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Subject: Arkansas Nuclear One - Unit - 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/1999-004-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), enclosed is the subject report concerning the Fuel Handling Area Ventilation System.

Very truly yours,

Jimmy D. Vandergrift
Director, Nuclear Safety

JDV/tfs

enclosure

IE22

cc: Mr. Ellis W. Merschoff
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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Arkansas Nuclear One - Unit 1	05000313	1 OF 4

TITLE (4) Fuel Handling Area Ventilation System Flow Rate Below Technical Specifications Requirement While Irradiated Fuel Movement Was In Progress Due To Inappropriate Installation Of A Temporary Device To Restrain The Exhaust Damper Open And A Work Plan 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 NAME	DOCKET NUMBER
09	28	1999	1999	004	00	10	27	1999	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (Check one or more) (11)							
POWER LEVEL (10)	000		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)		OTHER
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Specify in Abstract Below and in Text
			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)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Thomas F. Scott, Nuclear Safety and Licensing Specialist	501-858-4623

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On September 28, 1999, the flow rate of the Fuel Handling Area Ventilation System was below the Technical Specifications requirement while irradiated fuel was being moved in the Spent Fuel Pool. Ventilation flow rate was reduced below requirements at approximately 1810, and fuel handling was stopped at 1938 when the condition was discovered. A rope had been installed to restrain the ventilation exhaust damper in the open position during an outage of an electrical bus. The rope allowed the damper to close enough to reduce flow rate by automatic adjustment of fan blade pitch due to system backpressure. Installation of the rope was not addressed by the work plan (procedure) for the bus outage or authorized under the administrative controls for temporary alterations. The root causes of this condition are inappropriate work practices by the individual installing the restraining device and the deficient work plan. Lessons learned from this event are being reviewed with Operations personnel of both ANO units. The deficient work plan will be corrected and other work plans for bus outages will be reviewed prior to their next use to verify adequate controls for temporary alterations.

A. Plant Status

At the time of this event, Arkansas Nuclear One Unit 1 (ANO-1) was in a refueling shutdown condition. The reactor core was being reloaded with fuel assemblies from the Spent Fuel Pool (SFP) [DA].

B. Event Description

On September 28, 1999, the flow rate of the Fuel Handling Area Ventilation System [VF] was below Technical Specifications (TS) requirements while irradiated fuel was being moved in the SFP.

Ventilation from the fuel handling area is exhausted to the Reactor Building (RB) [NH] flutes through a multi-filter unit consisting of a roughing filter, a HEPA filter, a charcoal adsorber, and two fans, one of which serves as a standby. Technical Specification 3.15 requires the system to be in operation, with a flow rate within ten percent of the design value of 39,000 CFM (between 35,100 and 42,900 CFM), whenever irradiated fuel handling operations are in progress in the fuel handling area (SFP) of the Auxiliary Building [NF].

At 1752 on September 28, 1999, fuel-handling activities in the RB and SFP resumed. Subsequently, while taking normal log readings on the radiation monitors for the ventilation flow path, the Operations Shift Engineer noticed that the flow rate for the fuel handling ventilation pathway was below the minimum requirement at approximately 20,000 CFM. Fuel movement was suspended at 1938. An investigation revealed that a rope was being used to maintain the outlet damper for the operating exhaust fan open to facilitate maintenance on an electrical bus while fuel movement was in progress. The electrical bus supplies a solenoid valve in the air supply that normally keeps the exhaust damper open. The bus had been de-energized at 1800. The temporary rope allowed the damper to close enough to increase backpressure on the fan with a resulting automatic pneumatic adjustment to fan blade pitch to compensate with lower flow. The ventilation flow rate was determined to have degraded below the minimum requirement at approximately 1810. Fuel handling was stopped at 1938 after the condition was discovered. The electrical bus was restored to service at 2057. At 2105, fuel handling in the SFP resumed with ventilation flow rate meeting Technical Specifications requirements.

C. Root Causes

The rope being used as a restraining device for the damper was not controlled by the work plan (procedure) for the bus outage and was not authorized under the temporary alteration program. The individual installing the rope, a licensed operator, recognized the work plan deficiency but did not recognize that the activity was a temporary alteration. He did not take action to ensure that the work plan was corrected or that installation was reviewed and

approved. One factor that may have influenced the decision not to use the temporary alteration process was the unusual plant configuration with multiple outage activities in progress. Also, the individual was aware of the use of a rope to restrain a similar damper during a previous outage. On that occasion, the device had been controlled by a procedure and its failure may have had a less significant impact on system operation. The individual stated that time pressure and outage schedule adherence were not factors contributing to the event. One root cause of this event is attributed to inappropriate work practices by the individual who installed the damper restraining device.

The second root cause of this event was a deficiency in the work plan being used to control the electrical bus outage. The work plan did not identify the impact of the power outage on the Fuel Handling Area Ventilation System. The specific reason that this impact was overlooked could not be determined by the individuals involved in the preparation of the work plan.

D. Corrective Actions

This event will be reviewed with appropriate Operations personnel from both ANO units by December 17, 1999 to provide lessons learned, including requirements concerning installation of devices that are not part of the approved design configuration of the plant.

The deficient work plan will be corrected and other bus outage work plans will be reviewed and revised, as appropriate, prior to their next use to ensure that controls for temporary alterations are adequate. Bus outage work is not anticipated until the outage scheduled to start in March 2001 for ANO-1 and September 2000 for ANO-2.

E. Safety Significance

The Fuel Handling Area Ventilation System is designed to filter the Auxiliary Building atmosphere during fuel handling operations to limit the release of activity should a fuel handling accident occur. Operation of the fans significantly different from the design flow rate changes the removal efficiency of the HEPA filter and charcoal adsorbers. The fuel handling accident analysis contained in the Safety Analysis Report documents that total integrated doses are a small fraction (less than ten percent) of 10CFR100 limits assuming filter efficiencies for iodine removal are 90 percent for organic and 70 percent for inorganic. Technical Specifications surveillance tests demonstrate greater than 99 percent DOP and halogenated hydrocarbon removal for HEPA filter and charcoal adsorber banks when tested within 10 percent of design flow. Surveillance test results of laboratory carbon sample analysis demonstrate greater than 90 percent radioactive methyl iodine removal at a velocity within 20 percent of design. While the deviation from acceptable system flow rate was significant, this condition is judged to have had minimal actual safety significance because of its short duration.

F. Basis for Reportability

Technical Specification 3.15 requires that, if the Fuel Handling Area Ventilation flow rate is not within ten percent of the design value, "irradiated fuel movement shall not be started (any irradiated fuel assembly movement in progress may be completed)." Since more than one fuel assembly was moved between 1810 (when flow rate was reduced below the minimum value) and 1938, operation prohibited by Technical Specifications resulted. This report is being submitted in accordance with 10CFR50.73(a)(2)(i)(B).

G. Additional Information

There have been no previous similar Licensee Event Reports submitted by ANO.

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