

INDIANA & MICHIGAN ELECTRIC COMPANY

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April 10, 1987
AEP:NRC:0969E

Donald C. Cook Nuclear Plant, Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
INSERVICE INSPECTION PROGRAM
REQUEST FOR ADDITIONAL INFORMATION

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington D.C. 20555

Attn: H. R. Denton

Dear Mr. Denton:

This letter is in response to the NRC's letter from B. J. Youngblood to John E. Dolan dated February 2, 1987, which requested additional information on the ISI Second 10-Year Interval Weld Program for the Donald C. Cook Nuclear Plant, Units 1 and 2. Reference numbers used are the same as those in the attachment to the NRC letter requesting the information.

Item 2A

The NRC Materials Engineering Section attachment stated in this item that Residual Heat Removal, Emergency Core Cooling, and Containment Heat Removal systems shall not be completely exempted from inservice volumetric examination. The NRC staff further indicated that they had previously determined that a 7.5% augmented volumetric sample constitutes an acceptable resolution at similar plants, and that the ISI Program for the Containment Spray System should be revised to include volumetric examination of a representative sample of welds.

The ISI Second 10-Year Interval Weld Program for the D. C. Cook Plant (submitted December 31, 1985) stated in the Basis for Preparation that Class 2 components were included in accordance with the 1983 Edition through Summer 1983 Addenda of ASME Section XI, except that, in accordance with 10 CFR 50.55a (b) (iv), selection and allocation of code Class 2 piping welds were determined by requirements in the 1974 Edition through Summer 1975 Addenda. The examination method was to be in accordance with requirements of 1983 Edition through Summer 1983 Addenda, which does not require volumetric examination for Section XI, Table IWC-2500-1, Category CF welds, in the size range of the Containment Spray System piping.

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The NRC has indicated that a 7.5% augmented volumetric sample is an acceptable number of welds to be examined in the Containment Spray System. A number of welds equal to this percentage will be added to the program and in sufficient time so that the required number of weld examinations will be made within the first one-third Inspection Period. Revised pages of the ISI weld program will be available and incorporated into the program by June 1, 1987. The revised pages will be submitted to the NRC by June 1, 1987.

Item 2B

The Materials Engineering Section stated a concern about volumetric examination of cast stainless steel. They indicated that significant improvements have been achieved in the ability to examine this material, and accordingly, the NRC staff is requiring that utilities perform the Code-required examinations by incorporating these improved techniques as part of the inservice examination procedures.

Since preservice examination of the D. C. Cook Plant in 1974, welds in centrifugally cast stainless steel have had the benefit of state-of-the-art ultrasonic examination, which was developed by Southwest Research Institute, the D. C. Cook Plant ISI ultrasonic examination contractor. This technique utilizes a 1 MHz, 45 degree refracted longitudinal wave. It was qualified for use at the D. C. Cook Plant and has since been successfully applied by Southwest Research Institute at several other plants. The refracted longitudinal wave technique utilizes a standard Code calibration and provides a beam angle in the material consistent with Code requirements.

Centrifugally cast stainless steel piping drop-out material from the Donald C. Cook main reactor coolant loops was used to fabricate most of the ultrasonic calibration blocks. This should provide an accurate ultrasonic calibration in that the acoustic properties of the calibration block are similar to the installed piping. This should prevent significant differences in beam angle and attenuation from occurring between the calibration block and the material to be examined.

The procedures and personnel utilized at the Donald C. Cook Nuclear Plant over the first 10-year interval were qualified in accordance with the ASME Boiler and Pressure Vessel Code and American Society for Nondestructive Testing Recommended Guide SNT-TC-1A, respectively. Additionally, for ultrasonic examination of centrifugally cast stainless steel, Southwest Research Institute has implemented examiner training for interpretation of signal responses from various crack implants, notches, metallurgical conditions, and hole reflectors. Examiners have been trained on special mock-ups containing cracks prior to performing examination in the field.

The procedures and techniques outlined above are intended to be used for the second interval examinations of Primary Coolant Piping until new techniques are proven superior. It is our belief that the capability to detect flaws in centrifugally cast stainless steel material is more dependent upon the ultrasonic instrument/search unit combination and

special examiner training than the data acquisition method. The use of computer imaging systems has the potential to enhance the data analysis process, but efforts made to optimize the ultrasonic signal presentation and the signal-to-noise ratio are more effective and will provide a more meaningful examination, as well as being more cost-effective. However, American Electric Power will continue to evaluate and consider the advantages of improvement and refinement of equipment, procedures, and examiner training for potential application at the Donald C. Cook Nuclear Plant.

Item 2C

The attachment requests a set of boundary diagrams defining the ASME Code class boundaries. A single set of color-coded flow diagrams (piping and instrument drawings) for Units 1 and 2 was provided to the NRC staff in our original transmittal of the Second 10-Year Interval Inservice Inspection Program. We will provide another set of color-coded flow diagrams showing the ASME Code Class 1, 2, and 3 boundaries for Units 1 and 2 to aid the NRC's review of the second interval program. We plan to provide these drawings to the NRC by June 1, 1987.

Item 2D

The NRC staff has indicated that code relief requests cannot be assumed even though code relief was granted for the first interval, and there have been no changes to the plant for these configurations since the original code relief requests were submitted.

A complete submittal of the requests for relief for Units 1 and 2 for the Second 10-Year Inspection Interval will be provided to the NRC staff for review. This submittal will include requests for relief for both the weld program and system pressure tests. This submittal will be provided to the NRC by June 1, 1987.

Item 2E

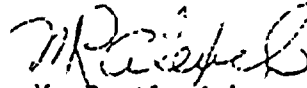
It was requested that specific weld identification be provided for the relief requests listed in the ISI weld program.

Specific weld identification numbers will be provided for each relief requested in the weld examination program. This information will be included in the code relief submittal as noted in 2D by June 1, 1987.



This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,


M. P. Alexich
Vice President

cm

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis