

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office
CEDAR RAPIDS, IOWA

December 15, 1977
IE-77-2264

LEE LIU
VICE PRESIDENT - ENGINEERING



Mr. George Lear, Chief
Operating Reactors Branch 3
Division of Operating Reactors
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Lear:

Your letter of August 11, 1977 requested us to provide a description of our proposed inspection program for the DAEC reactor vessel feedwater and CRD nozzles.

Iowa Electric had numerous discussions with your staff prior to the 1977 refueling outage to review the DAEC design application of a welded-in feedwater nozzle thermal sleeve.

On February 10, 1977, we met with representatives of your staff to discuss the planned feedwater nozzle inspection at the DAEC during the spring 1977 shutdown. In addition, the meeting was conducted to review the installation of instrumentation within the reactor vessel. This instrumentation was installed to demonstrate the integrity and effectiveness of the welded-in feedwater nozzle thermal sleeves. Data collected and reduced by the General Electric Company has indicated that the design application is fulfilling its intended purpose which is to minimize the effect of feedwater thermal transients on the vessel nozzle. Although the report has not been finalized, it should be available in the very near future.

Since your request mainly addressed those BWR's without welded-in thermal sleeves, we believe the information you requested can be best expressed as follows:

The DAEC has experienced 78 startup-shutdown cycles of which 66 had been accumulated prior to the spring 1977 outage.

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Examination of the DAEC feedwater nozzles during the planned 1978 refueling outage is to include an ultrasonic examination of the nozzle bores and inner radii and the safe end welds. The inner radius of each nozzle will be scanned by shear wave from the reactor vessel surface. The bore will be scanned from the outer surface of the nozzle by the shear wave technique using four wedges shaped to 30° and 45° shear and 20° and 30° to the right and left and one wedge for a straight 30° shear.

We plan to use a mock-up nozzle to qualify the procedure and personnel prior to the examination.

The results of similar ultrasonic examinations made during the 1977 refueling outage will be compared to the planned examinations.

Indications will be evaluated by comparing their response with that obtained from the known discontinuities in the reference standard and will be evaluated by maximum amplitude, travel and length. Indications that exceed the standards for allowable indications of IWB-3500 of ASME Section XI will be evaluated by the analytical procedures of Appendix A of the Code.

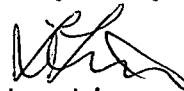
The DAEC CRD return line nozzles incorporate a design application which involves a double thermal sleeve.

Examination of the CRD return line nozzle during the planned 1978 refueling outage is to include an ultrasonic examination of the nozzle bore and inner radii and the safe end weld. The examination technique and acceptance criteria to be in accordance with those proposed above for the feedwater nozzles.

We are presently evaluating the CRD return line rerouting and isolation of the existing CRD nozzle, but do not anticipate modifications being initiated this outage.

We believe the above information fulfills your request. Please contact us should you require further information.

Very truly yours,



Lee Liu
Vice President, Engineering

LL/HWR/ms
cc: H. Rehrauer
D. Arnold
R. Lowenstein
R. Clark (NRC)
L. Root
File A-103, B-11a

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