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U. S. Nuclear Regulatory Commission  
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SUBJECT: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Licensee Event Report No. 50-368/90-101-00

Gentlemen:

This voluntary report concerning the inadvertent start of an Emergency Diesel Generator during maintenance as a result of inadequate procedural guidance is being submitted due to its possible generic interest.

Very truly yours,

E. C. Ewing  
General Manager,  
Technical Support  
and Assessment

ECE/RHS/abw  
Attachment

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NRC Form 366  
(9-83)U.S. Nuclear Regulatory Commission  
Approved OMB No. 3150-0104  
Expires: 4/30/92

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit Two DOCKET NUMBER (2) PAGE (3)  
0510101 31 61 8110F1012

TITLE (4) Inadvertent Emergency Diesel Generator Start During the Performance of a Maintenance Activity as a Result of Inadequate Procedural Guidance.

EVENT DATE (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
Month	Day	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
01	22	90	01	01	01	04	06	01	0510101

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5:

(Check one or more of the following) (11)

POWER LEVEL (10)	1	0	0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
				20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
				20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	<input checked="" type="checkbox"/> 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
Richard H. Scheide, Nuclear Safety and Licensing Specialist	Area Code 5101191641-1311010

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)	Month	Day	Year

☐ Yes (If yes, complete Expected Submission Date) ☒ No

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 22, 1990, at approximately 1400, an inadvertent start of an Emergency Diesel Generator occurred. The #2 EDG had been removed from service to perform a lube oil flush. The air start system and the direct current (DC) control power for the EDG had been tagged out. During the performance of the maintenance, it became necessary to 'air roll' the EDG. The air start system was returned to service, and an operator prepared to roll the engine in accordance with an approved procedure. The local control switch was placed in the 'lockout' position and starting air pressure was applied to the engine. At that time, the EDG unexpectedly started. Since the associated Engineered Safeguards bus was energized, the EDG output breaker did not close. The engine was immediately secured by depressing the emergency stop button. An investigation revealed that the EDG lockout function is disabled whenever DC control power is unavailable. The cause of this event was determined to be inadequate procedural guidance. Placards were placed at the EDG control panels warning that the emergency stop button must be depressed prior to rolling the EDGs when DC control power is unavailable. Additionally, the applicable procedures will be revised to include additional guidance for air rolling the EDGs. This information is being submitted as a voluntary report due to its potential generic interest.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Arkansas Nuclear One, Unit Two		Year	Sequential Number	Revision Number	
	051010131618	90	V01	--00	02101012

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

A. Plant Status

At the time of this event, Arkansas Nuclear One, Unit 2 (ANO-2) was operating at approximately 100 percent of rated power.

B. Event Description

On February 22, 1990, at approximately 1400, an inadvertent start of an Emergency Diesel Generator (EDG) [EK] occurred during the performance of a maintenance activity.

The #2 EDG had been removed from service to perform a lube oil flush. The air start system and the direct current (DC) control power for the EDG were tagged out in preparation for the flush. During the performance of the maintenance, it became necessary to 'air roll' the EDG to facilitate the flushing process. The necessary tags were temporarily removed from the air start system and it was returned to service. Using the Emergency Diesel Generator Operations' procedure for guidance, an operator placed the local control switch to the 'lockout' position, and manually overrode the air start solenoids. When starting air was supplied to the EDG, the engine rolled and started. The operator immediately stopped the engine by depressing the emergency stop button. Since the EDG's associated Engineered Safeguards (ES) bus was energized via its' normal power source, the EDG output breaker did not close or attempt to close during this event.

An investigation was conducted which revealed that, with DC control power deenergized, the lockout function of the EDG is disabled. Therefore, when starting air was supplied to the engine, it started normally.

C. Root Cause

The root cause of this event was determined to be inadequate procedural guidance with respect to air rolling the EDGs. Although air rolling of the EDGs is proceduralized, there were no cautions or warnings in the procedure indicating that the lockout function is disabled when DC control power is unavailable.

D. Corrective Action

Warning placards were placed at the EDG control panels which state that the EDGs should not be air rolled with DC control power unavailable unless the emergency stop button is depressed prior to rolling the engine.

This event is also being evaluated to determine the appropriate procedure changes necessary to prevent future inadvertent EDG starts. These procedure changes are scheduled to be completed by August 1, 1990.

Additionally, training will be provided to Operations personnel regarding this event and the lessons learned from it. This training is expected to be completed by July 31, 1990.

E. Safety Significance

This event was not safety significant since normal power to the ES busses as well as the redundant EDG remained operable during the event. Additionally, the #2 EDG was not rendered inoperable by the inadvertent start and could have been expeditiously returned to service, if needed.

F. Additional Information

This event is not considered reportable pursuant to 10CFR50.73 since the inadvertent EDG start was not initiated by an ES signal and because the EDG output breaker did not close or attempt to close during the event.

However, this information is being provided as a voluntary report due to its potential generic interest.

There have been no previous similar events reported by ANO.

The ANO-2 EDGs are Fairbanks Morse model 38TD-1/B.

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