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TO: Mr. Edson G. Case

FROM: Iowa Electric Light & Pwr. Co.
Cedar Rapids, Iowa
Lee Liu

DATE OF DOCUMENT: 12/30/77

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ENCLOSURE

License No. DPR-49 Appl for Amend: tech specs proposed change concerning reactor coolant leakage....

(7-P)

PLANT NAME: Duane Arnold
RJL 1/9/78

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SAFETY

FOR ACTION/INFORMATION

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# IOWA ELECTRIC LIGHT AND POWER COMPANY

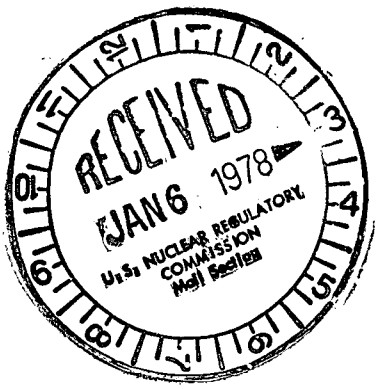
*General Office*

CEDAR RAPIDS, IOWA

December 30, 1977
IE-77-2342

LEE LIU
VICE PRESIDENT – ENGINEERING

50-331




Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Case:

Transmitted herewith in accordance with the requirements of 10CFR50.59 and 50.90 is an application for amendment of DPR-49 to incorporate proposed changes to the Technical Specifications (Appendix A to License) for the Duane Arnold Energy Center (DAEC).

The matters discussed herein have been the subject of telephone conversations between Mr. K. Meyer and Mr. R. Clark, NRC.

The NRC letter dated September 15, 1977 from Mr. George Lear requested that we:

1. Review all of the RCS pressure boundary piping and fitting material, including weld metal, at the DAEC to determine if it met the guidelines forwarded with the NRC letter.

2. Identify any materials that do not meet the guidelines.

3. Propose appropriate changes to our Technical Specifications to incorporate augmented inservice inspection requirements.

4. Provide plans for replacement of non-conforming "service-sensitive" lines.

5. Propose changes to the RCS leakage limits and surveillance requirements contained in our Technical Specifications.

Our detailed review of RCS pressure boundary piping is not complete; however, we have determined that we do have some non-conformance. As we will be submitting our Inservice Inspection program to you by March 1, 1978, we propose to include augmented inspection in that program rather than including it in the Technical Specifications. We will also provide the listing of non-conforming materials and any plans for replacement of non-conforming materials, if any, at that time.

The enclosed application proposes changes to the RCS leakage limits as requested. We have not incorporated your proposed Limiting Conditions for Operation (LCO) concerning the 2 GPM increase in unidentified leakage. An evaluation is necessary to determine if present instrumentation is capable of indicating the LCO or if modifications are

necessary. Our evaluation will be complete by April 1, 1978, and at that time we will amend the enclosed application or provide you with a schedule for making modifications and amending the enclosed application.

This application consisting of proposed change RTS-103 has been reviewed and approved by the DAEC Operations Committee and the DAEC Safety Committee. This application does not involve a significant hazards consideration.

Three signed and notarized originals and 37 additional copies of this application are transmitted herewith. This application, consisting of the foregoing letter and enclosures hereto, is true and accurate to the best of my knowledge and belief.

IOWA ELECTRIC LIGHT AND POWER COMPANY

BY: _____

Lee Liu
Vice President, Engineering

Subscribed and Sworn to me on this 30th day of December, 19 77.

_____

Notary Public in and for the State of Iowa

NOTARIAL SEAL IOWA
SUE E. SCOTT
My Commission Expires
September 30, 1978

LL/KAM/gan
Enclosure
cc: K. Meyer
D. Arnold
R. Lowenstein
R. Clark (NRC)
L. Root
File A-103, B-11a

PROPOSED CHANGE RTS-103 TO DAEC TECHNICAL SPECIFICATIONS

## I. Affected Technical Specifications

Appendix A of the Technical Specifications for the DAEC (DPR-49) provides as follows:

Specifications 3.6.C and 4.6.C contain Limiting Conditions for Operation, Surveillance Requirements and Bases pertaining to reactor coolant leakage.

## II. Proposed Changes in Technical Specifications

The licensees of DPR-49 propose the following changes in the Technical Specifications set forth in I above:

Delete the present Specifications 3.6.C and 4.6.D on pages 3.6-5 and 3.6-20 through 3.6-22 and add the attached sheets.

## III. Justification for Proposed Change

This proposed Technical Specification change is being submitted in accordance with a request from the Nuclear Regulatory Commission (Letter; Mr. G. Lear, Chief, Operating Reactors Branch #3, Division of Operating Reactors, to Mr. D. Arnold, President, Iowa Electric Light and Power Company; September 16, 1977).

## IV. Review Procedure

This proposed change has been reviewed by the DAEC Operations Committee and Safety Committee which have found that this proposed change does not involve a significant hazards consideration.

the system design control document gives the limiting trip point for operation. This additional margin has been established so that with proper operation of the instrumentation the safety limits will never be exceeded. The inequality sign which may be given merely signifies the preferred direction of operational trip setting.

3. Limiting Conditions for Operation (LCO)

The limiting conditions specify the minimum acceptable levels of system performance necessary to assure safe startup and operation of the facility. When these conditions are met, the plant can be operated safely and abnormal situations can be safely controlled.

4. Leakage

a. Identified Leakage shall be:

(1). Leakage into collection systems, such as pump seal or valve packing leaks, that is captured and conducted to a sump or collecting tank, or

(2). Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of the leakage detection systems or not to be Pressure Boundary Leakage.

b. Pressure Boundary Leakage shall be leakage through a non-isolable fault in a reactor coolant system component body, pipe wall or vessel wall.

c. Unidentified Leakage shall be all leakage which is not Identified Leakage.

| LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS |
|---|---|
| C. Coolant Leakage | C. Coolant Leakage |
| 1. Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above 212°F, reactor coolant system leakage shall be limited to: | 1. Reactor coolant system leakage shall be demonstrated to be within limits by: |
| a. No known pressure boundary leakage. | a. Monitoring the primary containment sump level and flow rates at least once per 12 hours. |
| b. 5 GPM unidentified leakage. | b. Monitoring the primary containment atmospheric particulate radioactivity at least once per 12 hours. |
| c. 20 GPM identified leakage. | |
| 2. With any pressure boundary leakage, be in at least Hot Shutdown within 12 hours and in Cold Shutdown within the next 24 hours. | |
| 3. With any reactor coolant system leakage greater than any one of the limits specified in b. or c. above, reduce the leakage rate to within the limits within 4 hours or be in at least Hot Shutdown within the next 12 hours and in Cold Shutdown within the following 24 hours. | |
| D. Safety and Relief Valves | D. Safety and Relief Valves |
| 1. During reactor power operating conditions and prior to reactor startup from a Cold Condition, or whenever reactor coolant pressure is greater than atmospheric and temperature greater than 212°F, both safety valves and the safety modes of all relief valves shall be operable, except as specified in 3.6.D.2. | 1. At least one safety valve and three relief valves shall be checked or replaced with bench checked valves once per operating cycle. All valves will be tested every two cycles.<br><br>The setpoint of the safety valves shall be as specified in Specification 2.2. |

3.6.C & 4.6.C BASES:

Coolant Leakage

Allowable leakage rates of coolant from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes and on the ability to make up coolant system leakage in the event of loss of offsite a-c power. The normally expected background leakage due to equipment design and the detection capability for determining coolant system leakage were also considered in establishing the limits.

Leakage less than the magnitude specified can be detected reasonably in a matter of a few hours utilizing the available leakage detection schemes, and if the origin cannot be determined in a reasonably short time the plant should be shut down to allow further investigation and corrective action.

The total leakage rate consists of all leakage, identified and unidentified, which flows to the drywell floor drain and equipment drain sumps.

The capacity of the drywell floor sump pumps is 50 gpm and the capacity of the drywell equipment sump pumps is also 50 gpm. Removal of 25 gpm from either of these sumps can be accomplished with margin.

The primary containment atmosphere radioactivity detector provides a sensitive and rapid indication of increased nuclear system leakage. The primary containment environment is continuously sampled from one of three locations which are chosen to provide both a representative gas mixture and an indication of the location of the leakage.

The sample air undergoes three separate processes in which the radioactive noble gas, halogen, and particulate contents are determined. This system is thus a three channel monitoring system. The processed air is returned to the drywell.

The primary containment atmosphere radioactivity detector serves as a sensitive, reliable backup to the other methods of leak detection. It is anticipated that the particulate detector will be the primary indication of leakage, with the halogen and noble gas detectors serving as indication of the primary containment environment if primary containment venting is required. These detectors in conjunction with an isotopic analysis can be used to indicate whether the detected leak is from a steam or water system.