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November 05, 1999

1920-99-20582

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

Gentlemen:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Docket No. 50-289
Operating License No. DPR-50
NRC Notification on Completion of 13R Outage Steam Generator Examinations


In accordance with TMI-1 Technical Specifications (T.S.) 4.19.5.a, GPU Nuclear is required to provide a notification to the NRC of the following three items after the completion of the inservice inspection of the steam generator tubes and prior to exceeding a reactor coolant system temperature of 250 °F:

- 1) The number of tubes repaired or removed from service in each steam generator,
- 2) An assessment of the growth of inside diameter intergranular attack (IGA) degradation, and
- 3) Results of in-situ pressure testing, if performed.

Attachment 1 provides a summary of the October 12, 1999 telephone notification which satisfied the T.S. 4.19.5.a requirements after the completion of the Cycle 13 Refueling (13R) Outage inservice inspection of the TMI-1 Steam Generators.

Attachment 2 includes the information that was faxed to the NRC prior to the conference call on October 12, 1999 and a copy of the e-mail sent to the NRC after the call.

Sincerely,


James W. Langerbach
Vice President and Director, TMI

MRK
Attachments

cc: Administrator, NRC Region I
TMI Senior NRC Resident Inspector
TMI-1 Senior NRC Project Manager
File No. 98192

A001

Notification Summary – Completion of 13R Outage Tube Examinations

1) The number of tubes repaired or removed from service in each steam generator:

Thirty-six (36) tubes were removed from service in the TMI-1 "A" OTSG as a result of the 13R Outage eddy current inspections. Of the original 15,531 tubes in the "A" OTSG, 1336 (8.6%) of the tubes are now removed from service. 248 tubes in the "A" OTSG remain in service that were sleeved in previous outages.

Nine (9) tubes were removed from service in the TMI-1 "B" OTSG as a result of the 13R Outage eddy current inspections. Of the original 15,531 tubes in the "B" OTSG, 404 (2.6%) of the tubes are now removed from service. 253 tubes in the "B" OTSG remain in service that were sleeved in previous outages.

2) An assessment of growth of inside diameter (ID) intergranular attack (IGA) degradation:

GPU Nuclear completed bobbin coil eddy current examinations of all in-service tubes during the 13R Outage. Bobbin coil probe indications of possible degradation, including volumetric ID IGA indications were examined with an MRPC probe. The GPU Nuclear assessment of 13R Outage ECT examination results supports a conclusion of no statistically significant growth of volumetric ID IGA in the TMI-1 OTSGs.

GPU Nuclear will provide detailed information regarding the results of our evaluations to determine the apparent growth rate of the ID IGA volumetric eddy current indication in the 13R Outage 90 day report required by T.S. 4.19.5.b. We expect the final 13R apparent growth rate numbers to be very similar to the "no growth rate" results we reported for the last several outages in the 12R Outage 90 day report that was submitted on January 12, 1998.

3) Results of in-situ pressure testing, if performed:

In-situ pressure tests were conducted in accordance with the EPRI guidelines on three tubes in "B" OTSG. A list of tubes, eddy current indications, and test pressures was provided to the NRC before the October 12, 1999 phone call and is included in Attachment 2. No leakage was detected during any of the tests at pressures up to 4350 psig.

TMI - Unit 1 TUBE PLUGGING LIST

S/G A Sept-99 13R

| S/G | Row | Tube | Hot Leg | Cold Leg | Reason For Plugging | Tube Qty | Rev. No. |
|-----|-----|------|-----------|-----------|---------------------------------|----------|----------|
| A | 2 | 6 | Roll Plug | Roll Plug | SVI @ 15S + 36.43 | 1 | 00 |
| A | 18 | 84 | Roll Plug | Roll Plug | SVI @ UTS - 8.56 | 2 | 00 |
| | | | | | SVI @ UTS - 15.56 | | |
| | | | | | SVI @ UTS - 16.89 | | |
| | | | | | SVI @ UTS - 14.96 | | |
| A | 20 | 85 | Roll Plug | Roll Plug | SVI @ 15S + 5.45 | 3 | 00 |
| A | 29 | 3 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 4 | 00 |
| A | 31 | 41 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 5 | 00 |
| A | 38 | 74 | Roll Plug | Roll Plug | OD SVI @ LTS + 2.01 | 6 | 00 |
| A | 41 | 110 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 7 | 00 |
| A | 46 | 117 | Roll Plug | Roll Plug | SVI @ ETL - 0.67 | 8 | 00 |
| A | 48 | 120 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 9 | 00 |
| A | 50 | 116 | Roll Plug | Roll Plug | SCI @ ETL - 0.04 | 10 | 00 |
| A | 66 | 31 | Roll Plug | Roll Plug | SCI @ ETL - 0.09 | 11 | 00 |
| A | 71 | 36 | Roll Plug | Roll Plug | SAI @ 15S + 8.65 | 12 | 00 |
| A | 75 | 65 | Roll Plug | Roll Plug | SCI @ UTS + 0.36 | 13 | 00 |
| A | 76 | 94 | Roll Plug | Roll Plug | 43% @ UTS + 2.86 | 14 | 00 |
| A | 78 | 49 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 15 | 00 |
| A | 78 | 50 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 16 | 00 |
| A | 80 | 44 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 17 | 00 |
| A | 80 | 61 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 18 | 00 |
| A | 80 | 80 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 19 | 00 |
| A | 80 | 88 | Roll Plug | Roll Plug | OD SVI @ 15S + 16.33 | 20 | 00 |
| A | 85 | 22 | Roll Plug | Roll Plug | OD SVI @ 14S + 30.31 | 21 | 00 |
| A | 85 | 51 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 22 | 00 |
| A | 85 | 57 | Roll Plug | Roll Plug | SCI @ ETL - 0.15 | 23 | 00 |
| A | 99 | 29 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 24 | 00 |
| A | 106 | 72 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 25 | 00 |
| A | 114 | 93 | Roll Plug | Roll Plug | 40% @ 15S + 41 | 26 | 00 |
| A | 122 | 30 | Roll Plug | Roll Plug | SCI @ ETL - 6.57 | 27 | 00 |
| A | 122 | 38 | Roll Plug | Roll Plug | SCI @ ETL - 1.18 | 28 | 00 |
| A | 131 | 84 | Roll Plug | Roll Plug | SCI @ ETL - 0.08 | 29 | 00 |
| A | 136 | 80 | Roll Plug | Roll Plug | OD SVI @ 14S + 34.04 | 30 | 00 |
| A | 1 | 4 | Roll Plug | Roll Plug | Preventative (ID IGA) | 31 | 00 |
| A | 34 | 1 | Roll Plug | Roll Plug | Preventative (ID IGA) | 32 | 00 |
| A | 50 | 74 | Roll Plug | Roll Plug | Preventative (Kin Exp Inds) | 33 | 00 |
| A | 81 | 130 | Roll Plug | Roll Plug | Preventative (ID IGA) | 34 | 00 |
| A | 86 | 121 | Roll Plug | Roll Plug | Preventative (Kin Exp Ind) | 35 | 00 |
| A | 134 | 1 | Roll Plug | Roll Plug | Preventative (ID IGA) | 36 | 00 |

TMI - Unit 1 TUBE PLUGGING LIST

S/G B Sept-99 13R

| S/G | Row | Tube | Hot Leg | Cold Leg | Reason For Plugging | Tube Qty | Rev. No. |
|-----|-----|------|-----------|-----------|---------------------------------|----------|----------|
| B | 9 | 23 | Roll Plug | Roll Plug | SAI @ 15S - 8.47 | 1 | 00 |
| | | | | | SAI @ 15S - 10.03 | | |
| B | 14 | 7 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 2 | 00 |
| B | 48 | 87 | Roll Plug | Roll Plug | OD SVI @ UTS - 2.38 | 3 | 00 |
| B | 61 | 1 | Roll Plug | Roll Plug | SCI @ UTS + 0.60 | 4 | 00 |
| B | 61 | 19 | Roll Plug | Roll Plug | SCI @ ETL - 0.31 | 5 | 00 |
| B | 80 | 50 | Roll Plug | Roll Plug | SAI @ 15S + 29.05 | 6 | 00 |
| B | 80 | 62 | Roll Plug | Roll Plug | Kinetic Expansion Indication(s) | 7 | 00 |
| B | 113 | 2 | Roll Plug | Roll Plug | SAI @ 14S + 27.94 | 8 | 00 |
| B | 120 | 93 | Roll Plug | Roll Plug | OD SVI @ 04S - 0.63 | 9 | 00 |
| | | | | | OD SVI @ 04S - 0.92 | | |

IN SITU PRESSURE AND LEAK TEST LIST REV. 0
TMI-1 SG B 09/99 13R

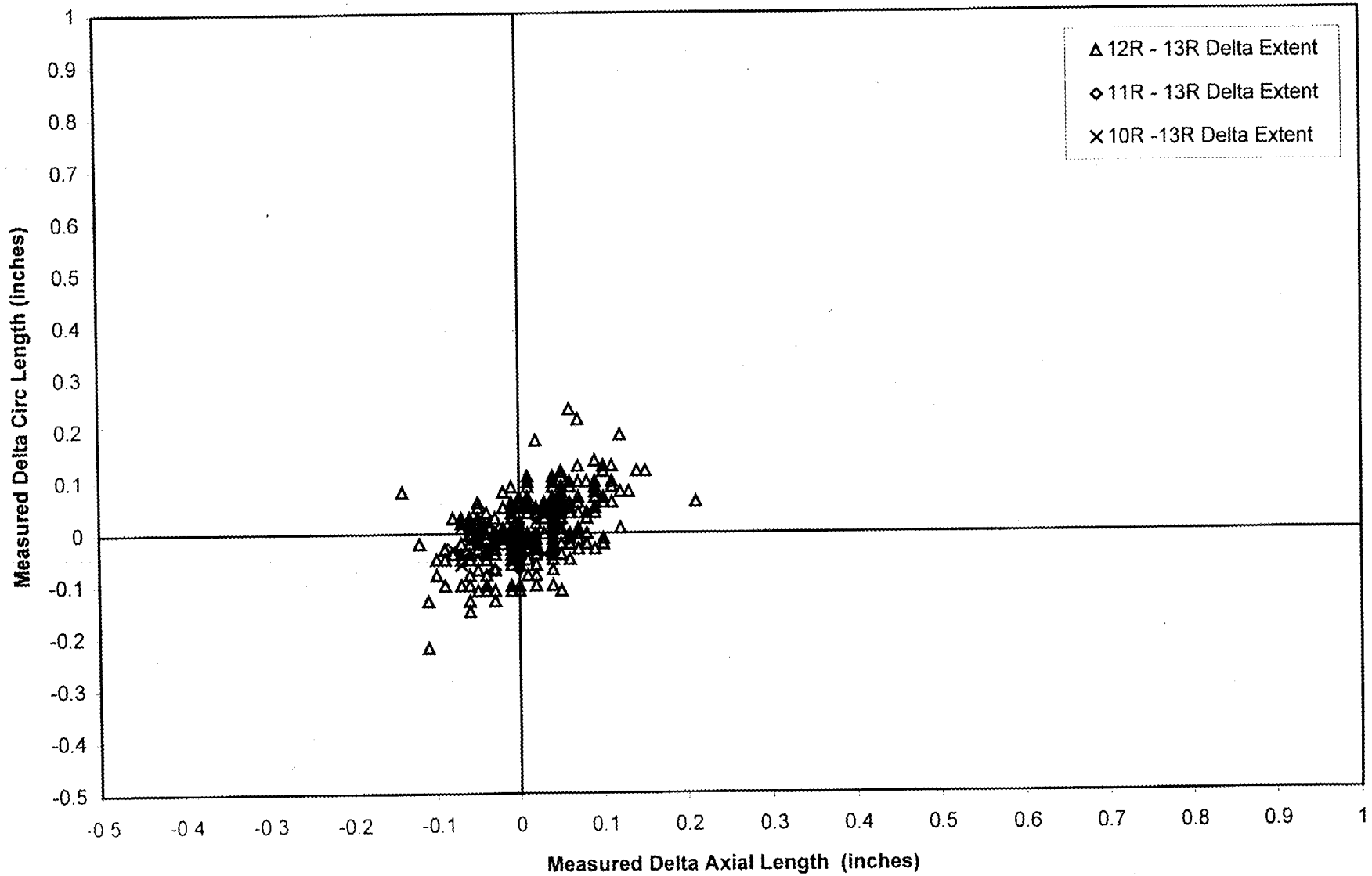
| TUBE AND EDDY CURRENT INFORMATION | | | | | | | | | | | | | IN-SITU TEST RESULTS | | | | |
|-----------------------------------|----------|------------------|-----|----------------------|-----------------|--------|-------|-------|-------------|-------------|-------|----------|----------------------|-------|-------|---------|----------|
| SG | REGION | TUBE INFORMATION | | | PLUS POINT DATA | | | | | BOBBIN DATA | | COMMENTS | GPM @ | GPM @ | GPM @ | MAXIMUM | |
| | | ROW | COL | LOCATION | AX LEN | CI LEN | VOLTS | EST % | ORIENTATION | IND | VOLTS | | EST % | NOPD | MSLB | 3NOPD | PRESSURE |
| SG B | Upper TS | 61 | 19 | ETL -0.31 | | 0.38 | 4.51 | 94 | ID SCI | NDD | | | UTS Circ | 0 | 0* | 0 | 4350 |
| | Freespan | 80 | 50 | 15S +28.84 to +33.06 | 4.22 | | 0.46 | | OD SAI | NQI | 0.08 | 47 | Freespan Axial | 0 | 0 | 0 | 4350 |
| | | | | 15S +33.59 to +33.91 | 0.32 | | 0.31 | | OD SAI | NQI | 0.37 | 32 | Freespan Axial | 0 | 0 | 0 | 4350 |
| | | 113 | 2 | 14S +28.04 to +28.91 | 0.87 | | 0.62 | | OD SAI | NQI | 0.23 | 67 | Freespan Axial | 0 | 0 | 0 | 4350 |

* Note: An additional axial load was applied during this test to impart 1402 lbs. axial tensile load on this indication. This indication was also tested at 500 psi with a 2350 lbs. axial load applied (to simulate SB LOCA) with no leakage.

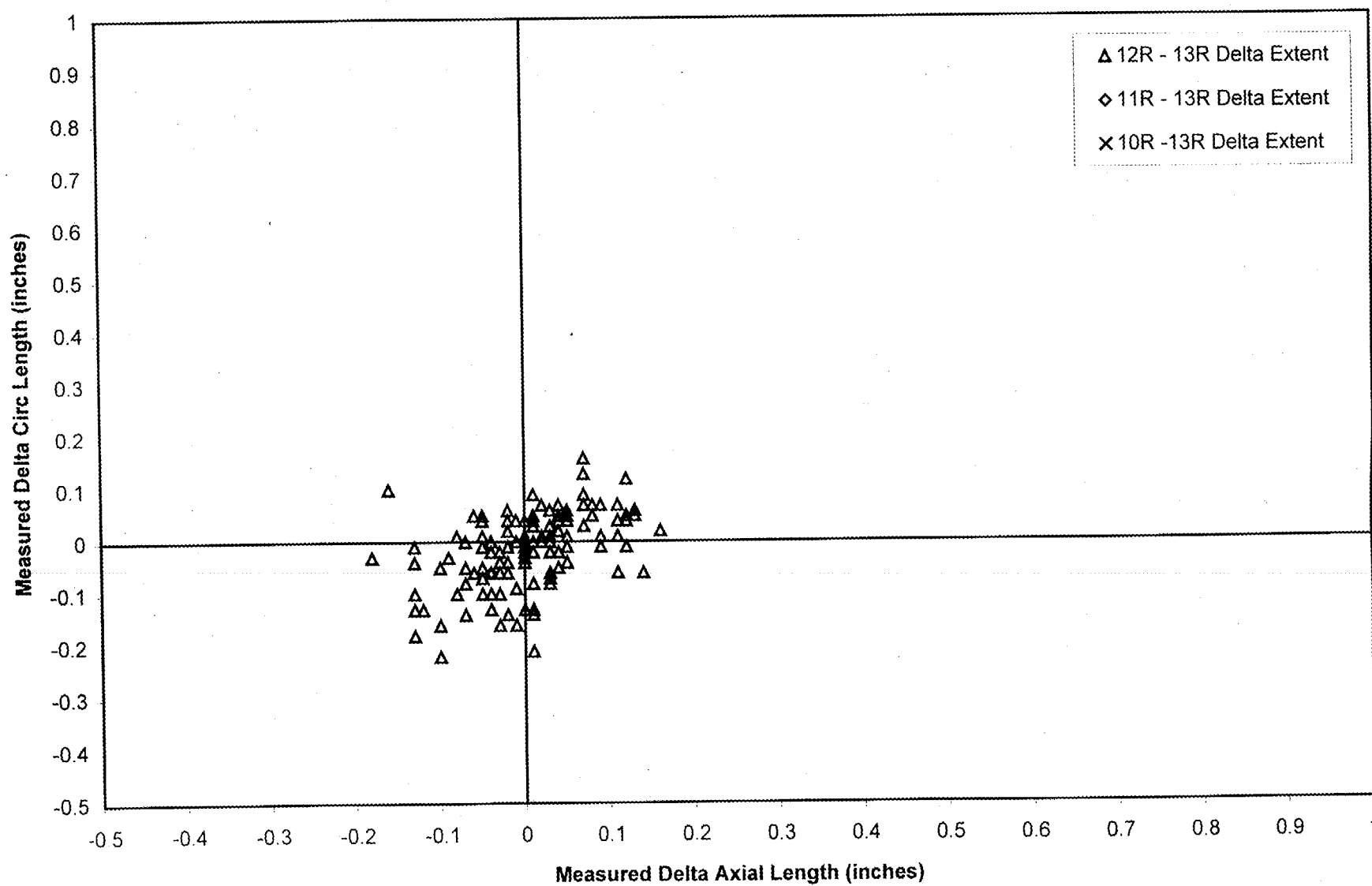
NOTE: NOPD = 1305
 MSLB = 2575
 3 delta P = 3915

TS: Tubesheet
 UTSF: Upper Tubesheet Secondary Face
 ETL: Expansion Transition Location
 NQI: Non Quantifiable Indication
 NOPD: Normal Operating Pressure Differential

Growth of ID VOLs Below ETL TMI-1 SG A

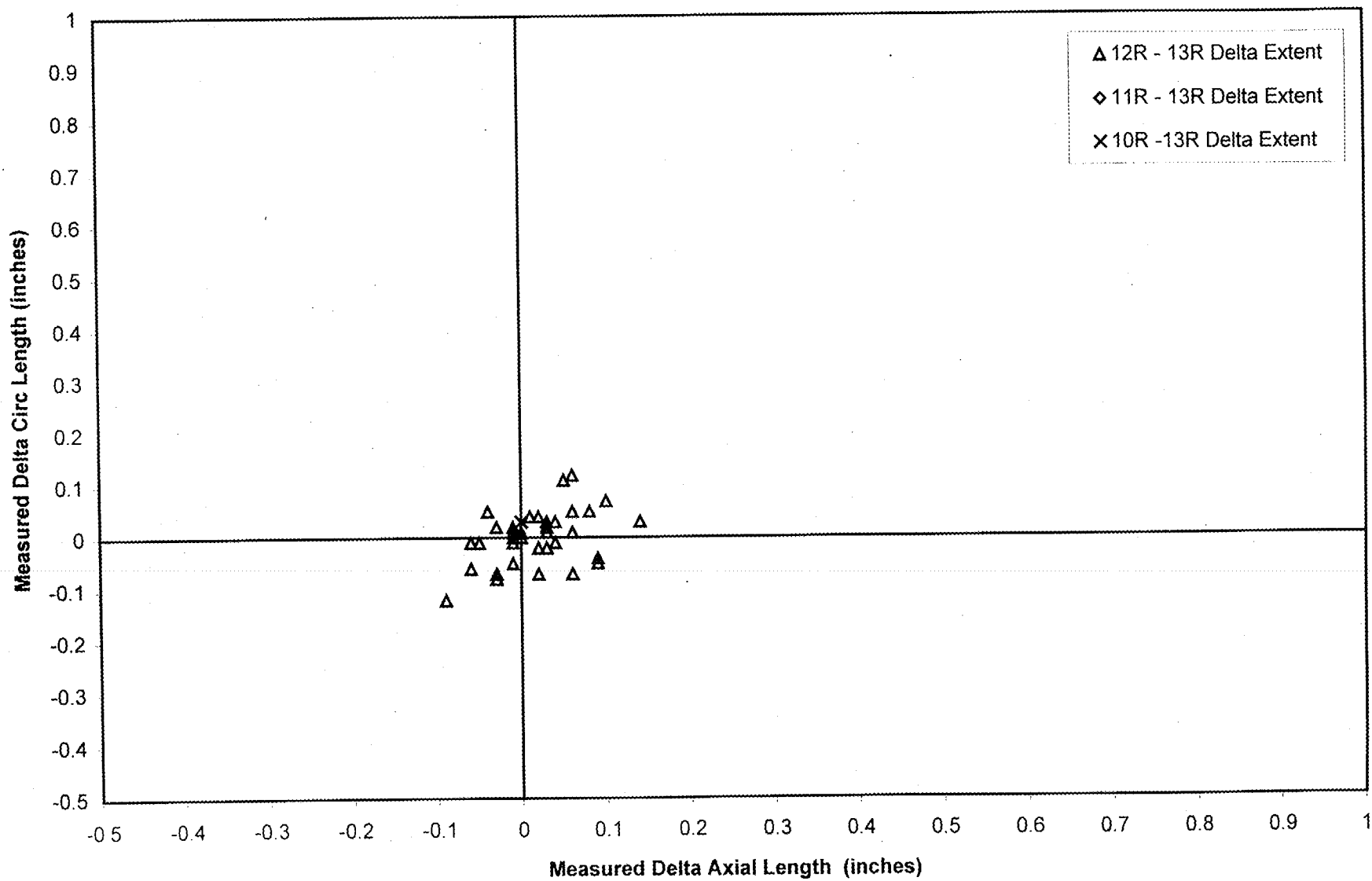


Growth of ID Kinetic Expansion VOLs TMI-1 SG A

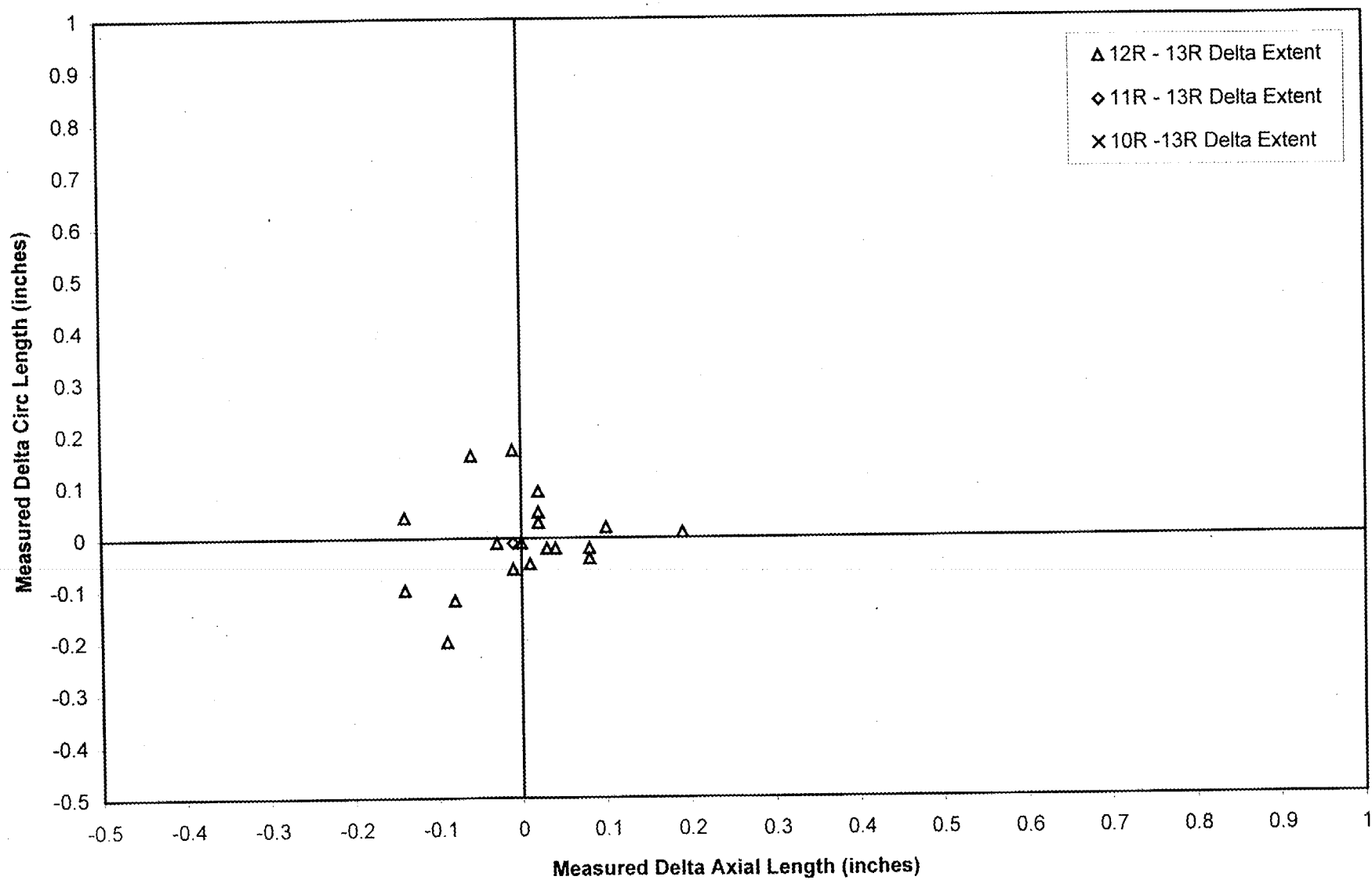


Growth of ID VOLs Below ETL

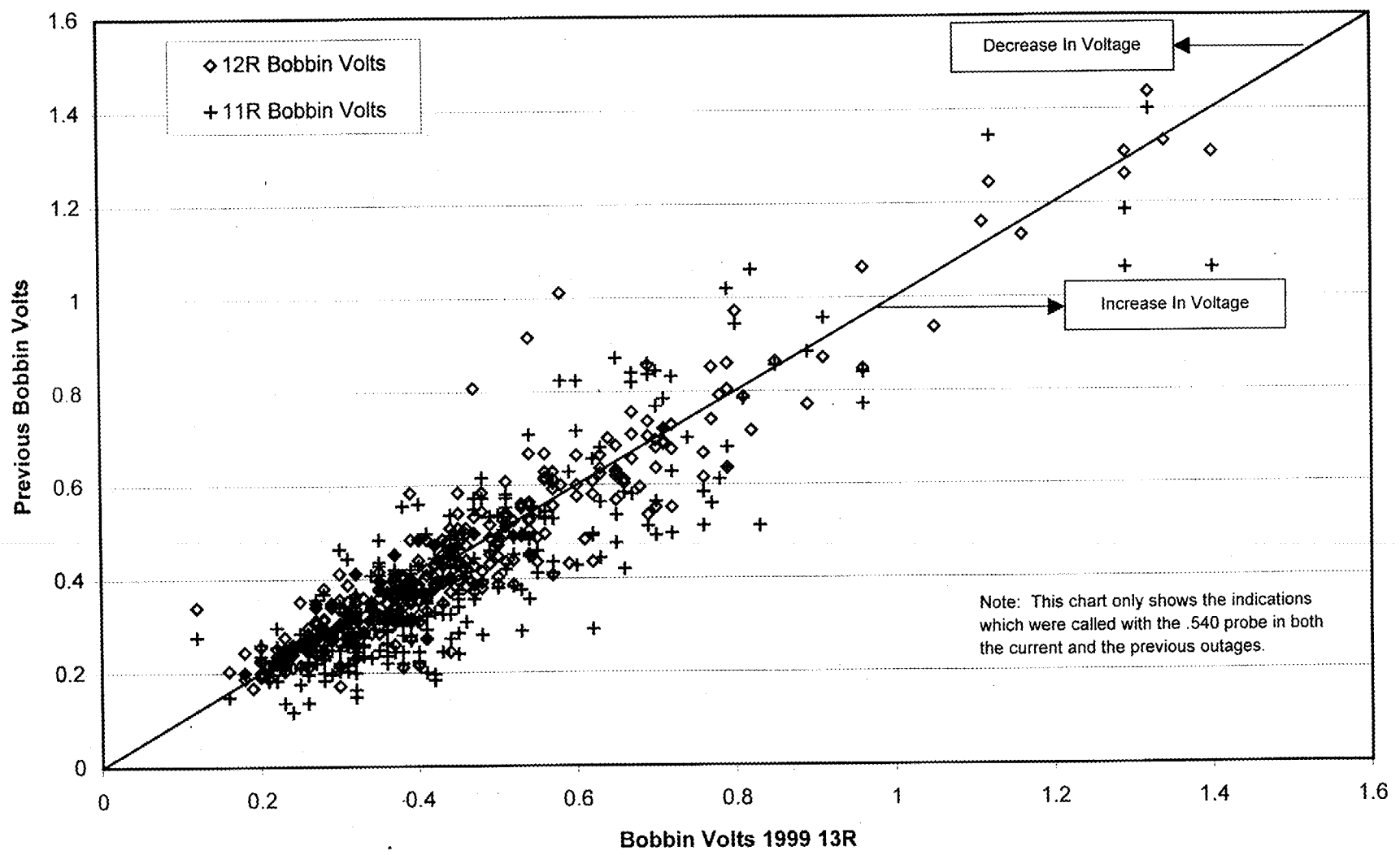
TMI-1 SG B



Growth of ID Kinetic Expansion VOLs TMI-1 SG B



Bobbin Voltage Growth for ID IGA Indications TMI-1 Both SGs



To: hnp@nrc.gov
cc: cdb@nrc.gov, Cxs1@nrc.gov, tgc@nrc.gov, ssb1@nrc.gov
Subject: GPUN Assessment of growth of ID IGA Degradation

GPU Nuclear provided notification of the preliminary results from 13R OTSG tube inspections as required by T.S. 4.19.5 in a conference call on 10/12/99. In addition to the handouts that were faxed to Helen Pastis of the NRC prior to the meeting, the following is our conclusion statement regarding our assessment of growth of the ID IGA as requested by the NRC during the conference call:

GPU Nuclear's assessment of Outage 13R ECT examination results supports a conclusion of no statistically significant growth of volumetric ID IGA in the TMI-1 OTSG's. This conclusion is based on comparison of measured axial and circumferential lengths from rotating probe techniques from Outage 13R with those from previous outages (where data exists), as well as comparison of bobbin coil voltages. Based on 13R data reviewed to date GPU Nuclear believes the results of our quantitative analyses for 13R volumetric ID IGA growth will be consistent with and similar to that reported in our post 12R 90 day report. GPU Nuclear is completing its evaluation of growth for these indications and the final results will be included in the Technical Specification required 90 Day Report for 13R.