

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL:50-287 Oconee Nuclear Station, Unit 3, Duke Power Co.
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 Region 2, Atlanta, Office of the Director

DOCKET #
 05000287

SUBJECT: LER 80-009/01T-0: on 800710, breaker supplying control power
 for A phase of normal voltage circuit of Unit 3 emergency
 power switching logic tripped. Caused by burned out relay
 coil. Damaged relay wiring replaced.

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 TITLE: Incident Reports

NOTES: M Cunningham: all amends to FSAR & changes to Tech Specs. 05000287

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ID CODE/NAME			L	T	ID CODE/NAME			L	T
ACTION:	REID,R.	05	1	1	FAIRTILE,M.	06	2	2	
INTERNAL:	A/D COMP&STRUCT		1	1	A/D ENV TECH		1	1	
	A/D MATL & QUAL		1	1	A/D OP REACTORS		1	1	
	A/D PLANT SYS		1	1	A/D RAD PROT		1	1	
	A/D SFTY ASSESS		1	1	A/D TECHNOLOGY		1	1	
	ACC EVAL BR		1	1	AEOD		10	10	
	AUX SYS BR		1	1	CHEM ENG BR		1	1	
	CONT SYS BR		1	1	CORE PERF BR		1	1	
	D/DIR,HUM FAC S		1	1	DIR,ENGINEERING		1	1	
	DIR,HUM FAC SFY		1	1	DIR,SYS INTEG		1	1	
	EFF TR SYS BR		1	1	EMERG PREP		1	1	
	EQUIP QUAL BR		1	1	GEOSCIENCES		1	1	
	HUM FACT ENG BR		1	1	HYD/GEOD BR		1	1	
	I&C SYS BR		1	1	I&E	09	2	2	
	JORDAN,E./IE		1	1	LIC GUID BR		1	1	
	LIC QUAL BR		1	1	MATL ENG BR		1	1	
	MECH ENG BR		1	1	MPA	11	3	3	
	NRC PDR	02	1	1	OP EX EVAL BR		3	3	
	OR ASSESS BR		1	1	POWER SYS BR		1	1	
	PROC/TST REV BR		1	1	QA BR		1	1	
	RAD ASSESS BR		1	1	REACT SYS BR		1	1	
	<u>REG FILE</u>	01	1	1	REL & RISK A BR		1	1	
	SFTY PROG EVAL		1	1	SIT ANAL BR		1	1	
	STRUCT ENG BR		1	1	SYS INTERAC BR		1	1	
EXTERNAL:	ACRS		16	16	LPDR	03	1	1	
	NSIC	04	1	1	TERA:DOUG MAY		1	1	

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DUKE POWER COMPANY
OCONEE UNIT 3

Report Number: RO-287/80-9

Report Date: July 30, 1980

Occurrence Date: July 10, 1980

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Inoperable Portion of the Emergency Power
Switching Logic

Conditions Prior to Occurrence: Hot Shutdown

Description of Occurrence:

On July 10, 1980 at approximately 2040 hours, D.C. breaker 3DIA-13 tripped. This breaker supplies control power for the "A" phase of the Normal Voltage Circuit of the Emergency Power Switching Logic (EPSL) on Unit 3. The breaker tripped due to a fault condition caused by a burned out relay coil on relay 27NYA₂. The relay directly above 27NYA₂, which is 27NX_B, appeared to have some damaged wires as well as possible smoke damage. This relay was also determined to be inoperable since its condition was questionable. 27NX_B is in the "B" phase circuit; therefore, two phases out of three were determined to be inoperable in the normal voltage circuit of the EPSL on Unit 3. This effectively disabled a portion of the EPSL (transfer-to-startup bus) and is reportable pursuant to Technical Specification 6.6.2.1.a(5). Unit 3 was in hot standby when this incident occurred.

Apparent Cause of Occurrence:

At 1914 hours on July 10, 1980, the Unit 3 reactor tripped. The trip and resulting auxiliary power transfer caused relay 27NYA₂ to energize. Apparently the coil clearing contact, which is normally closed and shorts out part of the relay coil to provide fast operation of the relay, did not open completely, causing the relay coil to overheat and burn. Relay 27NX_B, located directly above 27NYA₂, appeared to have damaged wires and smoke damage from the failure of 27NYA₂. Thus, this relay was declared inoperable since its condition was unknown. Subsequent inspection, cleaning, and testing of this relay verified its operability.

Analysis of Occurrence:

As the phase "A" circuit had been tagged out, and the phase "B" circuit had been declared inoperable, the Normal Source EPSL circuitry was considered effectively out of service. However, several backup systems to the EPSL circuitry were available to perform the necessary transferring and load shedding in the event of an accident. These systems were:

- Local undervoltage relays which provide load shedding on non-essential loads.

- The main feeder bus monitor logic which provides transfer of the unit auxiliaries to the startup and standby buses.
- Generator lockout relays and the 62GXA relay which initiate transfer of unit auxiliaries to the startup source upon a turbine trip, generator trip, or reactor trip.

In addition, credit can be taken for operator action to manually perform the needed transfer and load shed functions. Finally, a review of the Oconee Technical Specifications determined that there was no limitation that prevented the unit from operating without this portion of the EPSL circuitry. During the repair interval, the 4160 Unit 3 auxiliary loads were supplied by the Startup Transformer CT3. This alignment eliminated the need for the transfer-to-startup function associated with the 27NYA₂ and 27NX_B relays. Additionally, the automatic load shed capability was available throughout the repair interval in case a transfer to the Standby Buses was necessary, despite the inoperability of these relays. In consideration of the above, the decision was made to repair the relays while Unit 3 came up in power.

Loss of the EPSL on Unit 3 is considered to be reportable pursuant to Technical Specification 6.6.2.1.a.(5), which concerns the failure of a component which could prevent the fulfillment of the functional requirements of systems required to cope with accidents analyzed in the Safety Analysis Report. However, because the Technical Specifications do not prohibit operation without the EPSL, this incident is considered to be of no significance with respect to safe operation and the health and safety of the public were not affected.

When this incident was originally reported to the NRC, it was considered to be reportable pursuant to Technical Specification 6.6.2.1.a.(6). At that time, it was considered that an inadequate procedure had allowed the normal source EPSL circuitry to be removed from service for repair, thereby degrading the safe operation of the plant. However, this was due to a misunderstanding of the situation as this portion of the EPSL had already been considered to be inoperable when it was removed from service.

Corrective Action:

Relay 27NYA₂ and its associated wiring were replaced. The adjacent relays and their wiring were cleaned and visually inspected. The EPSL circuitry was tested, and found to be operating properly, and returned to service at 1545 hours on July 11, 1980.

LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: 1										(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)																															
01		S C N E E 3 2 0 0 - 0 0 0 0 0 0 - 0 0 0 3 4 1 1 1 1 4										5																													
7 8		LICENSEE CODE										LICENSE NUMBER										LICENSE TYPE 30										57 CAT 58									
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EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10																																									
02		A breaker which supplies control power for the "A" phase of the Normal Voltage																																							
03		Circuit of the Unit 3 Emergency Power Switching Logic (EPSL) tripped due to a																																							
04		burned out relay coil. Adjacent relays also appeared to be damaged. The EPSL																																							
05		was repaired while Unit 3 was returned to power. Several backup systems,																																							
06		including operator action, were always available to perform the necessary trans-																																							
07		ferring and load shedding in the event of an accident. Thus, safe operation of																																							
08		the unit was not affected nor were the health and safety of the public endangered.																																							
7 8 9																																									
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17		LER/RO REPORT NUMBER 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50																																							
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10		A reactor trip and the resulting auxiliary power transfer caused relay 27NYA2																																							
11		to energize. The coil clearing contact, however, failed to open completely,																																							
12		causing the relay coil to overheat and burn. The damaged relay and its																																							
13		associated wiring were replaced. Adjacent relays were cleaned, inspected, and																																							
14		tested.																																							
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15		FACILITY STATUS 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50																																							
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16		ACTIVITY CONTENT 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50																																							
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18		PERSONNEL INJURIES 40 41 42 43 44 45 46 47 48 49 50																																							
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19		LOSS OF OR DAMAGE TO FACILITY 42 43 44 45 46 47 48 49 50																																							
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20		PUBLICITY 44 45 46 47 48 49 50																																							
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