2	ISI	540-MIZ18	A010	012 + 16.1	7	23	1.79	LTEUTE
		ISI	540-MIZ18	A010	012 + 25.1	7	23	2.85	LTEUTE
		ISI	540-MIZ18	A010	012 + 29.1	7	23	2.17	LTEUTE
		ISI	540-MIZ18	A010	012 + 33.4	7	23	2.55	LTEUTE
8	43	ISI	540-MIZ18	A010	015 + 24.2	6	20	1.38	LTEUTE
11	4	ISI	540-MIZ18	A010	015 + 21.3	10	33	1.48	LTEUTE
13	1	ISI	540-MIZ18	A010	011 + 35.6	8	27	1.74	LTEUTE
		ISI	540-MIZ18	A010	013 + 23.1	10	33	2.16	LTEUTE
13	10	CONFIR	540-MIZ18	A040	UTS + 4.1	7	23	1.37	UTELTE
		CONFIR MRPC		A041	UTS + 4.9	347	SVI	1.26	UTSUTS

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
		3%-TS	510-MIZ18	A029	UTS + 4.3	11	37	1.89	UTELTE
		CONFIR	MRPC	A041	UTS + 4.9	347	SVI	1.26	UTSUTS
15	41	CONFIR	MRPC	A041	005 + 0.7	136	21	0.40	005005
		CONFIR	MRPC	A041	005 + 0.7	136	SVI	0.40	005005
15	77	ISI	540-MIZ18	A010	012 + 18.3	9	30	1.09	LTEUTE
		ISI	540-MIZ18	A010	012 + 27.4	7	23	1.05	LTEUTE
		ISI	540-MIZ18	A010	012 + 30.4	8	27	1.25	LTEUTE
16	2	ISI	540-MIZ18	A010	015 + 42.5	6	20	1.52	LTEUTE
17	82	ISI	540-MIZ18	A010	015 + 5.8	8	27	1.07	LTEUTE
18	1	ISI	540-MIZ18	A011	004 + 5.3	10	33	1.29	LTEUTE
18	3	ISI	540-MIZ18	A010	015 + 25.2	9	30	1.12	LTEUTE
18	84	ISI	540-MIZ18	A010	015 + 32.7	6	20	1.28	LTEUTE
		ISI	540-MIZ18	A010	015 + 33.2	8	27	1.50	LTEUTE
		ISI	540-MIZ18	A010	015 + 34.0	8	27	0.91	LTEUTE
		ISI	540-MIZ18	A010	015 + 34.6	8	27	1.37	LTEUTE
		ISI	540-MIZ18	A010	015 + 38.2	7	23	1.63	LTEUTE
		ISI	540-MIZ18	A010	015 + 41.0	11	37	1.17	LTEUTE
		ISI	540-MIZ18	A010	015 + 42.0	8	27	1.54	LTEUTE
19	1	ISI	540-MIZ18	A011	005 + 32.1	10	33	1.00	LTEUTE
20	1	ISI	540-MIZ18	A011	005 + 32.2	7	23	1.68	LTEUTE
20	85	ISI	540-MIZ18	A010	010 + 17.6	9	30	1.55	LTEUTE
		ISI	540-MIZ18	A010	010 + 18.5	8	27	1.38	LTEUTE
		ISI	540-MIZ18	A010	010 + 21.3	7	23	1.25	LTEUTE
		ISI	540-MIZ18	A010	014 + 31.5	10	33	0.99	LTEUTE
22	35	ISI	540-MIZ18	A010	UTS + 4.0	8	27	1.22	LTEUTE
27	78	ISI	540-MIZ18	A009	015 + 29.9	7	23	1.50	LTEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
		ISI	540-MIZ18	A009	015 + 32.8	11	37	1.84	LTEUTE
27	96	ISI	540-MIZ18	A009	015 + 37.5	6	20	1.56	LTEUTE
28	78	ISI	540-MIZ18	A009	015 + 14.5	7	23	2.83	LTEUTE
		ISI	540-MIZ18	A009	015 + 28.2	9	30	1.00	LTEUTE
29	58	ISI	540-MIZ18	A010	015 + 29.8	6	20	1.33	LTEUTE
31	1	ISI	540-MIZ18	A011	008 + 6.7	8	27	1.02	LTEUTE
32	81	CONFIR	540-MIZ18	A040	015 + 35.5	9	30	2.44	UTELTE
		DS7	510-MIZ18	A030	015 + 35.5	10	33	3.33	UTELTE
33	97	ISI	540-MIZ18	A009	015 + 36.7	11	37	1.07	LTEUTE
33	102	ISI	540-MIZ18	A009	015 + 5.7	8	27	1.20	LTEUTE
34	1	ISI	540-MIZ18	A011	006 + 14.6	7	23	1.16	LTEUTE
		ISI	540-MIZ18	A011	006 + 15.6	9	30	1.28	LTEUTE
34	3	ISI	540-MIZ18	A011	UTS + 2.0	6	20	2.58	LTEUTE
35	54	ISI	540-MIZ18	A010	UTS + 4.4	8	27	1.38	LTEUTE
36	106	ISI	540-MIZ18	A009	015 + 34.3	7	23	1.54	LTEUTE
37	109	ISI	540-MIZ18	A009	015 + 39.1	11	37	1.17	LTSUTE
38	29	ISI	540-MIZ18	A011	012 + 3.6	6	20	1.73	LTEUTE
39	101	ISI	540-MIZ18	A009	015 + 34.4	7	23	1.21	LTEUTE
39	110	ISI	540-MIZ18	A009	015 + 39.8	10	33	1.22	LTEUTE
40	98	GE20-O	510-MIZ18	A030	015 + 25.9	7	23	2.14	UTELTE
		CONFIR	MRPC	A041	015 + 25.6	169	SVI	1.76	UTS015
41	16	ISI	540-MIZ18	A011	014 + 3.1	94	33	0.74	LTEUTE
		CONFIR	MRPC	A021	014 + 3.1	0	NDD	0.00	014014

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
41	94	ISI	540-MIZ18	A009	015 + 16.0	7	23	1.07	LTEUTE
42	114	ISI	540-MIZ18	A009	015 + 34.7	7	23	1.06	LTEUTE
43	82	ISI	540-MIZ18	A009	007 + 37.2	8	27	1.59	LTEUTE
43	107	GE20-O CONFIR	510-MIZ18 MRPC	A030 A041	015 + 37.3 015 + 37.3	10 0	33 NDD	0.93 0.00	UTELTE UTS015
49	73	ISI	540-MIZ18	A009	UTS + 5.1	9	30	1.90	LTEUTE
50	2	ISI	540-MIZ18	A011	015 + 29.3	6	20	1.43	LTEUTE
50	102	ISI	540-MIZ18	A009	015 + 16.1	7	23	1.63	LTEUTE
51	2	ISI	540-MIZ18	A011	015 + 20.5	10	33	1.00	LTEUTE
52	34	ISI	540-MIZ18	A011	014 + 31.6	9	30	1.02	LTEUTE
53	123	ISI	540-MIZ18	A010	015 + 28.5	6	20	0.78	LTEUTE
56	93	ISI	540-MIZ18	A009	015 + 39.0	8	27	0.91	LTEUTE
57	63	ISI	540-MIZ18	A024	015 + 36.9	9	30	2.31	UTELTE
57	65	ISI	540-MIZ18	A024	015 + 37.6	11	37	1.03	UTELTE
58	94	ISI	540-MIZ18	A009	015 + 43.6	7	23	1.05	LTEUTE
60	65	ISI	540-MIZ18	A024	015 + 37.3	8	27	0.99	UTELTE
60	126	ISI	540-MIZ18	A010	014 + 26.3	7	23	1.03	LTEUTE
		ISI	540-MIZ18	A010	014 + 27.8	9	30	0.72	LTEUTE
63	126	ISI	540-MIZ18	A010	015 + 22.6	8	27	1.19	LTEUTE
64	66	ISI	540-MIZ18	A011	015 + 39.2	6	20	1.27	LTEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
64	129	ISI	540-MIZ18	A010	015 + 45.2	11	37	1.61	LTEUTE
65	94	ISI	540-MIZ18	A009	015 + 35.5	7	23	0.92	LTEUTE
66	1	SLEEVE	510-MIZ18	A005	004 + 27.2	11	37	2.40	LTEUTE
		CONFIR	MRPC	A021	004 + 27.6	24	SVI	2.57	004005
		ISI	540-MIZ18	A011	004 + 27.8	11	37	2.80	LTEUTE
		CONFIR	MRPC	A021	004 + 27.6	24	SVI	2.57	004005
66	127	ISI	540-MIZ18	A010	015 + 43.5	10	33	1.28	LTSUTE
		ISI	540-MIZ18	A023	015 + 44.8	10	33	1.10	LTEUTE
		ISI	510-MIZ18	A025	015 + 44.8	9	30	1.06	UTELTE
72	11	SLEEVE	510-MIZ18	A005	009 - 0.4	100	26	0.60	LTEUTE
		CONFIR	MRPC	A021	009 - 0.4	0	NDD	0.00	009009
72	86	ISI	540-MIZ18	A009	UTS + 3.8	10	33	1.35	LTEUTE
74	28	SLEEVE	510-MIZ18	A006	UTS + 6.1	9	30	1.94	LTEUTE
74	30	ISI	540-MIZ18	A011	UTS + 1.2	8	27	1.01	LTEUTE
		ISI	540-MIZ18	A011	UTS + 5.9	18	60	1.37	LTEUTE
		CONFIR	MRPC	A021	UTS + 5.9	17	SVI	7.77	UTSUTE
75	81	ISI	540-MIZ18	A009	015 + 35.4	9	30	1.41	LTEUTE
75	122	ISI	540-MIZ18	A010	015 + 43.9	7	23	1.68	LTEUTE
75	123	ISI	540-MIZ18	A010	015 + 21.1	7	23	1.06	LTEUTE
		ISI	540-MIZ18	A010	015 + 23.5	9	30	2.05	LTEUTE
77	37	LANE/W	510-MIZ18	A026	007 - 0.8	80	32	1.82	UTELTE
		CONFIR	MRPC	A041	007 - 0.7	146	SVI	0.25	008007
79	130	ISI	540-MIZ18	A014	UTS + 5.4	9	30	1.05	LTEUTE
81	92	ISI	540-MIZ18	A012	015 + 40.1	7	23	1.46	LTEUTE
		CONFIR	MRPC	A041	015 + 40.1	0	NDD	0.00	UTS015

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
		ISI	540-MIZ18	A012	UTS + 0.8	9	30	1.26	LTEUTE
81	130	ISI	540-MIZ18	A014	012 + 14.4	6	20	1.01	LTEUTE
82	32	ISI	540-MIZ18	A012	UTS + 6.5	11	37	2.29	LTEUTE
82	128	ISI	540-MIZ18	A014	015 + 8.0	6	20	1.19	LTEUTE
83	17	ISI	540-MIZ18	A012	015 + 35.6	9	30	1.43	LTEUTE
83	29	ISI	540-MIZ18	A012	015 + 33.8	6	20	0.78	LTEUTE
84	103	ISI	540-MIZ18	A012	015 + 31.2	7	23	1.03	LTEUTE
		CONFIR	MRPC	A041	015 + 31.3	0	NDD	0.00	UTS015
87	1	SLEEVE	510-MIZ18	A006	012 + 7.0	7	23	3.63	LTEUTE
		CONFIR	MRPC	A021	012 + 7.8	2	SVI	8.23	012013
		ISI	540-MIZ18	A012	012 + 7.8	6	20	3.66	LTSUTE
		CONFIR	MRPC	A021	012 + 7.8	2	SVI	8.23	012013
87	20	ISI	540-MIZ18	A012	015 + 33.2	7	23	1.03	LTEUTE
88	124	ISI	540-MIZ18	A014	015 + 3.7	6	20	1.08	LTEUTE
90	80	ISI	540-MIZ18	A012	015 + 31.2	6	20	1.39	LTEUTE
90	128	ISI	540-MIZ18	A014	015 + 2.2	6	20	1.70	LTSUTE
93	58	ISI	540-MIZ18	A012	UTS + 4.6	10	33	1.19	LTEUTE
93	90	ISI	540-MIZ18	A013	UTS + 0.8	10	33	1.23	LTEUTE
93	123	ISI	540-MIZ18	A014	015 + 6.7	7	23	0.91	LTEUTE
		ISI	540-MIZ18	A014	015 + 7.1	6	20	1.00	LTEUTE
95	124	ISI	540-MIZ18	A014	UTS + 2.4	9	30	0.91	LTEUTE
95	127	ISI	540-MIZ18	A014	012 + 13.5	8	27	0.74	LTEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
		ISI	540-MIZ18	A014	012 + 25.0	6	20	0.85	LTEUTE
		CONFIR	MRPC	A041	012 + 24.9	357	SVI	1.58	013012
		ISI	540-MIZ18	A014	015 + 13.6	11	37	1.04	LTEUTE
96	32	ISI	540-MIZ18	A012	015 + 37.5	6	20	1.71	LTEU7
		ISI	540-MIZ18	A012	015 + 43.2	11	37	0.95	LTEU12
		ISI	540-MIZ18	A012	UTS + 4.1	11	37	1.40	LTEUTE
99	1	ISI	540-MIZ18	A023	005 + 12.8	8	27	1.66	LTEUTE
		CONFIR	MRPC	A047	005 + 12.8	0	NDD	0.00	006005
		ISI	540-MIZ18	A012	008 + 5.1	7	23	1.13	LTSUTE
99	17	ISI	540-MIZ18	A012	015 + 33.1	8	27	1.82	LTEUTE
100	34	ISI	540-MIZ18	A012	UTS + 6.0	8	27	1.05	LTEUTE
100	90	ISI	540-MIZ18	A013	UTS + 3.0	6	20	1.31	LTEUTE
		CONFIR	MRPC	A041	UTS + 2.9	350	SVI	2.21	UTSUTS
100	122	ISI	540-MIZ18	A014	UTS + 5.2	7	23	1.81	LTEUTE
101	16	ISI	540-MIZ18	A012	015 + 31.4	6	20	1.34	LTEUTE
101	51	ISI	540-MIZ18	A012	UTS + 1.5	10	33	1.33	LTEUTE
		ISI	540-MIZ18	A012	UTS + 4.1	11	37	1.49	LTEUTE
		ISI	540-MIZ18	A012	UTS + 4.9	6	20	1.31	LTEUTE
		ISI	540-MIZ18	A012	UTS + 6.0	8	27	0.90	LTEUTE
101	61	ISI	540-MIZ18	A012	015 + 29.0	7	23	2.30	LTEUTE
103	77	CONFIR	540-MIZ18	A050	015 + 24.6	10	33	1.81	UTELTE
		CONFIR	MRPC	A047	015 + 24.4	358	SVI	1.82	UTS015
		3%-TS	510-MIZ18	A039	015 + 24.8	7	23	2.28	UTELTE
		CONFIR	MRPC	A047	015 + 24.4	358	SVI	1.82	UTS015
103	121	ISI	540-MIZ18	A014	014 + 15.5	6	20	1.07	LTEUTE
		ISI	540-MIZ18	A014	015 + 43.7	7	23	2.30	LTEUTE
104	75	ISI	540-MIZ18	A013	015 + 39.2	6	20	1.35	LTEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason ISI	Exam Tech 540-MIZ18	Exam Reel A013	Indication Location 015 + 40.4	Ind Deg 8	% / Coils 27	Ind Volt 0.69	Extent Tested LTEUTE
105	94	ISI CONFIR	540-MIZ18 MRPC	A013 A021	014 + 0.1 014 + 0.0	95 0	28 NDD	2.33 0.00	LTEUTE 014014
106	2	ISI	540-MIZ18	A012	015 + 10.7	7	23	1.08	LTEUTE
107	2	ISI	540-MIZ18	A012	015 + 34.1	6	20	1.55	LTEUTE
107	29	ISI	540-MIZ18	A012	015 + 37.9	7	23	1.23	LTEUTE
107	116	ISI	540-MIZ18	A014	015 + 43.4	8	27	0.82	LTEUTE
107	120	ISI	540-MIZ18	A014	UTS + 4.9	8	27	1.56	LTSUTE
109	108	ISI ISI	540-MIZ18 540-MIZ18	A014 A014	UTS + 3.8 UTS + 3.8	6 6	20 20	2.56 2.56	LTEUTE LTEUTE
110	2	ISI	540-MIZ18	A012	UTS + 2.5	11	37	1.08	LTEUTE
110	52	ISI ISI ISI	540-MIZ18 540-MIZ18 540-MIZ18	A012 A012 A012	015 + 39.3 UTS + 1.2 UTS + 2.8	6 13 14	20 37 33	1.29 1.38 1.32	LTEUTE LTEUTE LTEUTE
111	33	ISI	540-MIZ18	A012	UTS + 4.7	9	30	1.46	LTEUTE
111	51	ISI	540-MIZ18	A012	015 + 38.6	7	23	1.68	LTEUTE
114	93	ISI	540-MIZ18	A013	015 + 40.2	8	27	1.60	LTEUTE
114	113	ISI	540-MIZ18	A014	013 + 29.3	6	20	2.26	LTEUTE
115	26	ISI	540-MIZ18	A012	015 + 25.8	9	30	1.18	LTEUTE
116	2	ISI	540-MIZ18	A015	006 + 3.8	8	27	2.25	LTEUTE
116	109	ISI	540-MIZ18	A014	015 + 36.7	7	23	1.35	LTEUTE
118	67	ISI CONFIR	540-MIZ18 MRPC	A012 A041	015 + 36.8 015 + 36.8	8 0	27 NDD	1.41 0.00	LTEUTE UTS015

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 INDICATIONS \geq 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
119	77	ISI	540-MIZ18	A013	015 + 29.3	9	30	1.82	LTEUTE
		ISI	540-MIZ18	A013	015 + 35.6	10	33	0.93	LTEUTE
119	107	ISI	540-MIZ18	A014	015 + 38.7	7	23	1.96	LTEUTE
120	67	ISI	540-MIZ18	A012	015 + 35.0	9	30	1.30	LTEUTE
		CONFIR MRPC		A041	015 + 35.6	2	SVI	2.73	UTS015
121	104	ISI	540-MIZ18	A014	015 + 4.3	7	23	1.24	LTEUTE
122	26	ISI	540-MIZ18	A012	015 + 45.5	6	20	1.31	LTEUTE
122	30	ISI	540-MIZ18	A012	UTS + 0.9	7	23	1.21	LTEUTE
123	85	ISI	540-MIZ18	A014	015 + 44.6	7	23	1.19	LTEUTE
123	96	ISI	540-MIZ18	A014	015 + 41.6	6	20	2.24	LTEUTE
		ISI	540-MIZ18	A014	015 + 44.7	7	23	1.97	LTEUTE
124	1	ISI	540-MIZ18	A015	012 + 23.6	7	23	1.74	LTEUTE
124	99	ISI	540-MIZ18	A014	013 + 8.2	7	23	0.72	LTEUTE
125	82	ISI	540-MIZ18	A014	015 + 31.5	8	27	1.02	LTEUTE
125	97	ISI	540-MIZ18	A014	015 + 40.9	6	20	1.03	LTEUTE
126	34	ISI	540-MIZ18	A012	015 + 36.5	6	20	1.02	LTEUTE
126	94	ISI	540-MIZ18	A014	015 + 35.9	8	27	2.62	LTEUTE
126	97	ISI	540-MIZ18	A014	015 + 26.7	8	27	1.23	LTEUTE
127	94	ISI	540-MIZ18	A014	UTS + 4.6	11	37	0.91	LTEUTE
130	41	ISI	540-MIZ18	A012	015 + 27.4	6	20	1.78	LTEUTE
130	73	ISI	540-MIZ18	A014	015 + 42.0	7	23	0.83	LTEUTE

Continues Next Page =>

THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
INDICATIONS >= 20 % T.W.
INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
131	1	ISI	540-MIZ18	A015	013 + 25.6	8	27	1.34	LTEUTE
131	82	ISI	540-MIZ18	A014	015 - 0.0	7	23	1.07	LTSUTE
		ISI	540-MIZ18	A014	015 + 37.6	10	33	1.74	LTSUTE
		ISI	540-MIZ18	A014	015 + 42.6	8	27	1.19	LTSUTE
134	1	ISI	540-MIZ18	A015	004 + 2.4	8	27	1.27	LTEUTE
		ISI	540-MIZ18	A015	004 + 3.3	6	20	1.11	LTEUTE
135	2	ISI	540-MIZ18	A015	014 + 2.3	6	20	1.03	LTEUTE
		ISI	540-MIZ18	A015	015 + 12.0	9	30	1.21	LTEUTE
		ISI	540-MIZ18	A015	015 + 18.0	7	23	0.85	LTEUTE
		ISI	540-MIZ18	A015	015 + 36.5	6	20	1.32	LTEUTE
136	5	ISI	540-MIZ18	A015	001 + 2.8	97	23	0.43	LTEUTE
		CONFIR MRPC		A021	001 + 2.8	0	NDD	0.00	001001
		ISI	540-MIZ18	A015	015 + 39.9	7	23	1.52	LTEUTE
136	6	ISI	540-MIZ18	A015	015 + 36.8	10	33	1.71	LTEUTE
138	65	ISI	540-MIZ18	A014	UTS + 6.1	10	33	1.69	LTEUTE
139	67	ISI	540-MIZ18	A014	015 + 44.2	11	37	1.56	LTSUTE
		CONFIR MRPC		A047	015 + 45.0	7	SVI	1.83	UTS015
139	71	ISI	540-MIZ18	A014	013 + 25.4	8	27	1.98	LTEUTE
140	67	ISI	540-MIZ18	A014	UTS + 3.5	11	37	1.20	LTSUTE
143	55	ISI	540-MIZ18	A014	UTS + 3.4	10	33	1.29	LTEUTE
143	57	ISI	540-MIZ18	A014	015 + 42.4	8	27	1.23	LTEUTE
146	1	ISI	540-MIZ18	A014	004 + 35.4	7	23	1.72	LTEUTE
146	50	ISI	540-MIZ18	A014	003 + 35.8	8	27	1.98	LTEUTE
147	2	ISI	540-MIZ18	A014	012 + 10.7	11	37	1.08	LTEUTE

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG A
OUTAGE : 10R
INDICATIONS \geq 20 % T.W.
INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
150	8	ISI	540-MIZ18	A014	015 + 3.7	7	23	1.13	LTEUTE
		ISI	540-MIZ18	A014	015 + 18.7	6	20	1.00	LTEUTE

Total Tubes Included : 153

Total Indications : 212

THREE MILE ISLAND:UNIT 1
 COMPONENT : SG B
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
1	11	ISI	540-MIZ18	B004	UTS + 3.0	7	23	1.22	LTEUTE
7	42	ISI	540-MIZ18	B004	012 + 12.1	7	23	0.87	LTEUTE
		ISI	540-MIZ18	B004	013 + 11.3	13	37	0.91	LTEUTE
		ISI	540-MIZ18	B004	014 + 23.2	10	33	0.79	LTEUTE
8	44	ISI	540-MIZ18	B004	014 + 16.4	14	47	0.73	LTEUTE
		CONFIR MRPC		B017	014 + 16.3	28	SVI	0.73	014015
		ISI	540-MIZ18	B004	014 + 29.4	10	33	0.56	LTEUTE
		CONFIR MRPC		B017	014 + 29.5	354	SVI	0.83	014015
9	22	ISI	540-MIZ18	B004	015 + 44.8	9	30	1.29	LTEUTE
19	44	ISI	540-MIZ18	B004	015 + 41.5	8	27	1.77	LTEUTE
26	31	DS7	510-MIZ18	B019	007 + 17.1	84	27	0.65	UTELTE
		CONFIR MRPC		B036	007 + 17.1	0	NDD	0.00	008007
28	42	3%-TS	510-MIZ18	B019	LTS + 1.2	87	22	0.63	UTELTE
		CONFIR MRPC		B037	LTS + 1.2	0	NDD	0.00	LTS LTS
30	13	ISI	540-MIZ18	B004	015 + 44.9	10	33	2.06	LTEUTE
30	71	ISI	540-MIZ18	B005	015 + 32.0	7	23	1.71	LTEUTE
		ISI	540-MIZ18	B005	015 + 32.6	9	30	1.22	LTEUTE
38	72	ISI	540-MIZ18	B005	012 + 7.3	11	37	0.80	LTEUTE
		ISI	540-MIZ18	B005	012 + 35.7	11	37	0.83	LTEUTE
44	75	ISI	540-MIZ18	B005	013 + 29.3	7	23	0.96	LTEUTE
		ISI	540-MIZ18	B005	014 + 9.7	10	33	0.86	LTEUTE
		ISI	540-MIZ18	B005	014 + 21.1	9	30	0.69	LTEUTE
50	39	ISI	540-MIZ18	B005	008 + 34.0	7	23	1.14	LTEUTE
		CONFIR MRPC		B017	008 + 34.3	0	NDD	0.00	008009
60	83	ISI	540-MIZ18	B005	015 + 39.7	9	30	1.05	LTEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG B
 OUTAGE : 10R
 INDICATIONS >= 20 % T.W.
 INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
61	98	DS7 CONFIR	510-MIZ18 MRPC	B022 B036	008 + 30.6 008 + 30.6	86 0	24 NDD	0.36 0.00	UTELTE 009008
64	83	ISI	540-MIZ18	B003	015 + 31.4	8	27	1.78	LTEUTE
74	56	ISI CONFIR	540-MIZ18 MRPC	B003 B037	014 + 2.3 014 + 2.3	8 0	27 NDD	1.51 0.00	LTEUTE 015014
79	47	ISI CONFIR	540-MIZ18 MRPC	B003 B018	004 + 25.0 004 + 24.9	80 0	36 NDD	0.75 0.00	LTEUTE 004005
79	65	LANE/W CONFIR	510-MIZ18 MRPC	B002 B018	LTS + 2.0 LTS + 2.0	87 0	24 NDD	1.05 0.00	LTEUTE LTS LTS
103	33	ISI CONFIR	540-MIZ18 MRPC	B003 B017	014 + 0.1 014 + 0.0	7 0	23 NDD	1.53 0.00	LTEUTE 014014
104	77	ISI	540-MIZ18	B004	UTS + 4.5	6	20	1.69	LTEUTE
105	8	ISI	540-MIZ18	B004	UTS + 6.5	6	20	1.32	LTEUTE
109	11	ISI ISI ISI	540-MIZ18 540-MIZ18 540-MIZ18	B004 B004 B004	015 + 45.1 015 + 46.0 UTS + 5.4	10 7 7	33 23 23	1.13 1.01 1.10	LTEUTE LTEUTE LTEUTE
109	112	ISI CONFIR ISI CONFIR	540-MIZ18 MRPC 540-MIZ18 MRPC	B005 B036 B005 B036	004 + 0.1 004 + 0.1 004 + 4.8 004 + 4.8	8 0 6 0	27 NDD 20 NDD	2.14 0.00 1.25 0.00	LTEUTE 005004 LTEUTE 005004
120	42	DS7 CONFIR	510-MIZ18 MRPC	B026 B036	004 + 14.4 004 + 14.6	81 52	35 SVI	0.90 0.78	UTELTE 005004
124	36	ISI	540-MIZ18	B004	015 + 45.2	6	20	1.20	LTEUTE
131	27	ISI	540-MIZ18	B004	011 + 10.2	6	20	0.95	LTEUTE
136	40	ISI	540-MIZ18	B004	015 + 40.5	6	20	1.46	LTEUTE

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THREE MILE ISLAND:UNIT 1
COMPONENT : SG B
OUTAGE : 10R
INDICATIONS \geq 20 % T.W.
INCLUDES MRPC WHERE AVAILABLE

Row	Tube	Exam Reason	Exam Tech	Exam Reel	Indication Location	Ind Deg	% / Coils	Ind Volt	Extent Tested
143	43	ISI	540-MIZ18	B004	010 + 7.9	8	27	0.78	LTEUTE
		ISI	540-MIZ18	B004	012 + 0.2	10	33	0.86	LTEUTE
146	37	ISI	540-MIZ18	B004	004 + 5.9	8	20	0.75	LTEUTE
		ISI	540-MIZ18	B004	009 + 3.2	7	23	0.74	LTEUTE
		ISI	540-MIZ18	B004	009 + 12.1	6	20	0.68	LTEUTE
		ISI	540-MIZ18	B004	011 + 1.2	9	30	0.72	LTEUTE
		ISI	540-MIZ18	B004	012 + 7.3	11	37	1.00	LTEUTE
150	25	ISI	540-MIZ18	B012	007 + 25.4	9	30	1.09	LTEUTE
		ISI	540-MIZ18	B012	015 + 19.5	7	23	0.75	LTEUTE

Total Tubes Included : 30

Total Indications : 46

GENERAL PUBLIC UTILITIES
THREE MILE ISLAND PLANT, UNIT 1

SCHEDULE

DAY ONE

TIME

:30	12:30 - 1:00	Introduction
		- Course Objective
		- Overview
		- Schedule of Activities
:30	1:00 - 1:30	MIZ-18 Bobbin Coil Guidelines (Class Reading Assignment)
:15	1:30 - 1:45	Break
:30	1:45 - 2:15	MIZ-18 Bobbin Coil Guideline Lecture (Instructor Directed)
:30	2:15 - 2:45	8x1 Analysis Guideline (Class Reading Assignment)
:15	2:45 - 3:00	Break
:30	3:00 - 3:30	8x1 Analysis Lecture (Instructor Directed)
:45	3:30 - 4:15	Set-Up Equipment

SCHEDULE (CONTINUED)

DAY TWO

4:00	8:00 - 12:00	Practice Tape Lab Session (Class Reviews Tape)
:45	12:00 - 12:45	Lunch
4:00	12:45 - 4:45	Practical Examination (Night Shift)

DAY THREE

4:00	8:00 - 12:00	Practical Examination (Day Shift)
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Times shown could be subject to change or modification.

THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
62	1	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
63	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
64	1	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
64	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
64	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
65	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
65	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
66	1	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
66	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
66	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
66	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
67	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
67	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
67	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
67	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
67	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
68	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
68	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
68	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
69	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
69	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
69	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
70	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
70	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
70	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
70	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
71	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
71	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
71	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
71	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
72	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
72	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
72	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
72	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
73	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
73	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
73	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
73	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
73	12	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	12	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	13	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	14	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	15	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
74	16	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	17	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	18	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	19	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	20	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	21	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	26	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	27	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	28	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	29	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
74	30	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	30	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	31	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	32	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	33	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	34	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
75	35	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	30	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	31	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	32	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	33	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	34	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
77	35	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	12	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	13	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	14	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	15	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	16	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	17	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	18	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	20	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
78	27	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
79	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
79	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
79	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
79	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
79	12	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
80	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
80	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
80	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
80	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
80	11	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
81	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG A
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
81	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
81	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
81	10	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
82	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
82	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
82	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
82	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
83	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
83	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
83	8	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
83	9	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
84	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
84	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
84	7	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
85	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
85	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
85	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
85	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
85	6	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
86	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
86	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
86	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
86	5	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
87	1	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
87	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
87	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
87	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
88	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
88	3	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
88	4	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
89	1	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE
89	2	Inlet	80"	SLEEVEPOST	400-COMBO	A049	LSEUTE

Total Tubes : 124

THREE MILE ISLAND:UNIT 1
 COMPONENT : SG B
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
62	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
63	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
63	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
64	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
64	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
64	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
64	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
65	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
65	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
66	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
66	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
66	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
66	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
66	5	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
67	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
67	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
67	5	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
67	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
68	5	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
68	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
68	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
69	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
69	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
69	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
69	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
70	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
70	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
70	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
71	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
71	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
71	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
71	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
72	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
72	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
72	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
72	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
72	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
73	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
73	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
73	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
73	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
73	12	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	12	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE

Continues Next Page =>

THREE MILE ISLAND:UNIT 1
 COMPONENT : SG B
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
74	13	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	14	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	15	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	16	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	17	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	19	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	20	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	21	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	26	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	27	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	28	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
74	29	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	30	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	31	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	32	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	33	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	34	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
75	35	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	30	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	31	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	32	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	33	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	34	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
77	35	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	12	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	13	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	14	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	15	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	16	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	17	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	19	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	21	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	26	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	27	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	28	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
78	29	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
79	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
79	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
79	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
79	12	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
80	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
80	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
80	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE

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THREE MILE ISLAND:UNIT 1
 COMPONENT : SG B
 OUTAGE : 10R
 TUBES SLEEVED DURING "10R"

Row	Tube	Sleeve Location	Sleeve Length	Exam Reason	Exam Tech	Exam Reel	Extent Tested
80	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
80	11	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
81	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
81	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
81	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
81	10	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
82	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
82	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
82	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
83	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
83	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
83	8	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
83	9	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
84	5	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
84	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
84	7	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
85	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
85	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
85	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
85	6	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
86	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
86	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
86	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
86	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
86	5	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
87	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
87	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
87	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
87	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
88	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
88	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
88	3	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
88	4	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
89	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
89	2	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE
90	1	Inlet	80"	SLEEVEPOST	400-COMBO	B040	LSEUTE

Total Tubes : 128