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 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331
 AUTH. NAME: MCGAUGHY, R.W. AUTHOR AFFILIATION: Iowa Electric Light & Power Co.
 RECIP. NAME: DENTON, H. RECIPIENT AFFILIATION: Office of Nuclear Reactor Regulation, Director

SUBJECT: Informs that all weld overlay designs meet acceptance criteria delineated in Generic Ltr 84-11, based on info provided previously & post-repair insp results. Min thickness of RRD-J7 weld overlay included first overlay layer.

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Iowa Electric Light and Power Company
June 14, 1985
NG-85-2845

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

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Results of Inspection of Stainless Steel
Piping at the Duane Arnold Energy Center
Reference: 1. Letter, R. W. McGaughy (Iowa Electric) to
H. R. Denton (NRC), dated May 3, 1985
(NG-85-1901)
2. Letter, R. W. McGaughy (Iowa Electric) to
H. R. Denton (NRC), dated May 24, 1985
(NG-85-2480)
3. Letter, R. W. McGaughy (Iowa Electric) to
H. R. Denton (NRC), dated June 7, 1985
(NG-85-2743)
File: B-31c, SpF-118, A-107a

Dear Mr. Denton:

During the current Duane Arnold Energy Center (DAEC) refueling outage, which began February 1, 1985, a comprehensive program for the detection of Intergranular Stress Corrosion Cracking (IGSCC) was undertaken. Cracks were discovered in recirculation piping system welds based on Ultrasonic Testing (UT) performed prior to and following Induction Heating Stress Improvement (IHSI) of the welds. A total of 104 welds underwent the IHSI process, and indications were detected in 11 welds. Subsequently, these indications were repaired by the method of weld overlay.

The commission has been kept informed of these developments as information became available. Reference 1 provided a summary of our findings, Reference 2 provided ultrasonic data and the weld overlay design, and Reference 3 provided a response to NRC questions and a revised weld overlay design report. This was also the topic of an April 22, 1985, meeting with NRC Staff reviewers.

We have now completed the weld overlay repair project. The final overlay surfaces and adjacent 0.5 inch of base metal were liquid penetrant examined and the entire weld overlay was ultrasonically examined for bond to

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Mr. Harold Denton
June 14, 1985
NG-85-2845
Page Two

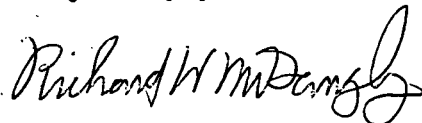
the base metal and to detect potential reflectors in the overlay and overlay to base metal interface. As a result of these examinations, no indications were noted and all overlays were determined acceptable.

Based on the information provided previously to your office and the post-repair inspection results, we have concluded that all weld overlay designs (excluding RRD-J7) meet the staff acceptance criteria delineated in Generic Letter 84-11. As a result of shrinkage stress concerns, the minimum thickness of the RRD-J7 weld overlay included the first overlay layer subject to the limitations addressed in Reference 1. With the successful deposition of the first layer, the overlay design provides the required Code margins referenced in Generic Letter 84-11. Based on this, we have concluded that our weld overlay repairs are acceptable for operation until our next refueling outage, which is currently scheduled for February 1987.

Pursuant to the guidance in Generic Letter 84-11, we will provide for your review and comment, a detailed plan regarding anticipated weld inspection activities during our next refueling outage. This plan will be provided at least 30 days prior to the next outage.

Should you require additional information please contact this office.

Very truly yours,



Richard W. McGaughy
Manager, Nuclear Division

RWM/SAR/rh*

cc: S. Reith
L. Liu
S. Tuthill
M. Thadani
NRC Resident Office
Commitment Control