

50-331

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## ENCLOSURE

APPLICATION FOR AMDT. TO INCORPORATE A PROPOSED  
CHANGE IN THE TECH. SPEC. TO ALLOW LIMITING  
CONDITIONS FOR OPERATION AND SURVEILLANCE REQUI-  
REMENTS FOR THE DIFFERENTIAL PRESSURE TO BE  
MAINTAINED BETWEEN THE DRYWELL AND THE PRESSURE  
SUPPRESSION CHAMBER.....

( 7P)

ACKNOWLEDGED

40 CYS ENCL Rec'd

## SAFETY

## FOR ACTION/INFORMATION

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PROJECT MANAGER:

LIC. ASST. :

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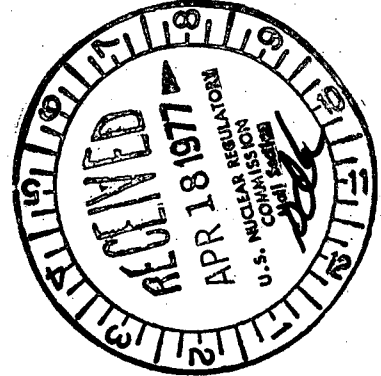
# IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office  
CEDAR RAPIDS, IOWA

April 14, 1977  
IE-77-757

LEE LIU  
VICE PRESIDENT - ENGINEERING

## REGULATORY DOCKET FILE COPY



Mr. B. C. Rusche, Director  
Office of Nuclear Reactor Regulation  
Nuclear Regulatory Commission  
Washington, D.C. 20545

Dear Mr. Rusche:

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

This proposed change (RTS-75A) has been reviewed and approved by the DAEC Operations Committee and the DAEC Safety Committee and does not involve a significant hazards consideration.

This application replaces RTS-75 included in our November 3, 1976 transmittal. This change reflects the addition of a 10 psid Drywell/Torus p indicator with an accuracy of  $\pm 0.5\%$  and revision of the torus water level transmitters to  $-10"$  to  $+10"$  w.c. Other descriptive material in our November 3, 1976 transmittal remains valid.

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

Lee Liu  
Vice President, Engineering

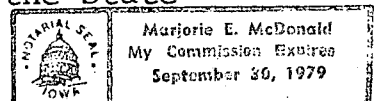
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Encls.

cc: D. Arnold  
R. Lowenstein  
J. Keppler (NRC)  
L. Root  
File A-117

Sworn and Subscribed to before me on  
this 14th day of April, 1977.

Marjorie E. McDonald  
Notary Public in and for the State  
of Iowa.



77109002

## PROPOSED CHANGE RTS-75A TO DAEC TECHNICAL SPECIFICATIONS

### I. Affected Technical Specifications

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

The present Technical Specifications do not contain Limiting Conditions for Operation and Surveillance Requirements for the differential pressure to be maintained between the drywell and the pressure suppression chamber.

### II. Proposed Changes in Technical Specifications

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

Add new Limiting Conditions for Operation, Surveillance Requirements and Bases, Specifications 3.7.A.7 and 4.7.A.7, as shown in the attached, add the Drywell/Torus  $\Delta P$  transmitter to Tables 3.2-F and 4.2-F, and revise the range of the Suppression Chamber Water Level recorder.

Change the numbering of the present Specification "3.7.A.7" to "3.7.A.8".

### III. Justification for Proposed Change

This change is proposed in response to requests 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; dated September 30, 1976; and Letter; Mr. K. R. Goller, Assistant Director for Operating Reactors, to Mr. D. Arnold, President, Iowa Electric Light and Power Company; dated February 4, 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.

## LIMITING CONDITIONS FOR OPERATION

must be taken out of power operation.

7. Drywell-Suppression Chamber Differential Pressure

- a. Differential pressure between the drywell and suppression chamber shall be maintained at equal to or greater than 1.30 psid except as specified in (1) and (2) below:
- (1) Within the 24-hour period subsequent to placing the reactor in the Run Mode following a shutdown, the differential shall be established. The differential may be decreased to less than 1.30 psid 24 hours prior to a shutdown.
- (2) This differential may be decreased to less than 1.30 psid for a maximum of four hours during required operability testing of the HPCI system pump, the RCIC system pump, the drywell-pressure suppression chamber vacuum breakers, and the suppression chamber to reactor building vacuum breakers, or to add additional nitrogen to the containment should it be necessary.
- b. If the differential pressure of specification 3.7.A.7.a cannot be maintained, an orderly shutdown shall be initiated and the reactor shall be in the Hot Shutdown condition within 12 hours and the Cold Shutdown condition within the following 24 hours.

## SURVEILLANCE REQUIREMENTS

functionally tested once per operating cycle in conjunction with specification 4.7.A.6.a. Should one of the two H<sub>2</sub> or O<sub>2</sub> analyzers serving the drywell or suppression pool be found inoperable, the remaining analyzer of the same type serving the same compartment shall be tested for operability once per week until the defective analyzer is made operable.

7. Drywell-Suppression Chamber Differential Pressure

- a. The pressure differential between the drywell and suppression chamber shall be recorded at least once each shift.

## LIMITING CONDITIONS FOR OPERATION

## SURVEILLANCE REQUIREMENTS

- | LIMITING CONDITIONS FOR OPERATION  | SURVEILLANCE REQUIREMENTS |
|--|---------------------------|
| 8. If the specifications of 3.7.A.1 through 3.7.A.5 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours. |                           |

TABLE 3.2-F  
SURVEILLANCE INSTRUMENTATION

Minimum No. of Operable Instrument Channels	Instrument	Type Indication and Range	Action
2	Reactor Water Level	Recorder, Indicator 0-60"	(1) (2) (3)
2	Reactor Pressure	Recorder, Indicator 0-1200 psig Indicator	(1) (2) (3)
2	Drywell Pressure	Recorder, 0-80 psia Indicator	(1) (2) (3)
2	Drywell Temperature	Recorder 0-400°F Indicator	(1) (2)
2	Suppression Chamber Temperature	Recorder, 0-400°F Indicator	(1) (2) (3)
2	Suppression Chamber Water Level	Recorder -10"/0/+10" H <sub>2</sub> O	(1) (2) (3)
1	Control Rod Position	Process Com- puter, Full Travel	
1	Neutron Monitoring	SRM, IRM, LPRM 0 to 100% power	(1) (2) (3) (4)
1	Drywell/Torus ΔP	Alarm	
1	Drywell/Torus ΔP	Indicator, 10 psid	
1	Drywell Pressure	Indicator, 0-50 psig	
1	Torus Pressure	Indicator, 0-100 psig	

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TABLE 4.2-F

## MINIMUM TEST AND CALIBRATION FREQUENCY FOR SURVEILLANCE INSTRUMENTATION

<u>Instrument Channel</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
1) Reactor Level	Once/6 months	Once Each Shift
2) Reactor Pressure	Once/6 months	Once Each Shift
3) Drywell Pressure	Once/6 months	Once Each Shift
4) Drywell Temperature	Once/6 months	Once Each Shift
5) Suppression Chamber Temperature	Once/6 months	Once Each Shift
6) Suppression Chamber Water Level	Once/6 months	Once Each Shift
7) Control Rod Position	NA	Once Each Shift
8) Neutron Monitoring	Prior to Reaching 20% Power and once per day when in Run Mode (APRM Gain Adjust when in Run Mode)	Once Each Shift (When in Startup or Run Mode)
9) Drywell/Torus $\Delta P$ Alarm	Once/6 months	Once Each Shift
10) Drywell/Torus $\Delta P$ Indicator	Once/6 months	Once Each Shift
11) Drywell Pressure	Once/Operating Cycle	Once Each Shift
12) Torus Pressure	Once/Operating Cycle	Once Each Shift

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Due to the nitrogen addition, the pressure in the containment after a LOCA could possibly increase with time. Under the worst expected conditions the containment pressure will reach 30 psig in approximately 70 days. If and when that pressure is reached, venting from the containment shall be manually initiated. The venting path will be through the Standby Gas Treatment System in order to minimize the offsite dose.

Following a LOCA, periodic operation of the drywell and torus sprays may be used to assist the natural convection and diffusion mixing of hydrogen and oxygen.

The drywell/torus differential pressure is implemented to provide a load to capacity ratio of no greater than 0.5 for the torus support structure for post-LOCA hydrodynamic loads. Design details are described in References 5 and 6.

#### 7. Standby Gas Treatment System and Secondary Containment

The secondary containment is designed to minimize any ground level release of radioactive materials which might result from a serious accident. The reactor building provides secondary containment during reactor operation, when the drywell is sealed and in service; the reactor building provides primary containment when the reactor is shut down and the drywell is



3.7.A & 4.7.A REFERENCES

1. Section 14.6 of the FSAR.
2. ASME Boiler and Pressure Vessel Code, Nuclear Vessels, Section III, maximum allowable internal pressure is 62 psig.
3. Staff Safety Evaluation of DAEC, USAEC, Directorate of Licensing, January 23, 1973.
4. 10 CFR 50.54, Appendix J, Reactor Containment Testing Requirements, Federal Register, August 27, 1971.
5. DAEC Short-Term Program Plant Unique Analysis, NUTECH Doc. No. IOW-01-065, August 1976.
6. Supplement to DAEC Short-Term Program Plant Unique Analysis, NUTECH Doc. No. IOW-01-071, October 1976.