Iowa Electric Light and Power Company

July 16, 1984
NG-84-2859

Mr. James G. Keppler
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Response to IE Bulletin 84-02

References: 1. Letter, D. Mineck to J. Keppler, DAEC-83-731, dated September 16, 1983

2. Confirmatory Action Letter, J. Keppler to L. Liu, dated September 21, 1983.

File: A-101a

Dear Mr. Keppler:

This letter is provided in response to IE Bulletin 84-02 concerning General Electric Type HFA Relay failures. The attachment to this letter addresses the bulletin specifically and outlines Iowa Electric's plans to resolve the relay problem.

Our approach to this problem has been modified since our letter, (reference 1) was sent. We are no longer planning to replace all HFA relays as stated in that letter and confirmed by your letter, (reference 2). As, a result of our investigation and evaluation, we have concluded that it is unnecessary to replace the Lexan core deenerigized relays since they have not experienced the same failure mechanism as the other relays and they have a good performance history. We have replaced and will continue to replace the nylon and Lexan energized relays and the nylon deenergized relays as detailed in the attachment to this letter. This approach is consistent with the recommendations of the subject bulletin.

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Approximately 62 hours was spent in the preparation of this letter and attachment and 60 hours in the research for that attachment. This response 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 16th day of July 1984.

Kathleen M. Furman
Notary Public in and for the State of Iowa

RWM/MJM/dmb*
Attachment

cc: M. Murphy
L. Liu
S. Tuthill
M. Thadani
NRC Resident Office
Commitment Control Nos. 84-0073, 82-0452

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20055

DUANE ARNOLD ENERGY CENTER
Response to NRC IE Bulletin 84-02

General:

The following responses address action items 1a, 1b, 1c, and 1d of the subject bulletin regarding replacement/inspection of G.E. type HFA relays.

Item No. 1a.

Develop plans and schedules for replacing (1) nylon or Lexan coil spool-type HFA relays used in normally energized safety-related applications and (2) nylon coil spool-type HFA relays used in normally de-energized safety-related applications. The replacement relays and any replacements made in the future should meet the requirements of the applicable IEEE standards. The replacement program for energized and de-energized relays should be performed on a "best efforts" basis during plant outages of sufficient duration. The entire replacement program should be completed within two years from the date of this bulletin.

The replacement schedule should consider the following recommended priority:

Nylon or Lexan normally energized in the reactor trip system
Nylon or Lexan normally energized in other safety-related applications
Nylon normally de-energized in the reactor trip system
Nylon normally de-energized in other safety-related applications

Response to Item 1a:

i) Iowa Electric has completed the replacement of the following existing safety-related, normally energized G.E. type HFA 51 series relays using Nylon or Lexan as coil spool material with the new G.E. century series HFA relays at the DAEC. These relays are in the following systems:

Reactor Protection System (RPS)*
Primary Containment Isolation System (PCIS)
Automatic Depressurization System (ADS)
High Pressure Coolant Injection System (HPCI)

*Exception: We will not replace DC energized relays K17A and K17B (GE model 12HFA65D69F) which, according to GE, are not affected by GE SIL No. 44 and Supplements 1, 2, 3, and 4.

ii) All other existing safety-related, normally energized G.E. type HFA 51 series relays using Nylon or Lexan as coil spool material will be replaced with the new G.E. century series HFA relays

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during the next (cycle 8) refueling outage. These relays are in the following systems:

Residual Heat Removal System (RHR)
4KV Essential Switchgear 1A3 and 1A4
Relay Panels 1C351 and 1C352

iii) Iowa Electric does not have safety-related, normally de-energized G.E. type HFA 51 series relays using Nylon as coil spool material in the Reactor Protection System at the DAEC.

iv) All other existing safety-related, normally de-energized G.E. type HFA 51 series relays using Nylon as coil spool material will be replaced with the new G.E. century series HFA relays during the cycle 8 refueling outage. These relays are in the following systems:

Reactor Core Isolation Cooling (RCIC)
HVAC: Turbine Building and Control Room
Standby Gas Treatment
HVAC: Reactor Building and Main Plant
Essential Switchgear 1A3
Turbine and Generator Relays

Item No. 1b:

During the period before relay replacement, develop and implement surveillance plans that include:

(1) Monthly functional tests of all reactor trip system normally energized relays that verify relay contacts change state when the relay coil is de-energized.

(2) Visual inspections of all safety-related normally energized relays as soon as practical upon receipt of this bulletin. Thereafter, similar inspections should be accomplished in conjunction with the monthly functional test. These visual inspections should verify that relay coils are not deteriorating (e.g., inspect coil bobbins for visible cracks or melting), and should confirm cleanliness of the relay pole pieces.

Response to Item 1b:

(1) Since Iowa Electric has already completed the replacement of all existing safety-related, normally energized G.E. type HFA 51 series relays using Nylon or Lexan as coil spool material with the new G.E. century series HFA relays in the Reactor

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Protection System, monthly functional tests recommended by the bulletin are not required. However, functional testing of the Reactor Protection System is being governed by the surveillance requirements of the DAEC Technical Specifications.

(2) Iowa Electric had performed a visual inspection of all existing G.E. type HFA relays prior to receipt of this bulletin. As recommended by the bulletin, monthly visual inspections will begin this month (July, 1984) and continue for the remaining 14 safety-related, normally energized relays until they are replaced during the cycle 8 refueling outage. This inspection is governed by procedure which specifies acceptance criteria and documents inspection results.

Item No. 1c:

Provide a basis for continuing operation for the period of time until the normally energized relays are replaced. This basis should include a discussion of those measures addressed in Items 1a and 1b and any other preventive and/or corrective measures taken or planned.

Response to Item 1c:

Our corrective and preventive actions initiated include the following:

i) Iowa Electric has completed the replacement of 135 existing safety-related, normally energized G.E. type HFA 51 series relays with the new G.E. century series HFA relays at the DAEC. These relays are in the following systems:

Reactor Protection System (RPS)
Primary Containment Isolation System (PCIS)
Automatic Depressurization System (ADS)
High Pressure Coolant Injection System (HPCI)

ii) Iowa Electric will replace the remaining 14 safety-related, normally energized G.E. type HFA 51 series relays with the new G.E. century series HFA relays during the cycle 8 refueling outage. These relays are in the following systems:

Residual Heat Removal System (RHR)
4 KV Essential Switchgear 1A3 and 1A4
Relay Panels 1C351 and 1C352

iii) As recommended by the bulletin, monthly visual inspections will continue for the relays identified in paragraph (ii) above until they are replaced.

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Based on the above, we conclude that continued operation is justified.

Item No. 1d:

Provide a written report of the above actions, including schedules for completion. This report is to be submitted to the NRC within 120 days of receipt of this bulletin.

Response to Item 1d:

A design change package for replacement of the relays has already been issued to the DAEC, and we intend to complete the replacement of the remaining relays identified in paragraph iv of response to item 1a, during the cycle 8 refueling outage.