

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8304040124 DOC. DATE: 83/03/28 NOTARIZED: NO DOCKET #:  
 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331  
 AUTH. NAME: AUTHOR AFFILIATION  
 ROOT, L.D. Iowa Electric Light & Power Co.  
 RECIPIENT NAME: RECIPIENT AFFILIATION  
 DENTON, H. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards final responses to 810407 request for addl info on request for Tech Spec amend re single recirculation loop operation. Recirculation sys Controls will be placed in manual mode to eliminate need for control sys evaluation.

DISTRIBUTION CODE: A0015 COPIES RECEIVED: LITR 1 ENCL 1 SIZE: 3  
 TITLE: DR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LITR ENCL	RECIPIENT ID CODE/NAME	COPIES LITR ENCL
	NRR DRB2 SCI 01	7 7		
INTERNAL:	ELD/HQS2	1 0	NRR/DE/MTEB	1 1
	NRR/DL DIR	1 1	NRR/DL/DRIAB	1 0
	<del>NRR/DSI/MEIB</del>	1 1	NRR/DSI/RAB	1 1
	REG FILE 04	1 1	RGV3	1 1
EXTERNAL:	ACRS 09	6 6	LPDR 03	1 1
	NRC PDR 02	1 1	NSIC 05	1 1
	NTIS	1 1		

TOTAL NUMBER OF COPIES REQUIRED: LITR 25 ENCL 23

Iowa Electric Light and Power Company

March 28, 1983

NG-83-1039

LARRY D. ROOT  
ASSISTANT VICE PRESIDENT  
NUCLEAR GENERATION

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  
Single Loop Operation for the Duane Arnold Energy Center

Dear Mr. Denton:

The attachment to this letter provides the final responses to the request for additional information in Mr. Ippolito's letter to Mr. Arnold, dated April 7, 1981 on our submittal for a technical specification amendment on single recirculation loop operation.

Should you have further questions, please contact this office.

Very truly yours,

*R. W. McLaughlin*

*for* Larry D. Root  
Assistant Vice President  
Nuclear Generation

LDR/RAB/dmh\*  
Attachment

cc: R. Browning  
D. Arnold  
L. Liu  
S. Tuthill  
F. Apicella  
NRC Resident Office

8304040124 830328  
PDR ADOCK 05000331  
P PDR

A001

IOWA ELECTRIC RESPONSE TO NRC  
REQUEST FOR ADDITIONAL INFORMATION  
ON SINGLE LOOP OPERATION

The following is the Iowa Electric response to the Commission's request for additional information on single loop operation (SLO) at the Duane Arnold Energy Center (re: letter, Thomas Ippolito to Duane Arnold, "Request for Additional Information, Duane Arnold Energy Center, Single Loop Operation," Docket No. 50-331, April 7, 1981.)

NRC Question #4

Describe how the change from normal two recirculation cooling loop operation to one loop operation would be accomplished, with what physical and administrative controls, and while complying with branch technical position EICSB 12 (attached) regarding multiple setpoints and their control, and with IEEE STD. 279-4.15.

IE Response

In order to ensure conformance with the assumptions used in the GE analysis of SLO at DAEC, Iowa Electric proposes to operate under the following restrictions:

- 1) The suction valve will be closed and electrically isolated in the inoperable recirculation loop per proposed Technical Specification 3.6.F.2.C. This is to prevent degradation of LPCI flow during LOCA events.
- 2) DAEC does not have equalizer lines between the A and B loop jet pump risers, thus the requirement that the valves be verified to be closed is not applicable.
- 3) The recirculation system controls will be placed in the manual mode per proposed Technical Specification 3.6.F.2.d., thereby eliminating the need for a control systems evaluation.
- 4) The steady state thermal power level will not exceed 50% of the rated value, per proposed Technical Specification 3.6.F.2.b.
- 5) The settings for the Rod Block Monitor (RBM), APRM Rod Block and Scram flow-biased setpoints will be modified, per the proposed Technical Specifications 2.1.A.2, 2.1.A.3 and 3.2.C.1 and will be implemented by the appropriate adjustment in APRM gain factor, per Surveillance Test Procedure (STP) 42A001, Item 4.2.K.6. Setdown of Rod Block and Scram setpoints by amplifier gain adjustment is an accepted procedure per Amendment No. 30 to the DAEC Technical Specifications.
- 6) The fuel operating limits (MCPR and MAPLHGR) will be adjusted for SLO in the Technical Specifications, Sections 1.1.A, 3.12.A, 3.12.C. The Minimum Critical Power Ratio (MCPR) Safety Limit will be increased by 0.03 and the Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) limits will be reduced by 30%.

- 7) Increased surveillance requirements on core plate  $\Delta P$  and APRM flux noise will be implemented per proposed Technical Specifications 4.6.F.2 and 2.1.A.4, respectively.

NRC Question #6

Describe changes made to the flow computer to automatically account for magnitude and sense change for reverse flow in the idle loop jet pumps during single loop operation.

IE Response

No changes are necessary to account for reverse flow in the idle jet pumps as the existing circuitry will subtract this flow when the recirculation pump is deactivated. The coefficient of 0.95 applied to the reverse jet pump flow, to account for the difference in flow coefficient between forward and reverse flow, is accounted for in the calibration of the flow summer amplifier gains.