

Iowa Electric Light and Power Company

August 15, 1980
LDR-80-240

LARRY D. ROOT
ASSISTANT VICE PRESIDENT
NUCLEAR GENERATION

Mr. James G. Keppler, Director
Office of Inspection and Enforcement
Region III
Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Duane Arnold Energy Center
Subject: IE Bulletin 80-17, Supplement 1 Response
File: A-101a, BN 80-17, NRC-MF

Dear Mr. Keppler:

We are submitting the information herein to complete our response to Supplement 1 of the subject IE Bulletin. The response to Item A requirements of the Bulletin was contained in our submittal dated August 5, 1980, LDR-80-224. This letter contains our response to Item B requirements.

Item B1: Install by September 1, 1980 a system to continuously monitor water levels in all scram discharge volumes. Continuous recording and alarm features must be included in the design. Consideration should be given to use of diverse level sensors in this (these) system(s). The design installed should represent the design with the highest level of reliability compatible with completion of installation by September 1, 1980. Provide a written description of the system design to the NRC Regional Office.

If installation by September 1, 1980 is not possible, by August 15, 1980, submit to the NRC Regional Office:

- 1) Documentation in detail why the installation cannot be completed by 9/1/80.
- 2) A commitment to a firm schedule for installation.
- 3) A commitment to equipment changes and/or surveillance requirements in addition to those now in effect that will provide adequate assurance of SDV operability in the interim until installation is completed.

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Response:

Iowa Electric believes that the above requirements are most appropriate for BWR's whose SDV Systems are like those of Brown's Ferry 3; i.e., scram discharge headers are separated by (long) runs of small diameter piping from the instrument volumes on which are mounted the scram switches. Not all BWR's, however, are configured in this way.

The DAEC has two instrument volumes (9.5" I.D.) each with scram switches which are adjacent to and below their respective scram discharge headers (7.6" I.D.) and are connected to the headers with piping of diameter equal to that of the headers (7.6" I.D.). Please see the as-built drawings provided in our August 5th submittal. This relatively short, full diameter connection and continuous slope downward toward each instrument volume provides hydraulically immediate communication and precludes any possibility for loop seals or flow restriction/blockage to the instrument volume. We consider then, that each header/instrument volume configuration constitutes a single volume for the purposes of Item B1 above.

The Item above requires that the design include continuous monitoring, recording and alarm features. We submit that the existing instrumentation on each instrument volume provides these required features as follows:

A total of six level switches are provided on the two, instrument volumes as described in our earlier submittal. These switches perform the function of "monitoring" water level in that if any is tripped, a knowledge of the current water level in the instrument volume is known. A "recording" function is provided in that the four scram level switches and rod block switch each provide a computer record whenever any of them is tripped. The "alarm" feature is provided on an annunciator panel through the trip of the "3 gallon" instrument volume level switch, the "rod withdrawal block" (29 gallon) level switch or any of the scram switches.

The Item further requests that consideration be given to diversity and high reliability. IE Bulletin 80-14 (to which we responded on July 22, 1980) expressed concern regarding degradation of function due to damage to the level switches. The DAEC has not experienced any such damage or functional failure of the six switches which are installed. It is our understanding the investigations into this situation are continuing with tentative, initial conclusions being that acoustic and/or hydro-pneumatic transients in the SDV during

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the first few seconds of a scram are causing such damage. Although no such failures have occurred at the DAEC, we will, prior to September 1, 1980 revise operating procedures to require surveillance testing of these switches following each reactor scram from rated pressure to verify the integrity of this instrumentation.

Item B2: Perform a study of potential designs for improving the venting system for the scram discharge volumes and submit a description to NRC by September 1, 1980. Improvements such as providing redundant, independent vent for each significant volume in the system or locally installing vacuum breakers close to each such volume should be considered (some plants already include a design which vents locally to atmosphere). Include an estimate of the time that would be required to accomplish these modifications in your report to be submitted to the NRC Regional Office. We have been told that meetings have already been scheduled by GE to discuss their proposals in this area with licensees.

Response:

Our present SDV vent piping vents the entire SDV system through one vent valve and the vent valve discharge is open to the reactor building atmosphere via a dedicated line. We believe that from the standpoints of both system safety function (scram) and draining the system after scram reset, this configuration is adequate. In our opinion, changes such as redundant, independent vents or vacuum breakers will not increase the capability of the system to provide the safety function.

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

IOWA ELECTRIC LIGHT AND POWER COMPANY

BY Larry D. Root

Larry D. Root
Assistant Vice President
Nuclear Generation

LDR/BE/mz

cc: D. Arnold
L. Liu
S. Tuthill
K. Meyer
D. Mineck
D. Wilson
J. Van Sickle
D. Tooker

Subscribed and sworn to before me on this
15th day of August, 1980.

Shirley A. Rodenberger
Notary Public in and for the
State of Iowa

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cc: U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Division of Reactor Operations Inspection
Washington, D.C. 20555

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c/o Document Management Branch
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