

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Forwards summary listing of ASME Section XI Class 1 welds scheduled for insp during next refueling outage. Outage currently scheduled to begin in mid Mar 1987. Requests NRC approval to continue operating w/weld overlays in place.

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Iowa Electric Light and Power Company

November 3, 1986

NG-86-3518

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

Plans for Inspection of Reactor Coolant Pressure
Boundary Piping During Cycle 8/9 Refueling Outage

- References:
- 1) Letter, D. Vassallo (NRC) to L. Liu (Iowa Electric) dated July 9, 1985
 - 2) Safety Evaluation Report, D. Vassallo (NRC) to L. Liu (Iowa Electric) dated August 6, 1985
 - 3) Letter, R. W. McGaughy (Iowa Electric) to H. R. Denton (NRC), dated June 14, 1985 (NG-85-2845)
 - 4) Letter, R. W. McGaughy (Iowa Electric) to H. R. Denton (NRC), dated June 7, 1985 (NG-85-2743)
 - 5) Letter, R. W. McGaughy (Iowa Electric) to H. R. Denton (NRC), dated May 24, 1985 (NG-85-2480)
 - 6) Letter, R. W. McGaughy (Iowa Electric) to H. R. Denton (NRC), dated May 3, 1985 (NG-85-1901)

File: A-107a, A-286, B-31c, SpF-118

Dear Mr. Denton:

In their letter dated July 9, 1985 (Reference 1), the NRC staff stated they had reviewed our piping inspection and repair program for the Duane Arnold Energy Center (DAEC) which was conducted during the Cycle 7/8 refueling outage. (The Cycle 7/8 refueling outage began February 2, 1985 and concluded on July 23, 1985). In addition, the Staff also requested that we apprise them of our plans for future inspections and/or modifications.

During the Cycle 7/8 Refueling Outage, a total of 177 welds in the reactor coolant piping system were ultrasonically inspected. In addition, 104 large-diameter welds in the recirculation piping system were treated with the

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induction- heating-stress-improvement (IHSI) procedure. Eleven recirculation piping welds were found either to be cracked or had reportable indications which were repaired by the weld overlay process. Subsequent to the review of the above information on the inspection process and the repairs performed, and our response to NRC Generic Letter 84-11, the Staff concluded the DAEC could be operated for at least one additional operating cycle.

As requested, Attachment 1 to this letter provides a summary listing of the ASME Section XI Class 1 welds which are scheduled for examination during our next refueling outage. This outage is currently scheduled to begin in mid-March of 1987. To aid in your review, the attached listing delineates the systems to be inspected, piping diameter or weld type, method of non-destructive examination which will be employed and piping material.

We also request that the NRC Staff again review References 2 through 6, which provided post-installation weld overlay inspection results, as we intend to seek NRC approval to continue operating with the weld overlays in place. It is our understanding that other facilities have requested and received similar approval. The weld inspections described in the attachment, which includes the weld overlays, should be completed by April 25, 1987. The results of these inspections will be transmitted to you shortly thereafter. For planning purposes, this schedule will allow the Staff approximately two weeks to review our request for continued operation prior to our mid-May restart date.

Should you require further information, please contact this office.

Very truly yours,



Richard W. McGaughey
Manager, Nuclear Division

RWM/MSG/dmb*

Attachment: 1) Summary of Welds to be Examined During Cycle 8/9 Outage

cc: M. Grim
L. Liu
L. Root
B. Gilbert
NRC Resident Office
Commitment Control No. 850195

1987 REFUELING OUTAGE INSERVICE INSPECTION SCHEDULE
CLASS 1 WELDS

| ITEM / SYSTEM NAME | LONG SEAM (LS) OR PIPE DIAM. | CARBON STEEL | | | STAINLESS STEEL | | | DISSIMILAR METAL | | |
|--|------------------------------|----------------|--------------------------------|------------|-----------------|--------------------------------|------------|------------------|--------------------------------|------------|
| | | TOTAL CS WELDS | QTY. SCHEDULED FOR EXAMINATION | | TOTAL SS WELDS | QTY. SCHEDULED FOR EXAMINATION | | TOTAL DS WELDS | QTY. SCHEDULED FOR EXAMINATION | |
| | | | VOL. (UT) | SURF. (MT) | | VOL. (UT) | SURF. (PT) | | VOL. (UT) | SURF. (PT) |
| <u>REACTOR PRESSURE VESSEL</u> | | | | | | | | | | |
| TOP HEAD MERIDIONAL HEAD FLANGE TO WELD | LS | | 1.7 FT | | | | | | | |
| CIRCUMFERENTIAL SHELL TO FLANGE WELD | LS | | 17.4 FT | | | | | | | |
| REACTOR VESSEL NOZZLES | LS | | 13.3 FT | 13.3 FT | | | | | | |
| | LS | | 17.4 FT | | | | | | | |
| | 2" | | | | 1 | 1 | | | | |
| | 4" | | 1 | | | | | | | |
| | 6" | | 1 | | | | | | | |
| | 10" | | 5 | | | | | | | |
| <u>MAIN STEAM 'A'</u> | | | | | | | | | | |
| | 2" | 5 | | | | | | | | |
| | 6" | 6 | 1 | 1 | | | | | | |
| | 20" | 20 | 2 | 2 | | | | | | |
| | 20"LS | 10 | | | | | | | | |
| | LUGS | 3 | | 1 | | | | | | |
| <u>MAIN STEAM 'B'</u> | | | | | | | | | | |
| | 2" | 4 | | | | | | | | |
| | 6" | 6 | | | | | | | | |
| | 20" | 24 | 2 | | | | | | | |
| | 20"LS | 12 | 2 | 2 | | | | | | |
| | LUGS | 5 | | 2 | | | | | | |
| <u>FEEDWATER 'A' & 'B' (COMMON)</u> | | | | | | | | | | |
| | 10" | 23 | 2 | 2 | | | | | | |
| | 16" | 10 | 1 | 1 | | | | | | |
| <u>CORE SPRAY 'A'</u> | | | | | | | | | | |
| | 8" | 19 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| <u>CORE SPRAY 'B'</u> | | | | | | | | | | |
| | 8" | 19 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| <u>HPCI-STEAM</u> | | | | | | | | | | |
| | 10" | 14 | 1 | 1 | | | | | | |
| <u>HPCI-WATER</u> | | | | | | | | | | |
| | 12" | 5 | 1 | 1 | | | | | | |
| <u>REACTOR WATER-CLEAN-UP-SUCTION</u> | | | | | | | | | | |
| | 4" | | | | 18 | 3 | 3 | | | |
| <u>RHR-HEADSPRAY</u> | | | | | | | | | | |
| | 4" | 34 | 3 | 3 | | | | | | |
| | 6" | 2 | | | | | | | | |
| | LUGS | 1 | | | | | | | | |
| <u>RHR - 18B</u> | | | | | | | | | | |
| | 4" | | | | 1 | | | | | |
| | 18" | 14 | 1 | 1 | 1 | 1 | | 1 | 1 | |
| | 18"WOL | | | | 1 | 1 | | | | |
| | 18"LS | | | | 1 | 1 | | | | |
| <u>RHR - 20A</u> | | | | | | | | | | |
| | 10" | | | | 1 | | | | | |
| | 20" | 16 | 1 | 1 | 1 | 1 | | 1 | 1 | |
| <u>RHR - 20-B</u> | | | | | | | | | | |
| | 20" | 16 | 1 | 1 | 1 | 1 | | 1 | 1 | |
| <u>RECIRCULATION PUMP 'A' & BYPASS</u> | | | | | | | | | | |
| | 4" | | | | 12 | 1 | 1 | | | |
| | 22" | | | | 18 | 18 | 1 | 1 | 1 | 1 |
| | LUGS | 1 | | | 3 | | 1 | 1 | | 1 |
| | 22" LS | | | | 20 | | 1 | | | |

1987 REFUELING OUTAGE INSERVICE INSPECTION SCHEDULE
CLASS 1 WELDS (CONTINUED)

| ITEM / SYSTEM NAME | LONG SEAM (LS) OR PIPE DIAM. | CARBON STEEL | | | STAINLESS STEEL | | | DISSIMILAR METAL | | |
|---|---|----------------|--------------------------------|------------|-------------------------------------|--------------------------------|-----------------------------|--------------------------|--------------------------------|-------------|
| | | TOTAL CS WELDS | QTY. SCHEDULED FOR EXAMINATION | | TOTAL SS WELDS | QTY. SCHEDULED FOR EXAMINATION | | TOTAL DS WELDS | QTY. SCHEDULED FOR EXAMINATION | |
| | | | VOL. (UT) | SURF. (MT) | | VOL. (UT) | SURF. (PT) | | VOL. (UT) | SURF. (PT) |
| <u>RECIRCULATION MANIFOLD 'A' & RISERS 'E' THROUGH 'H'</u> | 10" 10"LS 10"WOL 16" 16"LS 22" LUGS | | | | 24 4 4 4 2 1 2 | | 24 4 4 4 1 1 | 1 4 1 | 8 8 2 1 | 2 2 1 |
| <u>RECIRCULATION PUMP 'B' & BYPASS</u> | 4" 22" LUGS 22"LS | 2 | | 2 | 10 19 3 22 | | 1 19 1 1 | 1 1 1 | 2 2 1 | 2 1 |
| <u>RECIRCULATION MANIFOLD 'B' & RISERS 'A' THROUGH 'D'</u> | 10" 10"LS 10"WOL 16" 22" LUGS | | | | 24 4 3 4 1 3 | | 24 4 3 4 1 3 | 1 3 3 1 1 | 8 8 2 | 4 1 |
| <u>HEAD VENT</u> | 4" | 1 | 1 | 1 | | | | | | |
| <u>STAND-BY LIQUID CONTROL</u> | 1 1/2" | | | | 26 | 2 | 2 | | | |
| <u>MAIN STEAM - DRAIN (COMMON)</u> | 3" | 7 | 1 | 1 | | | | | | |
| <u>RPV NOZZLES (1N-VESSEL)</u> | 10" | | | | | | | 4* | 4 | 4 |
| <u>VESSEL INSTRUMENTATION</u> | 2" | | | | 2 | | 1 | 1 | | 1 |
| <u>CONTROL ROD DRIVE RETURN PLUS CRDL (2 1/2 FT. FROM NOZZLE)</u> | 2 1/2" 2 1/2" | | | | 2 1/2 FT PIPE SUR- FACE | 1 PIPE SURFACE | | 2* | 1 | 1 |
| NOTES: | | | | | | | | | | |
| *CS WELDS WITH SS CLADDING | | CS WELDS | UT | MT | SS WELDS | UT | PT | DIS- SIMILAR WELDS | UT | PT |
| | | 280 | 33 | 26 | 245 | 118 | 26 | 33 | 28 | 19 |
| | | | | | PLUS 1 SUR- FACE | PLUS 1 SUR- FACE | | 6* | 5 | 5 |
| | | 280 | 33 | 26 | 246 | 119 | 26 | 39 | 33 | 28 |