

DMB-016

MAR 05 1985

Docket No. 50-289

LICENSEE: GPU Nuclear Corporation

FACILITY: Three Mile Island, Unit 1

SUBJECT: SUMMARY OF MEETING WITH GPUN TO DISCUSS ITS REQUESTED CHANGE IN STEAM GENERATOR TUBE REPAIR LIMITS

The NRC staff met with representatives of GPU Nuclear Corporation on February 19, 1985 to discuss technical and procedural aspects of GPUN's request of January 31, 1985 to revise the repair limit for the TMI-1 steam generator tubes. The presentation material and transcript of the meeting, including the attendance list, are enclosed.


The licensee presented a summary of the technical basis for its request. Its approach involves repair criteria based on maintaining the licensed margin of safety to tube rupture during design basis events rather than a fixed through-wall defect depth. Discussion took place on the licensee's analytical approach, the number of tubes involved, eddy current accuracy and repeatability and the negative safety aspects of plugging tubes unless necessary. The staff indicated that as its review progressed there were expected to be questions regarding technical aspects of the licensee's submittal which will be transmitted to the licensee shortly. GPUN's basis for its position that approval for the requested change in the repair limit would not require a change in the Technical Specifications (TSs) is that the intent of the TS wording was to permit just such a change and the wording itself permits a change without amending the TS, although the requirement for NRC approval still remains. Discussion ensued of the significance of the TS wording and its intent, and of basis for inspection if the TS were not changed. There had been no intention of making a decision on this matter at the meeting, and no agreement on the matters under discussion was reached.

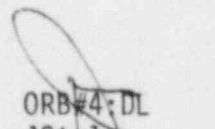
Original signed by


Harley Silver, Project Manager
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Enclosure:
As Stated

cc w/enclosures:
See next page


ORB #4:DL
HSilver;cr
3/4/85


ORB #4:DL
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3/5/85


ORB #4:DL
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3/1/85

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MEETING SUMMARY DISTRIBUTION

Licensee: GPU Nuclear Corporation

*Copies also sent to those people on service (cc) list for subject plant(s).

Docket File

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L PDR

ORR#4 Rdd

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STEAM GENERATOR LICENSING BASES

APPLICABLE GENERAL DESIGN CRITERIA

- GDC 14 REQUIRES A DESIGN WITH A LOW PROBABILITY OF RAPIDLY PROPAGATING OR GROSS FAILURE.
- GDC 15 REQUIRES SUFFICIENT MARGIN THAT GDC 14 IS MET UNDER NORMAL AND ACCIDENT CONDITIONS.
- GDC 31 REQUIRES THAT THE DESIGN MARGIN IN GDC 15 REMAIN SUFFICIENT THROUGH THE LIFE OF THE COMPONENT, WITH CONSIDERATION TAKEN OF THE EFFECTS OF ENVIRONMENT AND INDWELLING FLAWS.

IMPLEMENTATION OF THE GDC

10 CFR 50.55A (G) REQUIRES APPLICATION OF ASME CODES.

GDC 14,15 ARE ADDRESSED BY ASME SECTION III.

GDC 31 IS ADDRESSED BY ASME SECTION XI.

APPLICATIONS OF THE ASME CODE

SECTION III FATIGUE STRENGTH EVALUATIONS

- I. BAW 10146 "MINIMUM REQUIRED TUBE WALL THICKNESS
FOR B&W 177FA OTSG"
 - O SECTION III METHODOLOGY APPLIED TO ID NOTCHES
 - O CONSERVATIVE, GENERIC LOADINGS.
 - O STRENGTH REDUCTION FACTOR OF 5.
 - O RESULTS APPLIED BY NRC IN EVALUATING GPUN AND OTHER PLANTS.

- II. GPU SECTION III CALCULATIONS
 - O SECTION III METHODOLOGY OF ID NOTCHES
 - O CONSERVATIVE, GENERIC ASSUMPTIONS IN DETERMINING STRESSES.
 - O STRENGTH REDUCTION FACTOR OF 5.
 - O RESULTS CONSISTANT WITH BAW 10146.
 - O USED BY GPUN TO SUPPORT TR-008.

SECTION XI FATIGUE STRENGTH EVALUATIONS

GPUN TDR 388

- o APPENDIX A METHODOLOGY (LINEAR ELASTIC FRACTURE MECHANICS)
- o STRESS INTENSITY SOLUTION APPROPRIATE FOR A THIN TUBE.
- o MATERIAL PROPERTIES FOR INCONEL-600.
- o SUPPORTS GPUN TDR-008; SUBMITTED WITH SUPPORTING DOCUMENTS 9/15/83.
- o EVALUATED BY NRC IN BROOKHAVEN TER IN SUPPORT OF NUREG 1019.

IN ADDITION TO CODE CALCULATIONS -

ONE-TIME ONLY LOADS - ACCIDENT LOADING

GPUN TDR 388

- o MSLB IS LIMITING ACCIDENT LOAD.
- o LOAD IS GENERICLY AND CONSERVATIVELY DETERMINED IN BAW 10146.
- o SOLID MECHANICS METHODS APPLIED.
- o EVALUATED BY NRC IN BROOKHAVEN TER IN SUPPORT OF NUREG 1019.

PREVIOUS APPLICATION OF CALCULATIONS -

VERIFY ADEQUACY OF EDDY CURRENT DETECTABILITY.

PRESENT APPLICATION OF CALCULATIONS -

SET REPAIR CRITERIA BASED ON A UNIFORM MARGIN OF SAFETY RATHER THAN A UNIFORM THROUGH WALL READING.

LICENSED MARGIN OF SAFETY

PRESENT MAXIMUM LICENSED FLAW -

- o 40% THROUGH WALL
- o 360° CIRCUMFERENTIAL EXTENT

PROPOSED REPAIR CRITERIA - (TDR 645)

- o PERCENT THROUGH WALL EXTENT PERMITTED DEPENDENT ON CIRCUMFERENTIAL EXTENT.

- o MARGIN TO CALCULATED CURVES GREATER THAN OR EQUAL TO THAT FOR 40% THROUGH WALL, 360° CIRCUMFERENTIAL EXTENT INDICATIONS.