



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

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BOARD, NRR

OCT 12 1983

MEMORANDUM TO: E. L. Jordan, Director, Division of Emergency Preparedness
and Engineering Response

FROM: R. L. Spessard, Director, Division of Engineering, RIII

SUBJECT: REVIEW OF HFA RELAY FAILURES

This is in response to a request by Mr. Wolfgang Laudan to C. C. Williams and A. Gautam of Region III for information and recommendations regarding considerations for the review of HFA relay failure resolution.

Based on several communications between Region III, NRR, Region III licensees and other NRC regional offices, we believe that the following considerations should be addressed.

A. Failure Modes

Did varnish on coils melt due to:

- . Shorts within the coil prior to aging of coil?
- . High ambient temperature in enclosures?
- . Any over current conditions in the circuit?
- . Defects in coil spool?
- . Debris?

B. Inspection

- . Are current visual inspection procedures adequate or are other reliable testing procedures required?
- . Should reliable inspection procedures be in accordance with manufacturers recommendations, including other (NRC) considerations?
- . What is a reliable frequency of inspection (daily, monthly, etc.) for these relays?
- . Should normally deenergized relays as well as normally energized relays be inspected and how often?

? value of functional testing; frequency.

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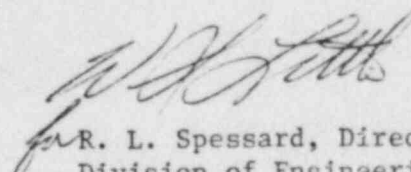
C. Corrective Action

- . Is replacement of HFA coils adequate or is it necessary to replace entire relays with "Century Series" relays? What is the difference between HFA and Century relays?
- . Should an analysis be required from licensee in terms of the design adequacy of these relays relative to HFA relay installations in the plant?
- . Develop adequate maintenance or inspection/testing procedures for these relays.

D. Logistics of Availability

- . Whatever action NRC requires of industry should take into account the availability of replacement parts.

Since being notified of failures at Duane Arnold, Region III has requested Iowa Electric Light and Power Company to address the above areas in general. Copies of these communications are enclosed for your review. We shall continue to forward all appropriate information on this matter.


for R. L. Spessard, Director
Division of Engineering

Enclosures: As Stated

cc w/encls:

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