

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Robert E. Ginna, Unit 1

DOCKET NUMBER (2)
0 5 0 0 0 2 4 4

PAGE (3)
1 OF 0 4

TITLE (4)
Exhaust Fan Damper Failure During Fuel Movement

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)		
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THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)

OPERATING MODE (9) N	20.402(b)	20.408(a)	80.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 1010	20.408(a)(1)(i)	80.30(a)(1)	X 80.73(a)(2)(v)	73.71(a)
	20.408(a)(1)(ii)	80.30(a)(2)	80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
	20.408(a)(1)(iii)	X 80.73(a)(2)(i)	80.73(a)(2)(vii)(A)	
	20.408(a)(1)(iv)	80.73(a)(2)(ii)	80.73(a)(2)(vii)(B)	
	20.408(a)(1)(v)	80.73(a)(2)(iii)	80.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: Thomas A. Meyer, Technical Manager

TELEPHONE NUMBER: 315 524-4446

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS
B	VIF	DIMP	J073	N					
E	VIF	FIS	D295	N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

At approximately 1300 hours on October 5, 1984, an inspection of the ductwork of the IC Auxiliary Building Exhaust Fan revealed that the discharge damper was not cycling with the actuator arm. Technical Specifications require this exhaust fan to be operating and the spent fuel pit charcoal filter system to be operable whenever moving irradiated fuel assemblies. Contrary to these Technical Specifications fuel was handled on several occasions from August 7, 1984, to October 4, 1984. With the discharge damper failed in the closed position the Auxiliary Building pressure was slightly positive with respect to barometric pressure. This condition set up the possibility for an unfiltered radioactive release following a fuel handling accident. Calculations have been performed which demonstrate that the radiological consequences of this event are negligible when considering the decay time since the fuel was last irradiated. Corrective actions included a "stopwork" for all fuel handling until the damper could be repaired, repairing the damper, adjusting a flow switch that was found inoperable, changing procedures to ensure compliance with Technical Specifications and performing total fan flow and bypass flow determinations to ensure compliance with Technical Specifications.

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TEXT (If more space is required, use additional NRC Form 288A's) (17)

At approximately 1300 hours on October 5, 1984, the 1C Auxiliary Building Exhaust Fan was removed from service to facilitate an internal inspection of the duct work. The 1C exhaust fan takes its suction from the area around the spent fuel pit through roughing and charcoal filters and discharges through HEPA filters to the main plant vent. The inspection of the ductwork revealed that the discharge damper was not cycling with the actuator arm due to a broken shaft coupling.

With the discharge damper failed in the closed position the 1C exhaust fan was inoperable. Technical Specifications requires the 1C auxiliary building exhaust fan to be operating while moving irradiated fuel in the operating floor area of the auxiliary building. Additionally, since the 1C exhaust fan draws through the spent fuel pit charcoal adsorbers they were also inoperable. Technical Specifications requires charcoal adsorbers to be installed in the ventilation system from the spent fuel pit area and to be operable while moving irradiated fuel. Operable, in this case, as defined by Technical Specifications, is the ability to pass 75% of the total air flow as measured with a complete set of new adsorbers, 99% of the measured air flow must pass through the adsorber (i.e. not greater than 1% bypass flow), and a laboratory analysis demonstrates at least 90% radioactive methyl iodide removal. It can be assumed that with the discharge damper closed the 75% of the total flow condition was not met and it was later demonstrated that the bypass flow exceeded 1%. Contrary to these Technical Specifications irradiated fuel was moved in the spent fuel pit on October 4, 1984, and during the periods of August 7, 1984, through August 10, 1984, and September 5, 1984, through September 7, 1984.

Complicating the discovery of this broken damper was an inoperable flow switch which failed to give a low flow alarm for the 1C exhaust fan. Even with the damper closed the 1C exhaust fan still forced sufficient quantities of air through the damper to keep the flow switch from indicating that a low flow condition existed. The flow switch was not included as part of any periodic surveillance test nor was it part of a preventative maintenance program inasmuch as it provides only a gross measure of flow and is not designed to monitor compliance with the limiting condition for operation.

The only piece of evidence which indicated that a problem may have existed with the ventilation system, for which other potential causes were not identified, was a manometer located approximately 100 feet away from the spent fuel pit. The manometer, which measures auxiliary building pressure relative to barometric pressure, was discovered on October 1, 1984, to be indicating a slightly positive pressure in the auxiliary building. This manometer reading was discovered during a routine inspection of the Auxiliary Building, even though this instrument reading is not normally observed or recorded. A maintenance work order was initiated on October 1, 1984, to investigate the cause of the positive manometer reading.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

During the period of time from October 1, 1984, until the mispositioned damper was discovered on October 5, 1984, several independent investigations occurred in an attempt to determine the cause for the positive pressure condition. On October 1, 1984, the proper alignment of the ventilation system was verified per procedure, assuring all necessary fans were running and all dampers were correctly positioned. Since it was not known at this time that the exhaust fan discharge damper coupling was broken, the actuator piston indicated that the damper was open. It was noted that the flow into the spent fuel pit roughing filters was degraded but it was concluded that this may have been due to the pressure imbalance between the Intermediate and Auxiliary Buildings. On October 2, 1984, proper operation of the manometer was verified. On October 3, 1984, the proper alignment of the auxiliary and intermediate building ventilation systems was again verified. The applicable steps in a procedure that ensures the necessary prerequisites are achieved prior to commencing fuel movement were also performed. A ventilation filter pressure drop log was also reviewed and a conclusion was reached that the filters showed indication of plugging but they were not significantly degraded. On October 4, 1984, it was again verified that the necessary prerequisites were established prior to commencing fuel movement.

Even though the positive pressure condition still existed it was decided that fuel movement could occur concurrent with the continuing investigation. This investigation revealed that the filters for the 1A Auxiliary Building Supply Fan were plugged. On the afternoon of October 4, 1984, the filters were replaced with new filters and unexplainably the manometer indicated a negative pressure condition after filter replacement.

This event was also reportable under the criteria of 10CFR50.73(a)(2)(v)(C) "any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material". With the damper in the closed position the radioactive release resulting from a fuel handling accident would not have the benefit of being filtered with a charcoal adsorber. Charcoal would remove at least 90% of the radioactive iodine and as such reduce the potential thyroid dose received by the general public at the exclusion area boundary. The charcoal adsorbers however would do nothing to reduce the whole body exposure. Calculations were made of the off-site exposure assuming the total failure of the highest powered design basis fuel assembly in the spent fuel pit. These calculations were performed assuming that the assembly had decayed for a period of 150 days and 210 days since its last irradiation. These times were chosen since they appropriately bound all fuel movements conducted from August through October 5, 1984. After these time periods, the iodine in the assembly would have virtually decayed away.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

In fact, these calculations show that the two-hour thyroid dose at the exclusion area boundary would be .32 mRem at 150 days and only .002 mRem at 210 days for an unfiltered release. The whole body exposure was calculated to be less than 1 mRem for the same unfiltered fuel handling accident. Thus, the radiological consequences of this event are negligible when considering the decay time from shutdown until the fuel handling occurred in August through October.

Short term corrective actions that have been taken as a result of the discovery of this event on October 5, 1984, are as follows:

- 1) A formal "Stopwork" was issued for all irradiated fuel movement until the discharge damper could be repaired.
- 2) The broken coupling was repaired on October 5, 1984.
- 3) The flow switch was adjusted and verified operable.
- 4) Procedure changes were made that would:
 - a) Clarify the need for charcoal filter testing.
 - b) Verify that the low flow alarm on the LC exhaust fan is not actuated prior to moving fuel.
 - c) Require a total fan flow determination within seven days prior to commencing fuel movement.
 - d) Ensure the auxiliary building differential pressure is negative during fuel movement.
- 5) A determination of total fan flow was accomplished and compliance with the applicable Technical Specification was verified.
- 6) A determination of bypass flow was made on October 17, 1984, which demonstrated that the blank-off plates were improperly installed in early August. Thus, compliance with this Technical Specification was not achieved. The blank-off plates were then properly installed and bypass flow was determined to meet the Technical Specification requirements.

Long term corrective actions will be addressed in the response to the violations contained in Inspection Report 50-244/84-23.



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November 2, 1984

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

Subject: LER 84-012, Damper on 1C Auxiliary Building Exhaust Fan
Closed During Fuel Movement

R. E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Gentlemen:

In accordance with 10CFR50.73 "Licensee Event Report System" item (a)(2)(i)(B), which requests a report of "Any operation or condition prohibited by the plant's Technical Specifications" and item (a)(2)(v)(C) which requests a report of "Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material" the attached Licensee Event Report LER 84-012 is hereby submitted.

Very truly yours,

Bruce A. Snow
for Roger W. Kober

xc: U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

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