



Commonwealth Edison

One First National Plaza, Chicago, Illinois

Address Reply to: Post Office Box 767

Chicago, Illinois 60690

May 24, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Byron Generating Station, Unit 2
Preservice Inspection
NRC Docket No. 50-455

Reference: (a): March 15, 1985 letter from T.R. Tramm to H.R. Denton

Dear Mr. Denton:

This letter provides additional information regarding the preliminary preservice inspection examinations of the Byron Unit 2 steam generators and pressurizer. Based on our evaluation of the condition of these components, we plan to repair three Unit 2 steam generator weld areas which contain indications unacceptable to ASME Code Section XI. We will also remove two core samples from other Unit 2 steam generator welds for metallurgical analysis. The results of this analysis will be used to disposition other weld reflectors identified in these components.

Reference (a) described the results of the preliminary ultrasonic (UT) examinations performed on the Byron Unit 2 steam generators and pressurizer. Preliminary conclusions were presented regarding the condition of the Unit 2 components based on the UT data recorded by EBASCO Services, Inc. and the Westinghouse metallurgical analysis of Byron Unit 1 steam generator weld samples. When correction factors are applied to the Unit 2 examination data to account for ultrasonic oversizing, only five of the reported forty-five weld indications are unacceptable. Based on this information, only these five indications warrant repair. A more detailed summary of the data evaluation is provided in Attachment I.

We originally planned to repair three of the five weld defect areas. We also proposed to extract metal samples from these three locations for destructive testing and metallurgical analysis. These areas are in the upper and lower welds of the steam generator transition cone. The other two unacceptable indications, located in the welds near the tubesheet, were to be evaluated by fracture mechanics analysis.

However, subsequent review of the steam generator design shows the welds near the tubesheet to be most favorable for extracting metal samples. Consequently, we now plan to remove two 2.5 inch diameter plug samples from the tubesheet welds and install cover plates. No welding will be required in this procedure. The three indications near the transition cone will be removed by "controlled" grinding to minimize the size of the excavations. If weld repair is required, we will use procedures similar to those for the repair of the Byron Unit 1 steam generators. However, these Unit 2 procedures will be written in accordance with the requirements of ASME Code Section III. The Unit 1 repair methodology is provided in Attachment II.

8506050380 850524
PDR ADOCK 05000455
Q PDR

Boo
1/15

May 24, 1985

- 2 -

The metallurgical analysis of the two Unit 2 core samples will be performed to determine if the nature of the weld reflectors in the Unit 2 components is the same as those in Unit 1 components. Analysis of the Unit 1 core samples demonstrated that the indications were oversized by a factor of 6.5 for the through-wall depth dimension and by a factor of 2.5 for length. The Unit 1 metallurgical report is provided as Attachment III. If the Unit 2 analysis demonstrates that similar oversizing of the reflectors has occurred, we feel that additional repairs are unnecessary.

In an attempt to determine the cause of the weld indications, the fabrication history and the original shop weld radiographs of the steam generators have been reviewed. Details of this review including fabrication materials and weld details are provided in Attachment IV. Based on this review and the UT examination data we believe that the indications are very small slag-induced discontinuities in the weld metal near the inside diameter surfaces. The formation of these discontinuities most likely occurred during fabrication when these weld areas were back gouged and rewelded after removing the backup bar.

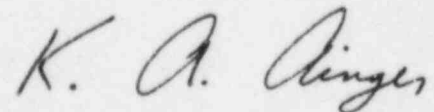
The original construction radiographs show slag inclusion-type defects of sizes varying from 1/4 to 3/8 inches. Commonwealth Edison personnel performed ultrasonic examinations to more accurately size the defects and this showed the defects to be smaller in the through-wall depth dimension than those reported by EBASCO. This information supports our belief that the UT examination performed and reported in accordance with the requirements of ASME Code Section XI exaggerates the sizes of the defects.

Core sampling and weld repair is currently scheduled to begin on June 3, 1985. The metallurgical analysis will be performed immediately after the samples are extracted. The results of the analysis are expected to be available by June 17, 1985 and will be submitted for your review.

Please direct questions concerning this matter to this office.

One signed original and fifteen copies of this letter and the attachments are provided for NRC review.

Very truly yours,



K.A. Ainger
Nuclear Licensing Administrator

Attachments

ATTACHMENT I