

REGULATORY DOCKET FILE COPY

September 22, 1976



Mr. Dennis L. Ziemann, Chief
 Operating Reactors - Branch 2
 Division of Operating Reactor
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Subject: Dresden Station, Unit 3
 Quad Cities Station, Unit 2
 Proposed Inspection Program for
 Feedwater Nozzle Inspection
 NRC Docket Numbers 50-249 and 50-265

- Reference: (a) G.A. Abrell letter to D.L. Ziemann dated August 13, 1976.
- (b) K.R. Goller letter to R.L. Bolger of September 13, 1976.
- (c) G.A. Abrell letter to R. Snaider dated September 13, 1976.
- (d) Telephone conversation between D.P. Galle and P.W. O'Connor on September 20, 1976.

As a result of our discussions of September 20, 1976 with members of the NRC staff, including Mr. P. O'Connor, and in accordance with previous discussions with members of the staff indicating our intent to utilize a duplicate feedwater nozzle to form the basis of a more accurate acceptance criteria, we have reassessed the recommendations made in our letter of August 13, 1976 (Reference a) and submit the following revised acceptance criteria for the UT examination of the feedwater nozzle inner blend radius.

- 1.) The calibration piece shall be a duplicate (same material and geometry) of the actual feedwater nozzle and the adjoining section of the vessel wall and associated weld.
- 2.) Instrument calibration shall be performed by setting the response of an 8mm deep notch in the blend radius of the duplicate nozzle to 80% of full screen height (FSH).

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- 3.) The examination shall be conducted at a sensitivity equal to the calibration sensitivity plus an additional 6db, in accordance with the ASME code, Article I-5112 of Section XI.
- 4.) All relevant indications with an amplitude greater than or equal to either 50% of the reference reflector or 10% FSH above the clad roll noise level shall be recorded and evaluated. All evaluations will be made at calibration sensitivity.
- 5.) If a relevant indication is evaluated as 80% FSH or more at calibration sensitivity, a dye penetrant examination will be made of the area containing the indication.

These criteria will be documented in Revision 2 of our procedure NDT-C-24, and used to perform the Dresden Unit 3 feedwater nozzle inspection for the blend radius area of the nozzle during the Fall, 1976 refueling outage.

The Fall 1976 Quad Cities Unit 2 examination now completed was performed in accordance with NDT-C-24 Revision 1. This examination was performed with a calibration using the primary vessel reference block rather than the Breda block as was mentioned in our August 13, 1976 letter (Reference a). The Quad Cities Unit 2 examination was overly sensitive and therefore extremely conservative in comparison to the proposed revision 2 of procedure C-24 primarily because Revision 1 (and the August 13, 1976 letter) required evaluation at scanning level which was 20db. above the calibration level.

This more conservative procedure found two indications at Quad Cities Unit 2 which were 80% FSH or greater (80% FSH for nozzle B and 90% FSH for nozzle C). The 8mm notch in the duplicate nozzle which just penetrates the .25" clad and which corresponds to our target rejection criteria, was examined at scanning sensitivity and was found to produce a UT reflection that exceeded 100% FSH indicating that this method is overly conservative for a 80% FSH rejection criteria. This is further confirmed by comparing the 8mm calibration notch reading of 15% FSH with the 5% and 10% readings for the two indications found on the nozzles when scanned at calibration sensitivity (zero db increase in amplitude).

The above discussion demonstrates that the two recordable indications found on the Quad Cities Unit 2 feedwater nozzles are clearly less than our target rejection criteria as explained above. A crack 8mm deep (.32" total depth) would, according to the G.E. crack growth curves presented to you during our 9-3-76 meeting, require about 52 startup/shutdown cycles in previous grindout location or about 110 cycles in

a new site to grow to the conservatively calculated allowable depth limit. In this case the nozzle indication are at a new site and the 110 cycles would apply. Since only about 20 such cycles are expected during the next operating period, we conclude that the two indications identified are acceptable without grinding repair or further examination at this time.

We also feel that the Quad Cities Unit 2 experience discussed above demonstrates that the revised procedure (NDT-C-24 Rev. 2) which we intend to use will be a more appropriate procedure for the Dresden Unit 3 feedwater nozzle inspection this fall.

The preceding discussion addresses the blend radii area of the feedwater nozzle. The bore of the nozzle was inspected at Quad Cities Unit 2 and will inspected at Dresden Unit 3 this fall in accordance with our procedure NDT-C-25, Rev. 0 which was submitted to you with our September 13, 1976 letter (Reference C).

This letter constitutes a change to both our August 13, 1976 letter (Reference a) and the course of action for the nozzle inspection outlined in your letter of September 13 (Reference b) in which you requested confirmation or a proposed alternate program. This letter constitutes the proposed alternate program which we intend to follow. Except for the changes to the acceptance criteria for the nozzle blend radius inspection discussed above, we will conform to the course of action outlined in Reference b.



G.A. Abrell
Nuclear Licensing Administrator
Boiling Water Reactors

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