



Entergy Operations

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

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Licensee Event Report 50-368/92-006-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(iv), enclosed is the subject report concerning inadvertent start of an Emergency Diesel Generator.

Very truly yours,

James L. Fisicaro
Director, Licensing

JJF/TFS/mmg

Enclosure

cc: Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
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Arlington, TX 76011-8064

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit Two

DOCKET NUMBER (2) PAGE (3)
050003 6 81 OF 03

TITLE (4) Inadvertent Start Of Emergency Diesel Generator Due To Deficiency In Special Work Plan For Engineered Safety Features Relay Replacement

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)
0	9	92	006	00	1	0	92		050003

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

MODE (9)		(Check one or more of the following) (11)	
POWER	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)
LEVEL	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)
(10) 000	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)

Other (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number
Thomas F. Scott, Nuclear Safety and Licensing Specialist	Area Code 501 964-5000

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

Cause	System	Component	Manufacturer	Reportable to NRC	Cause	System	Component	Manufacturer	Reportable to NRC

SUPPLEMENT REPORT EXPECTED (14)

Yes (If yes, complete Expected Submission Date)	No	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
X					

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

Model MDR relays in the Engineered Safety Features Actuation System of Arkansas Nuclear One Unit 2 were being replaced in accordance with a Special Work Plan. Following installation of a temporary jumper as part of the replacement process for one relay, a lead was lifted. This de-energized the relay being replaced and four other relays at 1345 on September 9, 1992. Relay actuation caused one Emergency Diesel Generator to start, two High Pressure Safety Injection valves to open, and ventilation to the Shutdown Cooling Heat Exchanger Room to be isolated. The root cause for this event was determined to be a deficiency in the instructions for jumper installation. The instructions did not address all existing relay configurations. The Special Work Plan was changed to require evaluation and determination of specific requirements by either Maintenance Engineering or System Engineering personnel prior to installing jumpers. The event was reviewed with personnel responsible for relay replacement. Since equipment functioned properly and there were no adverse consequences, the event was judged to have no safety significance.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LEE NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit Two	05000368	92	006	00	02 OF 03

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 in cold shutdown conditions (Mode 5) with Reactor Coolant System (RCS)[AB] temperature 110 degrees and pressure 15 psia.

B. Event Description

At 1345 on September 9, 1992, an inadvertent start of the "A" Emergency Diesel Generator (EDG)[EK] and actuation of other equipment occurred.

The Engineered Safety Features Actuation System (ESFAS) [JE] auxiliary relay cabinets are part of the Plant Protection System (PPS)[JC] and are used to interface between the PPS cabinet and the Engineered Safety Features (ESF)[JE] actuated equipment. Normally energized subgroup relays provide this interface. When the relays are de-energized, ESF equipment is actuated. Due to concerns with the reliability of model MDR relays manufactured by Potter and Brumfield that resulted from a 10CFR21 notification by Arizona Nuclear Power Project, these relays were being replaced in accordance with a Special Work Plan (SWP).

On September 9, 1992, MDR relay K403A was being replaced. The SWP directed installation of a temporary jumper before lifting a lead that was landed on a "daisy chain" common connection point. The jumper was intended to ensure that the integrity of the "daisy chain" was maintained so that relays in the subgroup remained energized. After the jumper was installed, a terminal screw was loosened. This caused the connection to be broken and four other relays to de-energize. "A" EDG started. Also, two High Pressure Safety Injection (HPSI) [BQ] valves opened and three dampers shut to isolate Shutdown Cooling Heat Exchanger Room ventilation [VF]. Operations personnel immediately shut the two HPSI valves. Shutdown Cooling Heat Exchanger Room ventilation was restored and the EDG was secured.

C. Root Cause

The root cause of this event was determined to be a deficiency in the instructions for installing jumpers around "daisy chain" common connection points. The instructions were not representative of all existing relay configurations. In preparing the Special Work Plan, several random inspections had been performed. These inspections did not find any wiring arrangements that differed from the expected typical configuration. Subsequent investigation revealed that the instructions did not give full guidance for approximately twenty five percent of the existing relays.

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 Two	05000368	92	006	00				03 OF 03

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

D. Corrective Actions

The Special Work Plan was changed to require evaluation and determination of specific requirements by either Maintenance Engineering or System Engineering personnel for any need to jumper "daisy chain" common connection points or when any wire of unknown origin was found at the relay coil connection point.

The revision to the Special Work Plan was reviewed with personnel involved in the activity.

The remaining relays covered by the Special Work Plan were replaced without any other jumper problems.

E. Safety Significance

The ESF relays operated as designed upon loss of voltage to the relay coils. Components actuated by the relays changed to the proper position upon the actuation. All components functioned properly. Considering the fact that there were no adverse consequences resulting from the inadvertent actuation, there was no safety significance associated with the event.

F. Basis For Reportability

The inadvertent start of the EDG was an actuation of an Engineered Safety Feature which was not part of a preplanned sequence. This is reportable per 10CFR50.73(a)(2)(iv). It was also reported per the requirements of 10CFR50.72(b)(2)(ii) at 1532 on September 9, 1992.

G. Additional Information

There has been no previous similar event involving inadvertent EDG start caused by a deficiency in the instructions for installing jumpers reported as a Licensee Event Report by ANO.

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