

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit One										DOCKET NUMBER (2) PAGE (3) 01510101 31 31101012									
TITLE (4) Safety Related Shock Suppressor (Snubber) Failure																			
EVENT DATE (5)					LER NUMBER (5)					REPORT DATE (7)					OTHER FACILITIES INVOLVED (8)				
					Sequential Revision										Facility Names Docket Number(s)				
Month Day Year Year					Number Number					Month Day Year									
0 3 2 1 8 4 8 4 -- 0 0 1 -- 0 0 0 4 2 0 8 4															01510101				
OPERATING THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: MODE (9) N (Check one or more of the following) (11)																			
POWER 20.402(b) 20.405(c) 50.73(a)(2)(iv) 73.71(b)																			
LEVEL 20.405(a)(1)(i) 50.36(c)(1) 50.73(a)(2)(v) 73.71(c)																			
(10) 0 0 0 20.405(a)(1)(ii) 50.36(c)(2) 50.73(a)(2)(vii) X Other (Specify in																			
20.405(a)(1)(iii) 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) Abstract below and																			
20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) in Text, NRC Form																			
20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(x) 366A)																			
LICENSEE CONTACT FOR THIS LER (12)																			
Name										Telephone Number									
Donald B. Lomax, Plant Licensing Supervisor										Area									
										Code									
										5 0 1 9 6 4 3 2 1 5									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
Cause		System		Component		Manufacturer		Reportable to NPRDS		Cause		System		Component		Manufacturer		Reportable to NPRDS	
D		A B		S N B		I 2 0 7		Y		D		A B		S N B		I 2 0 7		Y	
D		S J		S N B		I 2 0 7		Y		D		A B		S N B		I 2 0 7		Y	
B		A B		S N B		I 2 0 7		Y		B		B P		S N B		I 2 0 7		Y	
D		A B		S N B		I 2 0 7		Y											
SUPPLEMENT REPORT EXPECTED (14)										EXPECTED Month Day Year									
Yes (If yes, complete Expected Submission Date) X No										SUBMISSION									
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)										DATE (15)									

During a scheduled mid-cycle outage, visual inspection of all safety related hydraulic shock suppressors (snubbers) was performed for verification of overall integrity and operability. Additionally, all snubbers with a rated capacity less than 50,000 lbs were functionally tested for operability including verification of proper piston movement, lock up and bleed. On 3/21/84, during functional testing, a pressurizer spray line snubber manufactured by ITT Grinnell failed to meet lock up test acceptance criteria. Of the fifty-two snubbers tested, six additional ITT Grinnell snubbers failed to meet functional testing acceptance criteria (two with deviations for acceptable lock-up velocity and four with deviations for acceptable bleed velocity). All functionally tested snubbers were disassembled, refurbished, retested and returned to service. These snubbers are designed for low probability seismic events which did not occur and the observed degradation in snubber performance is not judged to affect the operability of the affected systems. The event does not appear to be indicative of generic problem, therefore this event is reported for information.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Sequential	Revision		
		Year	Number	Number	
Arkansas Nuclear One, Unit One	05000313	84	01	00	020012

TEXT (If more space is required, use additional NRC Form 366A's) (17)

For the period of 3/16/84 to 4/12/84 Arkansas Nuclear One - Unit 1 was in a scheduled outage for steam generator inspection. During this outage a visual inspection of all safety related hydraulic shock suppressors (snubbers) was performed for verification of overall integrity and operability. Additionally, all snubbers with a rated capacity of less than 50,000 lbs were functionally tested for operability including verification of proper piston movement, lock up and bleed. The following table lists the results of the functional test for the seven snubbers which failed to meet operability criteria.

SAFETY RELATED HYDRAULIC SHOCK SUPPRESSOR (SNUBBER) FUNCTIONAL TEST RESULTS						
SNUBBER NUMBER	SNUBBER LOCATION	SNUBBER MANUFACTURER	FAILURE DATA		FAILURE CAUSE DETERMINATION	
			DATE	LU (1) B(2)		
HS-61(5)	Pressurizer Spray Line	ITT Grinnell	03/21/84	T (3)	Lexan reservoir tube cracked; low fluid level	
HS-56(5)	Pressurizer Spray Line	ITT Grinnell	03/23/84	C(4)	Unknown	
HS-30(6)	Main Feedwater Line "A"	ITT Grinnell	03/26/84	T&C	Unknown	
HS-102(5)	Pressurizer Surge Line	ITT Grinnell	03/28/84	T&C	Unknown	
H-8-2(5)	Pressurizer Relief Line	ITT Grinnell	03/29/84	C	Poppet and barrel spring worn, valve block cracked	
HS-49(6)	Decay Heat Line "A"	ITT Grinnell	03/29/84	C	Cylinder piston scoring	
HS-88(6)	Pressurizer Relief Line	ITT Grinnell	03/29/84	T&C	Unknown	

NOTES:

- (1) Failure during lock up testing
- (2) Failure during bleed testing
- (3) Testing with tension forces
- (4) Testing with compressive forces
- (5) 1½" bore; 5" stroke; 3000 lb capacity
- (6) 2½" bore; 5" stroke; 12,500 lb capacity

It is noted that none of the 7 snubbers were locked up or would not bleed, but lockup and bleed rates were observed to be outside of manufacturers specifications.

Except as noted in the table above, the failure mechanism for snubbers not having acceptable bleed rates could not be determined. Snubber disassembly showed no condition (eg. bleed valve blockage) which caused failure, although improper bleed valve adjustment could be responsible. All snubbers that were functionally tested were disassembled, refurbished, retested and returned to service. Evaluation of snubber maintenance procedures will be conducted to determine needed revisions. This evaluation will consider the need for improved controls on snubber handling to prevent cracking of Lexan tubing and improved bleed valve adjustment technique.

Hydraulic shock suppressors provide velocity sensitive restraint to minimize movement of piping or equipment subject to disturbing forces while allowing for normal thermal movement. No functionally tested snubbers exhibited piston binding which would restrict normal thermal movement. Therefore no stress or damage to piping or equipment resulted from the as found failures. These snubbers are designed for low probability seismic events which did not occur and the observed degradation in performance is not judged to affect operability of the affected systems. The safety impact of these degraded snubbers is not believed to be significant, however detailed analyses would have to be performed to thoroughly evaluate accident/seismic loading impact on the affected piping systems. Due to the extremely high cost it is not considered practical to perform these analyses. This event is reported for information. Previous occurrences involving hydraulic shock suppressors are reported in LER's 78-22, 78-04, 77-25, 76-20 and 76-05.



ARKANSAS POWER & LIGHT COMPANY
POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501)371-4000

April 20, 1984

1CAN948405

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. NPF-6
Licensee Event Report
NO. 84-001-00

Gentlemen:

In accordance with 10CFR requirements, attached is the subject report concerning safety related shock suppressor (snubber) failure.

Very truly yours,

for James M. Levine
General Manager

JRM:mab

Attachment

cc: Mr. Richard P. Denise, Director
Division of Resident Reactor Projects
and Engineering Programs
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Tx 76011

IE22
1/1