

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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O'REILLY,J.P. Region 2, Atlanta, Office of the Director

SUBJECT: Updated LER 80-015-01T-1: on 800823, three Westinghouse model
NBFD-315 relays used in reactor protection sys have failed
within 28 days. Caused by open circuit & short circuit coil
failures.

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NOTES:

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	A/D MATL & QU08		1	1	A/D OP REACT009	1	1
	A/D PLANT SYS10		1	1	A/D RAD PROT 11	1	1
	A/D SFTY ASSE12		1	1	A/D TECHNOLOG13	1	1
	ACC EVAL BR 14		1	1	AE00	2	2
	ASLBP/J.HARD		1	1	AUX SYS BR 15	1	1
	CHEM ENG BR 16		1	1	CONT SYS BR 17	1	1
	CORE PERF BR 18		1	1	D/DIR,HUM FAC19	1	1
	DIR,ENGINEERI20		1	1	DIR,HUM FAC S21	1	1
	DIR,SYS INTEG22		1	1	EFF TR SYS BR23	1	1
	EMERG PREP 24		1	1	EQUIP QUAL BR25	1	1
	GEOSCIENCES 26		1	1	HUM FACT ENG 27	1	1
	HYD/GEO BR 28		1	1	I&C SYS BR 29	1	1
	I&E 05		2	2	JORDAN,E./IEI	1	1
	LIC GUID BR 30		1	1	LIC QUAL BR 31	1	1
	MATL ENG BR 32		1	1	MECH ENG BR 33	1	1
	MPA		3	3	NRC PDR 02	1	1
	OP EX EVAL BR34		3	3	OR ASSESS BR 35	1	1
	POWER SYS BR 36		1	1	PROC/TST REV 37	1	1
	QA BR 38		1	1	RAD ASSESS BR39	1	1
	REACT SYS BR 40		1	1	REC FILE 01	1	1
	REL & RISK A 41		1	1	SFTY PROG EVA42	1	1
	SIT ANAL BR 43		1	1	STRUCT ENG BR44	1	1
	SYS INTERAC B45		1	1			
EXTERNAL:	ACRS	46	16	16	LPDR	03	1
	NSIC	05	1	1	TERA:DOUG MAY		1

SEP 22 1980

TOTAL NUMBER OF COPIES REQUIRED: LTTR 75 ENCL 75

LICENSEE EVENT REPORT

CONTROL BLOCK: (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	S	C	H	B	R	2	0	0	-	0	0	0	0	0	0	-	0	0	3	4	1	1	1	1	4	5
7	8	9	14						15	25						26	30				57	CAT	58				

0	1	L	0	5	0	0	0	2	6	1	7	0	8	2	3	8	0	8	0	9	1	5	8	0	9
7	8	60	61	68						69	74				75	80									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

At 0900 hours on July 26, 1980, Reactor Protection Relay RT-5 failed. Then, at 1220 hours the same day, relay RT-6 failed. Then, twenty-eight days later at 0611, relay RT-4 failed. The failed and replacement relays are Westinghouse Model NBFD-31S, style 5072A49G03 with 125 to 130 volt DC coils. This constitutes a reportable occurrence per Technical Specification paragraph 6.9.2.a.9.

0	9	I	A	11	B	12	B	13	R	E	L	A	Y	X	14	A	15	Z	16		
7	8	9	10	11	12	13	14	15	16	17	18	19	20								
LER/RO REPORT NUMBER		EVENT YEAR		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE		COMP. SUBCODE		VALVE SUBCODE		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.	
17		8 0		11		12		13		14		15		16		17		18		19	
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER					
18		19		20		21		22		23		24		25		26					
C		G		Z		Z		0 0 0 0		Y		Y		N		W 1 2 0					

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

The failed relays were in Reactor Protection Train "A". The relay coils were found to be open, circuited on the earlier failure and short circuited on this failure causing the control power fuse to also fail. The relays were replaced with identical units and were tested satisfactorily. The failed relays will be returned to Westinghouse for inclusion in their investigation of this and a similar occurrence reported in LER 80-06.

1	5	H	28	0	0	0	29	NA	30	C	31	Technician working trouble ticket	32
7	8	9	10	11	12	13	14	15	16	17	18	19	20
FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION					
15		28		29		30		31					
ACTIVITY TAKEN		CONTENT		AMOUNT OF ACTIVITY		LOCATION OF RELEASE							
16		33		34		35							
PERSONNEL EXPOSURES		TYPE		DESCRIPTION									
17		37		38									
PERSONNEL INJURIES		TYPE		DESCRIPTION									
18		39		40									
LOSS OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION									
19		41		42									
PUBLCITY		TYPE		DESCRIPTION									
20		43		44									

SUPPLEMENTAL INFORMATION

FOR

LICENSEE EVENT REPORT 80-015

1. Cause Description and Analysis: On July 26, 1980, at 0900 hours, with the plant at 70% power, while performing monthly periodic test PT-19A on the Reactor Protection System A train, relay RT-5 failed to re-energize. This relay was replaced. While continuing on the periodic test, at 1220 hours, relay RT-6 also failed to re-energize and was replaced. On August 23, 1980, at 0611 hours, with the Unit No. 2 in a refueling condition, a P-10 status light was received. The investigation of the erroneous status light by an I&C Technician revealed the cause to be a blown fuse which resulted when the coil of relay RT-4 short circuited in the Reactor Protection System "A" train. These relays are installed in a fail safe configuration (normally energized); therefore no loss of safety functions occurred from their failures. The blown fuse which resulted from the last coil failure would have opened the reactor trip breaker if the unit had been in a condition other than refueling.

The three failures appear to be the result of a shorting condition where the field wires connect to the coil wires. This is the same condition as reported previously on LER 80-006. The failed and replacement relays are Westinghouse Model NBFD-31S, style 5072A49G03 with 125/130 volt DC coils.

2. Corrective Action: The failed relays (3) and fuse in "A" train of Reactor Protection were replaced and checked out.
3. Corrective Action to Prevent Further Occurrence: The supplier of the NBFD-31S relay is continuing their investigation of these failures. These failed relays will be sent to them to assist in their ongoing investigation. No further information has been generated as to the cause of the failures.

The normal periodic testing of the Reactor Protection relays will continue. This testing, along with the status lights and alarms available to the operator, is considered adequate to insure the Reactor Protection System is maintained in a good, safe, operating condition.