



Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801
Tel 501 858-5000

July 2, 1997

2CAN079704

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station OP1-17
Washington, DC 20555

Subject: Arkansas Nuclear One - Unit - 2
Docket No. 50-368
License NO. NPF-6
Licensee Event Report 50-368/97-006-00

Gentlemen:

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

Very truly yours,

A handwritten signature in cursive script that reads "Dwight C. Mims".

Dwight C. Mims
Director, Nuclear Safety

DCM/

enclosure

Terrell

9707080393 970702
PDR ADOCK 03000368
S PDR

080023



U. S. NRC
July 2, 1997
PAGE 2

cc: Mr. Ellis W. Merschoff
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

NRC Senior Resident Inspector
Arkansas Nuclear One
P.O. Box 310
London, AR 72847

Institute of Nuclear Power Operations
700 Galleria Parkway
Atlanta, GA 30339-5957

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Arkansas Nuclear One - Unit-2

DOCKET NUMBER (2)

05000368

PAGE (3)

1 OF 3

TITLE (4) Inadvertent Emergency Diesel Generator Start Which Resulted From Inadequate Written Guidance Regarding System Component Testing

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 NAME	DOCKET NUMBER
06	06	97	96	006	00	07	02	97	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (Check one or more) (11)								
		20.402(b)			20.405(c)			X	50.73(a)(2)(iv)	70.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)			50.36(c)(1)				50.73(a)(2)(v)	70.71(c)
		20.405(a)(1)(ii)			50.36(c)(2)				50.73(a)(2)(vii)	OTHER
		20.405(a)(1)(iii)			50.73(a)(2)(i)				50.73(a)(2)(viii)(A)	Specify in
		20.405(a)(1)(iv)			50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)	Abstract Below
		20.405(a)(1)(v)			50.73(a)(2)(iii)				50.73(a)(2)(x)	and in Text

LICENSEE CONTACT FOR THIS LER (12)

NAME

Richard H. Scheide, Nuclear Safety and Licensing Specialist

TELEPHONE NUMBER (Include Area Code)

501-858-4618

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES		NO		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(If yes, complete EXPECTED SUBMISSION DATE)		X					

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 6, 1997, at approximately 0347, an inadvertent start of the #2 Emergency Diesel Generator (EDG) occurred while testing the air start solenoid valves. During a final review of Generic Letter (GL) 96-01 review information, it was determined that the two redundant air start subsystems for each EDG were not being tested separately to verify their ability to respond to an Engineered Safety Features Actuation System initiation signal. Although not required by the Technical Specifications, this verification is within the scope of GL 96-01 recommendations. A job order was prepared to test the air start solenoid valves independently. Even though the test required the air start system isolation valves to be closed, the first time that an air start solenoid valve for the #2 EDG was actuated open, the engine started. Air pressure trapped in the header and filters between the isolation valve and the air start solenoid valve was sufficient to roll and start the engine. The engine started easily because it was still warm and pre-lubed from a previous run. The root cause of this event was inadequate written communication in that the job order did not contain instructions to vent the air start header after isolation. The job order was revised to require venting the header and testing was satisfactorily completed. Appropriate personnel will be trained regarding the lessons learned from this event and the Systems Training Manual will be updated to reflect these lessons.

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.	
FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)	
Arkansas Nuclear One - Unit 2		005000368		YEAR	SEQUENTIAL NUMBER
				97	006
					REVISION NUMBER
					00
				PAGE (3)	
				2 OF 3	

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

A. Plant Status

At the time this event occurred, Arkansas Nuclear One Unit 2 (ANO-2) was in cold shutdown with Reactor Coolant System (RCS)[AB] temperature at approximately 100 degrees. Refueling outage 2R12 was in progress.

B. Event Description

On June 6, 1997, at approximately 0347, an inadvertent start of the #2 Emergency Diesel Generator (EDG)[EK] occurred while testing the air start solenoid valves.

The two EDGs are equipped with their own independent air start systems. Each air start system is made up of two subsystems containing redundant air receivers, compressors, air start solenoids, and associated valves and piping.

During a final review of Generic Letter 96-01 (Testing Of Safety-Related Logic Circuits) review information, a deficiency was identified regarding the testing methods for the EDG starting air systems. Specifically, it was determined that the two redundant air start subsystems for each EDG were not being tested separately to verify their ability to respond to an Engineered Safety Features Actuation System initiation signal. Although not required by Technical Specifications, this verification is within the scope of GL 96-01 testing recommendations.

Since the required testing was of a simple nature, a decision was made to perform it under the control of the Job Order process. The job order required that the starting air system be isolated while the air start solenoids were being tested to prevent needless multiple starts of the EDG. However, during performance of the test, the first time that an air start solenoid for the #2 EDG was energized (opened), the EDG started. The output circuit breaker did not close since its associated 4160 VAC bus was energized. It was immediately evident to the personnel performing the test that air pressure trapped in the header and filters between the isolation valve and the air start solenoid had been sufficient to roll the engine. The engine started easily because it was still warm and pre-lubed from a previous run. The engine was secured and the testing was stopped.

C. Root Cause

The root cause of this event was determined to be inadequate written communication. The job order steps were followed as written, however, they did not include instructions for venting the isolated air start header. It was recognized by personnel preparing the work instructions that a section of the air start

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.	
FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)	
Arkansas Nuclear One - Unit 2		005000368		YEAR	SEQUENTIAL NUMBER
				97	006
				REVISION NUMBER	PAGE (3)
				00	3 OF 3

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

header would remain pressurized after the system was isolated, but it was not believed that the volume of air remaining in the header would be sufficient to start the engine.

D. Corrective Actions

The job order was revised to include instructions to vent the air start header after isolation and testing was satisfactorily completed.

Appropriate procedures regarding EDG operation and testing will be revised by August 1, 1997, to reflect the lessons learned from this event.

System Engineers for both ANO-1 and ANO-2 will be trained on the lessons learned from this event. These actions will be completed by September 24, 1997.

E. Safety Significance

There was no damage to the #2 EDG as a result of the inadvertent start and the #1 EDG remained operable throughout the event. Therefore, this condition was of no safety significance.

F. Basis for Reportability

The #2 EDG was unintentionally started via ESFA5 logic during the performance of a test. Since the EDG was not properly removed from service during the test, this event is reportable pursuant to 10CFR50.73(a)(2)(iv) as an ESF actuation.

This event was also reported to the NRC Operations Center at 0730 on June 6, 1997, in accordance with 10CFR50.72(B)(2)(ii).

G. Additional Information

There have been no similar LERs reported by ANO in which inadvertent EDG starts occurred as a result of improperly removing the air start system from service.

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