



May 21, 1992

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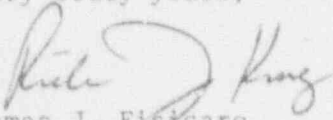
U. S. Nuclear Regulatory Commission  
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SUBJECT: Arkansas Nuclear One - Unit 1  
Docket No. 50-313  
License No. DPR-51  
Licensee Event Report 50-313/92-003-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(iv), enclosed is the subject report concerning an automatic actuation of the Emergency Feedwater System.

Very truly yours,

*for*   
James J. Fisicaro  
Director, Licensing

JJF/RHS/nmg  
Enclosure

cc: Regional Administrator  
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit One DOCKET NUMBER (2) | PAGE (3)  
050003 | 1 | 31003

TITLE (4) Acoustic Initiation of the Emergency Feedwater System During Plant Heatup As A Result Of Securing The Running Reactor Coolant Pumps Due To Reverse Rotation Of An Idle Pump

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)															
0	4	2	4	9	2	9	2	--	0	0	3	--	0	0	0	5	2	1	9	2	0	5	0	0	0

OPERATING MODE (9)  THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10)	<input type="checkbox"/>	20,402(b)	<input type="checkbox"/>	20,405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)
	<input type="checkbox"/>	20,405(a)(1)(i)	<input type="checkbox"/>	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	73.71(c)
	<input type="checkbox"/>	20,405(a)(1)(ii)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>	Other (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/>	20,405(a)(1)(iii)	<input type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)		
	<input type="checkbox"/>	20,405(a)(1)(iv)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)		
	<input type="checkbox"/>	20,405(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number
Richard H. Scheide, Nuclear Safety and Licensing Specialist	Area Code: 501964-5000

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to NERDS	Cause	System	Component	Manufacturer	Reportable to NERDS
A	A B	M O	A 1 8 0	Y					

SUPPLEMENT REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)	<input checked="" type="checkbox"/> No	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 2315 on April 24, 1992, during plant heatup, an automatic initiation of the Emergency Feedwater System (EFW) occurred, as designed, when Operations personnel secured the running Reactor Coolant Pumps (RCPs) in accordance with plant procedure in response to indications that an idle RCP was rotating in the reverse direction. The pump rotating in the reverse direction was the result of the failure of the motor anti-rotation device. Operations personnel responded properly and in accordance with plant procedures during this event and the EFW system operated as designed. A review of this event determined that the time during startup at which the Plant Startup procedure requires EFW to be armed to automatically initiate on loss of all RCPs (i.e., after second pump is started) may be overly conservative since Technical Specifications doesn't require this function to be operable until the plant is at 10 percent reactor power. Plant startup and shutdown procedures will be reviewed against ERIC Design Basis Requirements. If appropriate, procedures will be revised to arm the EFIC initiate on loss of all RCP's later in the startup sequence and disarm this feature earlier in the shutdown. This will be completed by July 15, 1992.

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 One	05000313	92	003	00	00	00	02 OF 03	

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

A. Plant Status

At the time this event occurred, Arkansas Nuclear One, Unit 1 (ANO-1) was in Cold Shutdown with Reactor Coolant System (RCS) [AB] temperature at 263 degrees and RCS pressure at 420 psig. Reactor Coolant Pumps (RCPs) P-32A and P-32D were in service. RCS heatup was in progress in preparation for startup from refueling outage 1R10. The Emergency Feedwater Initiation and Control (EFIC) [BA] system had been armed to automatically actuate the Emergency Feedwater System (EFW) [BA] upon loss of all RCPs after the second RCP was started in accordance with the Plant Startup procedure.

B. Event Description

On April 24, 1992, at approximately 2315, an automatic actuation of the EFW system occurred, as designed, when Operations personnel secured the running RCPs in accordance with plant procedures in response to indications of an idle RCP rotating in the reverse direction.

EFIC monitors Once Through Steam Generator (OTSG) levels and pressures, main feedwater pump status, RCP status and Engineered Safeguards Actuation System [JE] channels 3 and 4 in order to initiate EFW or OTSG isolation should an actuation setpoint be reached. EFW is actuated to protect the core from an overheating condition upon loss of main feedwater or RCP circulation. OTSG isolation is actuated to protect the core from an overcooling condition if a main steam or feed line rupture occurs.

At approximately 2107 on April 24, RCP P-32D was secured in preparation for a motor balancing evolution. At 2109, RCP P-32C was started. After verifying that total RCS flow was normal for two pump operation and that the "zero speed" indicator was annunciated for P-32D, the oil pumps for P-32D were secured. At 2255, Control Room operators received a report from maintenance personnel in the Reactor Building that the P-32D shaft was rotating. Operations personnel started the three P-32D lift oil and backstop oil pumps. At 2315, it was verified that P-32D was rotating in the reverse direction. At this time, Operations personnel secured all running RCPs (P-32A, P-32C) in accordance with abnormal operating procedure 1203.032 (RCP Reverse Rotation). The EFIC system, sensing the loss of all RCPs, automatically actuated the EFW system. The EFW system functioned, as designed, and supplied about 5 inches of water to each OTSG until 2316, at which time Operations personnel overrode the EFIC actuation by closing the steam admission valves for the steam driven EFW pump and placing the handswitch for the electric driven EFW pump in the "pull to lock" position. The plant heatup was terminated to allow repair of P-32D.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)
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Arkansas Nuclear One, Unit One	05000313	92	--	003	--	00	03	03

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

C. Root Cause

P-32D rotating in the reverse direction was the result of the failure of the motor anti-rotation device.

Operator actions taken in response to identification of reverse rotation of P-32D were proper and in accordance with approved plant procedures. The EFIC and EFW systems responded, as designed, to the loss of all RCPs.

A review of this event concluded that the time during heatup at which the Plant Startup procedure requires EFIC to be armed to actuate EFW upon loss of all RCPs (i.e., after the second RCP is started) may be overly conservative since the plant's Technical Specifications do not require this automatic protective function to be operable until the reactor is at 10 percent power.

D. Corrective Actions

P-32D was repaired and the plant was started up and returned to power on May 9, 1992.

Plant startup and shutdown procedures will be reviewed against EFIC Design Basis Requirements. If appropriate, procedures will be revised to arm the EFIC initiate on loss of all RCP's later in the startup sequence and disarm this feature earlier in the shutdown. This will be completed by July 15, 1992.

E. Safety Significance

The reactor was not critical at the time this event occurred. Operator actions taken in response to the identification of reverse rotation of P-32 were proper and in accordance with procedure. The EFIC and EFW systems responded, as designed, to the loss of RCPs. Therefore, there was no safety significance associated with this event.

F. Basis For Reportability

Automatic actuation of the EFW system is reportable pursuant to 10CFR50.73(a)(2)(iv) as an ESF actuation.

G. Additional Information

Energy Industry Information System (EIIS) codes are identified in the text as [XX].

There have been no previous similar events reported as Licensee Event Reports by ANO.