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ACCESSION NBR: 8705190381 DOC. DATE: 87/05/11 NOTARIZED: NO DOCKET #
 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331
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SUBJECT: Provides info re current & future plans to minimize potential drywell corrosion as requested in generic ltr 87-05.

SEE DRAWINGS

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Iowa Electric Light and Power Company

May 11, 1987
NG-87-1696

Mr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
Attn: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Response to Generic Letter 87-05
File: A-101b, A-107a, A-286a

Dear Mr. Murley:

The purpose of this letter is to provide the information regarding our current and future plans to minimize potential drywell corrosion as requested in Generic Letter 87-05.

The design of the sand cushion area at the Duane Arnold Energy Center (DAEC) uses an 18 gage galvanized sheet metal plate sealed to the drywell shell to cover the sand pocket. Any leakage of water into the air gap between the drywell and the surrounding concrete shield wall above the sheet metal plate is directed to the Torus Room basement via four 4-inch drain lines. If water does penetrate the sheet metal plate or seal and enters the sand pocket, four additional 2-inch sand-filled drain lines will drain the sand pocket to the Torus Room basement. Attachments 1 and 2 are drawings detailing these sand cushion drainage systems.

To determine if the drywell air gap area drain lines are functioning as designed, the four 4-inch drain lines were verified to be unplugged by running a "plumber's snake" through the entire length of the drain lines. The four 2-inch sand filled drain lines exiting the sand-pocket were visually inspected at the mesh screen caps for the presence of any water. No evidence of leakage was found. Beyond these actions, no inspections or preventive maintenance are considered to be necessary. It is highly unlikely that any material large enough to block the 4-inch drain lines could be inadvertently placed in the 3-inch wide drywell air gap.

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Additionally, future inspections of the 2-inch sand filled drain lines would not be useful, as any water leaking into the sand cushion area will be drained by the 4-inch drain lines before it enters the sealed sand pocket. The areas where the 2-inch and 4-inch lines drain are inspected periodically by Operations and Health Physics personnel, therefore, any water exiting these drain lines will be detected and appropriate actions to determine the source of the leakage will be taken.

The design of the drywell to reactor building refueling bellows prevents the leakage of water into the drywell air gap (see Attachments 3-6). Four 2-inch bellows area drain lines are seal welded to a carbon steel plate below the refueling bellows. Any leakage past the bellows area will be directed through 8-inch drain lines, which run concentric with the previously mentioned 2-inch lines for a large portion of their runs. A 2-inch lip between the air gap and the 8" drain lines prevents bellows leakage from entering the air gap. The 8-inch lines also serve to drain any other leakage past couplings in the refueling bellows drain lines. This leakage is subsequently directed past flow switches (FS-3421 A and B, and FS-3422 A and B) which will alarm when the leakage rate is 0.1 gallons per minute or greater. Upon receipt of an alarm, an operator is directed, by procedure, to determine and correct the cause of the excessive leakage. All of the above-mentioned drain lines direct water from the refueling cavity to the radwaste system.

Therefore, our design is adequate to prevent any leakage from the refueling cavity to the drywell air gap and no preventive maintenance or inspection activities are necessary to prevent water from reaching the sand cushion area.

The information listed in Table 1 of Generic Letter 87-05 is generally correct with regard to the DAEC. The original air gap filler material was Polyurethane foam, which was removed during original plant construction. However, there are Ethafoam rings embedded into the concrete on the outside of the drywell air gap.

Should you have any questions regarding this letter, please contact this office.

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This information is true and accurate to the best of my knowledge and belief.

IOWA ELECTRIC LIGHT AND POWER COMPANY

BY Richard W. McGaughy
Richard W. McGaughy
Manager, Nuclear Division



Subscribed and sworn to Before Me on
this 11th day of May, 1987.

Eileen M. Barber
Notary Public in and for the State of Iowa

RWM/NKP/pjv*

- Attachments:
- 1) Bechtel Drawing, BECH-C-475, Revision 3
 - 2) Bechtel Drawing, BECH-M-513, Revision 10
 - 3) Bechtel Drawing, BECH-C-490, Revision 3
 - 4) Bechtel Drawing, BECH-M-517, Revision 3
 - 5) Bechtel Drawing, BECH-M-524, Revision 4
 - 6) Bechtel Drawing, BECH-FSK-4300, Revision 3

cc: N. Peterson
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NRC Resident Office
Commitment Control No. 870048