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 AUTH. NAME AUTHOR AFFILIATION  
 MCGAUGHY, R. W. Iowa Electric Light & Power Co.  
 RECIP. NAME RECIPIENT AFFILIATION  
 DENTON, H. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Forwards Rev 1 to NEDC-31166, "Duane Arnold Energy Ctr  
 Reactor Pressure Vessel Surveillance Matls Testing,"  
 including comparison of irradiated plate & weld metal impact  
 curves w/compatible unirradiated baseline data.

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Iowa Electric Light and Power Company

July 30, 1986

NG-86-2587

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  
Reactor Pressure Vessel Surveillance Material  
Summary Technical Report, Revision 1

Reference: (1) Letter, R. McGaughy to H. Denton,  
Dated April 7, 1986, NG-86-1245  
(2) Letter, R. McGaughy to H. Denton,  
Dated January 11, 1985, NG-85-0003

File: A-105, B-11

Dear Mr. Denton:

Iowa Electric Light and Power Company provided you with the "Reactor Pressure Vessel Surveillance Material Summary Technical Report" in compliance with 10 CFR 50 Appendix H, Section III.A, via Reference (1). In Reference (1), we further notified you of original baseline and surveillance capsule test material incompatibility and that testing of appropriate archive baseline materials was underway.

Since that time, testing of these materials has been completed and the report previously submitted has been revised to include comparison with data from the unirradiated archive baseline materials. As such, please find enclosed five (5) copies of Revision 1 to the "Reactor Pressure Vessel Surveillance Material Summary Technical Report" in fulfillment of our commitment made in Reference (1).

The revised report now includes a comparison of irradiated plate and weld metal impact curves with compatible unirradiated baseline data. This comparison demonstrated an  $RT_{NDT}$  shift of 42°F for plate material and no discernible shift for the weld material. The  $RT_{NDT}$  shifts were compared to those predicted using Regulatory Guide 1.99, Revision 1. The plate material  $RT_{NDT}$  shift is greater than the predicted shift of 32°F, and weld material shift was less than the Regulatory Guide 1.99 prediction. The method used in calculating irradiation shifts versus effective full

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power years (EFPY) of operation was corrected to account for the surveillance test results of the plate material. Considering this calculational correction and the 20% lower end of life (EOL) fluence reported in Reference (1), the limiting EOL value for  $RT_{NDT}$  was determined to be 126°F. This value is identical to the value reported in Reference (2). Upper Shelf Energy (USE) values for both plate and weld materials are above the minimum limit of 50 ft-lbs. Thus, the 10 CFR 50 Appendix G criteria are met.

Additionally, since the limiting beltline material initial  $RT_{NDT}$  and shift determined in the attached report are identical to those used in Reference (2), no change to the operating limit curves developed in the Reference (2) report will be required. These curves, valid to 12 EFPY, are presently incorporated in the DAEC Technical Specifications, Section 3.6.

We are presently evaluating the subject report recommendations for Technical Specification changes. A proposed Technical Specification revision may be submitted as a result of this evaluation. Appropriate changes to the UFSAR will also be submitted in the 1987 update.

We remain available should you have any questions on this matter.

Very truly yours,



Richard W. McCaughy  
Manager, Nuclear Division

RWM/EKK/ta\*

Attachment: GE Report NEDC-31166, Rev. 1, "DAEC Reactor  
Pressure Vessel Surveillance Materials Testing"

cc: E. Kelenyi (w/o)  
L. Liu (w/o)  
L. Root (w/o)  
M. Thadani (w/o)  
NRC Resident Inspector (w/a)  
Mr. James G. Keppler (NRC Region III) (w/a)  
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