

EXHIBIT

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10	
0 2	Prior to receipt of IE Information Notice 83-41, (OCNA068314), "Actuation of Fire Suppression System Causing
0 3	Inoperability of Safety-Related Equipment," AP&L had initiated a study of possible damage to safety-related
0 4	equipment resulting from suppression system operation. As a result of that study, we have identified one
0 5	suppression system to date where safety-related equipment may be subjected to flooding if the suppression
0 6	system were operated for prolonged periods without operator intervention. Fire zone 2109-U, which is the
0 7	corridor outside the cable spreading room on elevation 372 feet of the ANO-2 Auxiliary Building, has a sup-
0 8	pression system which is a deluge-actuated, directional water spray system actuated by both smoke and line-type
7 8	9

SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE						COMP SUBCODE		VALVE SUBCODE		REVISION NO	
10 9 8		11 10		12 11		13 12		14 13 12 11 10 9 8 7 6 5 4 3 2 1						15 14 13 12 11 10 9 8 7 6 5 4 3 2 1		16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	
LER/RO 17 REPORT NUMBER	EVENT YEAR 18 17	19 18	20 19	21 20	22 21	23 22	24 23	25 24	26 25	27 26	28 27	29 28	30 29	31 30	32 31	33 32	34 33
ACTION TAKEN 33	FUTURE ACTION 34	EFFECT ON PLANT 35	SHUTDOWN METHOD 36	HOURS 37	ATTACHMENT SUBMITTED 40	NPRD-4 FORM SUB 41	PRIME COMP. SUPPLIER 42	COMPONENT MANUFACTURER 43	44	45	46	47	48	49	50	51	

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27	
1 0	1 The fire suppression system for fire zone 2109-U was installed per the requirements of the 1978 Fire Protection
1 1	1 Safety Evaluation Report. The original drainage assessment portion of the design changes was based on engi-
1 2	1 neering judgment instead of detailed hydraulic calculation. A recent preliminary hydraulic calculation indi-
1 3	1 cated that flooding could occur. Upon notification that a problem could exist, AP&L decided to isolate the
1 4	1 2109-U suppression system and to rely on manual operation of the system until a more refined calculation could

FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION	
1	5	1	28	0	9	0	29	1	30
8	9	10	9	0	12	13	NA	44	45
ACTIVITY		CONTENT						46	
								Engineering Calculation	
								132	

ACTIVITY RELEASED		CONTENT OF RELEASE		AMOUNT OF ACTIVITY		LOCATION OF RELEASE	
1	6	2	34	1	NA	35	NA
8	9	10	11	44	45	36	

PERSONNEL EXPOSURE										80	
NUMBER				TYPE		DESCRIPTION					
1	7			0	0	0	137	2	138	NA	
8	9			11	12						139

PERSONNEL INJURIES										80
NUMBER					DESCRIPTION					
1	8				0	0	0	40	NA	
8					9			11		141

11		12		14	
LOSS OF OR DAMAGE TO FACILITY				80	
TYPE		DESCRIPTION			
1	9	Z	42	NA	

PUBLICITY		ISSUED		DESCRIPTION		NRC USE ONLY	
2	0	N	44	NA			

8 9 10 68 69 70 71 72 73 74 75 76 77 78 79 80

NAME OF PREPARER: Patrick Rogers

PHONE: (501) 964-3100

LICENSEE EVENT REPORT

EXHIBIT

LER No. 50-368/83-035/99X-0

Occurrence Date: 08/03/83

Event Description and Probable Consequences (Continued)

heat detectors which alarm in the control room. The equipment located in and around fire zone 2109-U consists of the DC and AC electrical busses, vital instrument busses, distribution panels, selected motor control centers, the station batteries, inverters, and other redundant safety-related equipment. Our recently completed analysis projects that the suppression system, which was installed to protect cable trays in the zone, may damage some of the safety-related electrical equipment installed in and around zone 2109-U because of flooding, if the suppression system is subjected to prolonged operation without operator intervention. Our calculations show that after approximately 21.8 minutes of operation, one DC electrical bus (2D01) may fail due to bus shorting resulting from flooding. After approximately 25 minutes of full flow system operation, the second DC bus (2D02) may be lost for the same reason. Based upon the outcome of these calculations, AP&L felt modifications could be made to minimize the possibility of common-mode failure from water related damage, even though sufficient time was available for operator action to deactivate the suppression system or otherwise moderate room flooding. This report is being submitted for information since these findings are related to Information Notice 83-41.

Cause Description and Corrective Actions (Continued)

be made. This interim action was taken since most system actuations are associated with activities other than fire (i.e., spurious actuations). A more refined calculation indicated that sufficient time for operator intervention existed; however, it was decided to make a modification to increase the margin of safety and relieve the necessity for operator response for purposes other than fire alarm investigation. A waterproof curbing has been installed to protect one of the redundant DC electrical busses from flooding based on calculations which show that the 2109-U zone water level stabilizes for the duration of system operation. The system has been returned to automatic actuation as suppression spray operation can now continue for an indefinite period of time without flooding the redundant vital DC bus. We are also evaluating the possibility of changing system operation from deluge to pre-action water spray or providing other such changes which would alleviate undue flood damage resulting from inadvertent system actuation. We intend to continue our evaluation of all areas of the plant where suppression systems have been installed to protect safety-related equipment from fire damage.

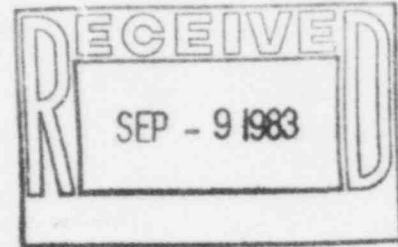


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September 2, 1983

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Mr. W. C. Seidle, Chief
Reactor Project Branch #2
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011



Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Licensee Event Report
No. 83-035/99X-0

Gentlemen:

The subject Licensee Event Report 83-035/99X-0 is submitted for information since these findings are related to Information Notice 83-41.

Very truly yours,

John R. Marshall
John R. Marshall
Manager, Licensing

JRM:RJS:s1

Attachment

cc: Mr. Richard C. DeYoung
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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Norman M. Haller, Director
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