

L I C E N S E E E V E N T R E P O R T (L E R)

FACILITY NAME (1) Arkansas Nuclear One, Unit 1										DOCKET NUMBER (2) 10151010101		PAGE (3) 31 11 3110F1012		
TITLE (4) Potential Reactor Building Liner Plate Degradation Due to Hydrogen Purge Pipe Support Design Deficiency														
EVENT DATE (5)				LER NUMBER (6)				REPORT DATE (7)				OTHER FACILITIES INVOLVED (8)		
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names		Docket Number(s)			
1	10	2	19	8	14	--	0	0	1	11	2	19	8	14
OPERATING MODE (9) N THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)														
POWER LEVEL (10)		20.402(b)		20.405(a)(1)(i)		20.405(a)(1)(ii)		20.405(a)(1)(iii)		20.405(a)(1)(iv)		20.405(a)(1)(v)		
		20.405(a)(1)(i)		50.36(c)(1)		50.36(c)(2)		50.73(a)(2)(i)		50.73(a)(2)(ii)		50.73(a)(2)(iii)		
		20.405(a)(1)(ii)		50.73(a)(2)(iv)		50.73(a)(2)(v)		50.73(a)(2)(vi)		50.73(a)(2)(vii)		50.73(a)(2)(viii)		
		20.405(a)(1)(iii)		50.73(a)(2)(vii)(A)		50.73(a)(2)(viii)(B)		50.73(a)(2)(ix)		50.73(a)(2)(x)		73.71(b)		
		20.405(a)(1)(iv)		50.73(a)(2)(ix)		50.73(a)(2)(x)		50.73(a)(2)(xi)		50.73(a)(2)(xii)		73.71(c)		
		20.405(a)(1)(v)		50.73(a)(2)(xii)		50.73(a)(2)(xiii)		50.73(a)(2)(xiv)		50.73(a)(2)(xv)		Other (Specify in Abstract below and in Text, NRC Form 366A)		
LICENSEE CONTACT FOR THIS LER (12)														
Name Patrick Rogers, Plant Licensing Engineer										Telephone Number Area Code 5101191614-1311010				
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					
SUPPLEMENT REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)				
Yes (If yes, complete Expected Submission Date) No										Month Day Year				
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)														

On 10/29/84, while in Refueling Shutdown, an engineering evaluation of the Hydrogen Purge System using post Loss of Coolant Accident (LOCA) conditions revealed a potential for degradation of the Reactor Building liner plate at three locations to which pipe supports were welded. This review was initiated as a result of a discrepancy observed in the Architect Engineers' original system design. The Hydrogen Purge System piping was originally designed for a maximum temperature of 125°F. However, the piping inside the Reactor Building could be subjected to temperatures of up to 289°F following a LOCA. The Hydrogen Purge System would have remained functional during LOCA conditions. However, degradation of the liner plate could have prevented the Reactor Building from completely fulfilling its safety function. The current practice of performing in-house engineering review of calculations generated by outside vendors should prevent this type of occurrence in the future. Similar piping arrangements were evaluated after discovery of this discrepancy, with no additional problems noted. The piping supports for the portion of the Hydrogen Purge System in question will be modified to satisfy design conditions for the elevated temperature prior to criticality following the current refueling outage. There have been no previous reportable occurrences of this type.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit 1	01510101 31 1 3	81 4	0 0 6	0 0	01210F1012

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

On 10/29/84, while in Refueling Shutdown, an engineering evaluation of the Hydrogen Purge Systems using post Loss of Coolant Accident (LOCA) conditions revealed a potential for degradation of the Reactor Building liner plate at three locations to which pipe supports were welded. This review was initiated as a result of a discrepancy observed (during preparation for planned design modifications) in the Architect Engineers' (A.E.'s) original system design. The Hydrogen Purge System piping was originally designed for a maximum temperature of 125°F. However, the piping inside the Reactor Building could be subjected to temperatures of up to 289°F following a LOCA. The strain levels in the liner plate to stiffener/embed weld at these three locations were found by calculations to exceed the allowable design limits. The Hydrogen Purge System would have remained functional during LOCA conditions as only the "B" loop was affected. However, degradation of the liner plate could have prevented the Reactor Building from completely fulfilling its safety function. Additional analysis would be required to determine the exact effect this condition could have during accident conditions. The A.E.'s original design assumed that the system would not be required until 11 days after a LOCA, at which time the maximum postulated Reactor Building temperature would be 125°F. On 11/28/73, the A.E. revised the Piping Class Summary to reflect a new design temperature of 289°F. However, it does not appear that calculations were performed to qualify piping and supports to the higher temperature. The current practice of performing in-house engineering review of calculations generated by outside vendors should prevent this type of occurrence in the future. Similar piping arrangements were evaluated after discovery of this discrepancy, with no additional problems noted. The piping supports for the portion of the Hydrogen Purge System in question will be modified to satisfy design conditions for the elevated temperature prior to criticality following the current refueling outage. There have been no previous reportable occurrences of this type.



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November 29, 1984

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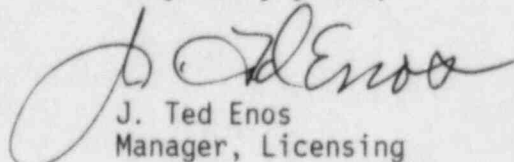
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Licensee Event Report
No. 84-006-00

Gentlemen:

In accordance with 10CFR 50.73(a)(2)(v), attached is the subject report concerning a potential for degradation of the Reactor Building liner plate at three locations to which Hydrogen Purge System pipe supports were welded.

Very truly yours,


J. Ted Enos
Manager, Licensing

JTE:RDS:ds

Attachment

cc: Mr. Richard C. DeYoung
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Norman M. Haller, Director
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