

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8012310365 DOC. DATE: 80/12/23 NOTARIZED: NO
 FACIL: 50-361 San Onofre Nuclear Station, Unit 2, Southern California
 50-362 San Onofre Nuclear Station, Unit 3, Southern California
 AUTH. NAME AUTHOR AFFILIATION
 ARENAL, A. Southern California Edison Co.
 RECIP. NAME RECIPIENT AFFILIATION
 ENGELKEN, R.H. Region 5, San Francisco, Office of the Director

DOCKET #
 05000361
 05000362

SUBJECT: Final deficiency rept re cracking in coil spool insulators
 of HFA relays, initially reported on 801125. Defective relays
 will be replaced w/ Century Series HFA relays. HFA relays w/ no
 cracks will be given force tensile test.

DISTRIBUTION CODE: B019S COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 3
 TITLE: Construction Deficiency Report (10CFR50.55E)

NOTES: Send all FSAR & ER amends to L Chandler.
 1 cy: J Hanchett (Region V)
 Send all FSAR & ER amends to L Chandler.
 1 cy: J Hanchett (Region V)

05000361

05000362

ACTION:	RECIPIENT		COPIES		RECIPIENT	COPIES		
	ID CODE/NAME		LTTR	ENCL		ID CODE/NAME	LTTR	ENCL
ACTION:	A/D LICENSNG	04	1	1	MIRAGLIA, F.	05	1	1
	LEE, J.	06	1	1	ROOD, H.	07	1	1
INTERNAL:	AD/RCI/IE	17	1	1	AEOD	18	1	1
	ASLBP/J. HARD		1	1	D/DIR HUM FAC	15	1	1
	DIR, DIV OF LIC		1	1	EDO & STAFF	19	1	1
	EQUIP QUAL BR	11	1	1	HYD/GEO BR	22	1	1
	I&E	09	1	1	LIC QUAL BR	12	1	1
	MPA	20	1	1	NRC PDR	02	1	1
	OELD	21	1	1	PROG/TST REV	13	1	1
	QA BR	14	1	1	REG FILE	01	1	1
	RUTHERFORD, W. IE		1	1	STANDARDS DEV	21	1	1
	EXTERNAL:	ACRS	16	16	16	LPDR	03	1
	NSIC	08	1	1				

JAN 5 1981

TOTAL NUMBER OF COPIES REQUIRED: LTTR 41 ENCL 41

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

A. ARENAL
VICE PRESIDENT

TELEPHONE
213-572-1476

December 23, 1980

Mr. R. H. Engelken, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region V
Suite 202, Walnut Creek Plaza
1990 North California Boulevard
Walnut Creek, California 94506

Dear Mr. Engelken:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station, Units 2 and 3

In a letter dated November 25, 1980, we notified you of a condition at San Onofre Units 2 and 3 involving cracking in coil spool insulators of HFA relays which we considered to be potentially reportable in accordance with 10CFR50.55(e).

We have performed an evaluation of this condition and have confirmed its reportability. Accordingly, there are enclosed twenty-five (25) copies of a report entitled, "Final Report on General Electric Type HFA Relay Coil Spool Cracks, San Onofre Nuclear Generating Station, Units 2 and 3."

If you have any questions regarding this report, we would be happy to discuss them at your convenience.

Very truly yours,

A. Arenal

Enclosures

cc: Victor Stello (NRC, Director I&E)
R. J. Pate (NRC, San Onofre Units 2 and 3)

B019

5

1/1

8012310 365

FINAL REPORT ON GENERAL ELECTRIC TYPE HFA RELAY COIL SPOOL CRACKS

San Onofre Nuclear Generating Station, Units 2 and 3

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e)(3). It describes a condition found during startup testing of switchgear assemblies. This report includes a description of the deficiency, an analysis of the safety implications, and a summary of the corrective action taken or to be taken. By letter dated November 25, 1980, Southern California Edison confirmed notification to the NRC of this condition as being potentially reportable.

BACKGROUND

General Electric (GE) Type HFA relays were originally supplied with Nylon spool pieces. These spool pieces, under high humidity conditions, released HCl which could cause failure of the wire enamel insulation. GE accordingly changed from the white Nylon to a black Lexan spool piece. Subsequently, in Service Advice Bulletin 152.2, GE reported spool cracking failures with the black Lexan due to improper manufacturing controls. GE also started supplying HFA relays with clear Lexan to avoid this problem. During a field survey of HFA relays to determine the extent of black Lexan spool cracking, several clear Lexan spools were found to be cracked. The equipment supplier was contacted to determine the cause of the failures. A complete survey of all HFA relays was conducted to determine the extent of the problem. The inspection located cracks in 26 out of 375 safety related relays.

DISCUSSION

The following discussion is responsive to 10CFR50.55(e)(3).

Description of Deficiency

Twenty-six (26) class IE GE HFA relays out of a total of 375 relays have been found to have cracked coil spool retainer plates (rims). The defective relays were limited to 4160 volt switchgear. The cracks vary in severity from single hairline cracks to multiple fractures.

To date, at San Onofre Units 2 and 3, there have been no reported failures of the relays to operate due to this condition.

FINAL REPORT ON GENERAL ELECTRIC TYPE HFA RELAY COIL SPOOL CRACKS
San Onofre Nuclear Generating Station, Units 2 and 3

In two Service Advice Bulletins (152.1 and 152.2) GE has indicated that the possible cause of the cracks is related to the production and manufacturing processes.

Analysis of Safety Implications

GE Service Advice Bulletin 152.1 indicated that only severe cracking could result in loss of wire support. GE Service Advice Bulletin 152.2 stated that spool cracking may develop into a piece becoming detached that might cause binding of the hinged armature of the relay, thus preventing relay operation.

HFA relays are utilized in various applications. The failure of relay operation in safety related service may preclude the accomplishment of the intended safety function.

Corrective Action

The recently published GE Service Advice Bulletin 152.2 recommends replacement of the defective class IE HFA relays with Century Series HFA relays. The San Onofre Units 2&3 Project will take the appropriate action to procure the Century Series HFA relays and substitute them for the existing defective HFA relays in accordance with a planned replacement schedule. In addition, all Class IE HFA relays with no visible cracks will be given a force tensile test in accordance with GE Service Advice Bulletin 152.1. Relays which do not meet the test criteria will be replaced.