



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 25, 1988

Docket Nos. 50-259/260/296  
50-327/328  
50-390/391  
50-428/429

TAC 73955  
73956

MEMORANDUM FOR: B. D. Liaw, Assistant Director  
for Technical Programs  
TVA Projects Division  
Office of Special Projects

FROM: Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

SUBJECT: SAFETY EVALUATION REPORT - TVA'S RESPONSE TO BULLETIN 88-03,  
GE HFA RELAYS

The staff issued NRC Bulletin 88-03, "Inadequate Latch Engagement in HFA Type Latching Relays Manufactured by General Electric (GE) Company," on March 10, 1988. The purpose of the Bulletin was to request that licensees perform an inspection to ensure all GE latching type HFA relays in Class 1E applications have adequate latch engagement and replace or repair those that do not. In these relays, when the coil is energized, the armature operates a latch which locks in the change in the state of the contacts and holds them in that state once the relay is de-energized until such time that the relay is mechanically or electrically reset. With less than 1/32 inch latch engagement, it is possible that the relay could unlatch prematurely. GE concluded that two circumstances can cause latch engagement to be less than 1/32 inch: (1) Insufficient clearance between the top of the relay armature and the top of the moving contact carrier, and (2) Insufficient tension provided by the formed leaf spring that rotates the latch to its fully engaged position, which may permit the spring to relax before full engagement between the latch and the armature is achieved.

The Bulletin requested licensees to (1) measure the distance between the top of the molded contact carrier and the top of the relay armature; (2) inspect the latch with the armature fully depressed against the pole piece; (3) repair or replace any relay that fails the above inspections; and (4) inspect all existing spare relays. Future spares received are to be inspected prior to their installation if manufactured prior to November 1, 1987.

TVA responds to the Bulletins for all its plants in letters dated July 6 and September 28, 1988. In the July 6, 1988 letter, TVA stated that (1) Bellefonte does not have these relays, (2) Browns Ferry and Watts Bar have these relays and the inspections and the repairs or replacements, if needed, will be completed before restart of each unit, (3) Sequoyah, Unit 2 has the

Accession 8810310377-XA

Accession 8807120021

*[Handwritten signature]*

October 25, 1988

relays and the inspections and the repairs or replacements, if needed, will be done in the upcoming Cycle 3 refueling outage and (4) Sequoyah, Unit 1 has the relays and the inspections and the repairs or replacements, if needed, will be completed before restart.

In the September 28, 1988 letter, TVA stated for Sequoyah, Unit 1 that a total of 26 relays was inspected on the 6,900-volt shutdown boards 1A-A and 1B-B (13 per board) and none of the relays had inadequate latch engagement. Therefore, no corrective repairs or replacements were determined to be required. Two of these 26 relays were contained in spare compartments. Also, TVA stated that 12 spare relays were recently received and will be inspected before their use.

The time frame that TVA is using to inspect and to repair or replace, if needed, these relays is acceptable because it meets the requirements in the Bulletin. These relays were to be inspected no later than restart following the next refueling outage scheduled to begin 30 days or more after receipt of this Bulletin. For Sequoyah, Unit 2, this is the upcoming Cycle 3 outage. TVA will be submitting letters in the future on the results of inspections of these relays for Watts Bar, Browns Ferry and Sequoyah, Unit 2. TVA will also be submitting a letter to identify the types of these relays used at Sequoyah, Unit 1.

The TVA responses for Sequoyah, Unit 1 is sufficient for the plant to restart.

Original Signed by  
Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

# DISTRIBUTION

Docket File  
Projects Reading  
OSP Reading  
JPattlow  
SRichardson  
FMcCoy  
EMarinos  
RAuluck  
JDonohew  
GGears  
MSimms

OFC	:OSP:TVA/LA	:OSP:TVA/PM	:TVA:AD/P	:	:	:	:
NAME	:MSimms	:JDonohew:as	:SRlack	:	:	:	:
DATE	:10/25/88	:10/25/88	:10/25/88	:	:	:	:

OFFICIAL RECORD COPY

ARM2  
No