

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) HOPE CREEK GENERATING STATION	DOCKET NUMBER (2) 0 5 0 0 0 3 5 4 1	PAGE (3) OF 4
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TITLE (4) DISCOVERY OF CRACKING IN A FRVS RECIRCULATION FAN DUCTWORK WITH A SECOND FRVS FAN OUT OF SERVICE - DESIGN 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 NAMES		DOCKET NUMBER(S)											
0	7	3	0	8	8	8	0	2	1	0	0	0	8	2	9	8	8	0	5	0	0	0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)									
POWER LEVEL (10) 1, 0, 0	20.402(b)	20.405(e)	50.73(a)(2)(iv)	73.71(b)						
	20.405(a)(1)(iii)	50.36(e)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	73.71(c)						
	20.405(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 356A)						
	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)(ix)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Ann Merrell		AREA CODE 6 0 9	 3 3 9 - 5 2 3 9

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	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

ABSTRACT (Limit to 1800 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On July 28, 1988 the plant was in OPERATIONAL CONDITION 1 (Power Operation) at 100% power generating 1064 MWe when cracks were found in the ductwork of the "D" FRVS unit while performing preventive maintenance and the unit was declared inoperable. On July 30, 1988 at 0045 hours during operator rounds, cracks were found in the flow straightener area of the "F" FRVS unit. The "F" FRVS unit was declared inoperable and the Action Statement of Technical Specification 3.6.5.3 was entered. Both FRVS units were modified to preclude future failures and restored to service by August 5, 1988, prior to the expiration of the seven (7) day Technical Specification Action Statement period. The root cause of this occurrence was a design deficiency of the FRVS ductwork which was not strong enough to withstand the pressure pulsations caused by the air flow. This constant cycling has resulted in fatigue failures. Corrective actions include the addition of stiffeners and support to the flow straighteners and transition ductwork of the FRVS units and a future redesign of the ductwork.

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

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
Filtration, Recirculation and Ventilation System (FRVS) (EIIS Designator: BH)

IDENTIFICATION OF OCCURRENCE

Discovery of Cracking in a FRVS Recirculation Fan Ductwork With A Second FRVS Fan Out Of Service - Design Deficiency

Event Date: July 30, 1988

Event Time 0045 Hours

This LER was initiated by Incident Report No. 88-115

CONDITIONS PRIOR TO OCCURRENCE

The Plant was in OPERATIONAL CONDITION 1 (Power Operation) at 100% power generating 1064 MWe.

DESCRIPTION OF OCCURRENCE

On July 28, 1988 cracks were found in the ductwork of the "D" FRVS unit while performing preventive maintenance and the unit was declared inoperable. On July 30, 1988 at 0045 hours during operator rounds, cracks were found in the flow straightener area of the "F" FRVS unit. The "F" FRVS unit was declared inoperable and the Action Statement of Technical Specification 3.6.5.3 was entered. Both FRVS units were modified to preclude future failures and restored to service by August 5, 1988, prior to the expiration of the seven (7) day Technical Specification Action Statement period.

APPARENT CAUSE OF OCCURRENCE

The root cause of this occurrence was a known design deficiency of the FRVS ductwork which was not strong enough to withstand the pressure pulsations caused by the air flow. This constant cycling has resulted in fatigue failures.

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

ANALYSIS OF OCCURRENCE

In December 1987 external cracking was observed in several FRVS units in the transition ductwork between the fan and charcoal filter unit where the flow distribution vanes are attached. When the cracking was examined, it was determined that five of the six units could remain in service while awaiting repairs since no imminent failures were perceived. The sixth unit was declared inoperable. A design change to add stiffeners and support to the flow straighteners and transition ductwork of the units requiring earliest repairs was issued. A Safety Evaluation of the condition of the units concluded that they would continue to operate in the event of any design basis accident.

The repairs to the FRVS units were proceeding as operational constraints permitted. The "B", "C" and "E" units had been repaired at the time of this event. Subsequent inspection by engineering of the cracking observed in the "F" unit determined it to be similar to that which had been observed previously in other units but of a greater magnitude. A four hour report was made pursuant to the provisions of 10CFR50.72(B)(2)(iii)(C) as further clarified by NRC Information Notice 85-27.

PREVIOUS OCCURRENCES

The previous occurrences of cracking in the FRVS ductwork are described above.

SAFETY ASSESSMENT

Based on the safety evaluation described above and compliance with the plant Technical Specifications, the health and safety of the public were not compromised by this event.

REPORTABILITY

This report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v)(C) as further clarified by NRC Information Notice 85-27.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

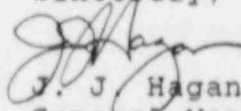
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TEXT (If more space is required, use additional NRC Form 3054's) (17)

CORRECTIVE ACTIONS

1. The design change described above was completed on all units by August 17, 1988.
2. A redesign of the transition ductwork fabricated of heavier gage metal is under evaluation.

Sincerely,



J. J. Hagan
General Manager -
Hope Creek Operations

AM:

SORC Mtg. 88-114



Public Service Electric and Gas Company P.O. Box L Hancocks Bridge, New Jersey 08038
Hope Creek Operations

August 29, 1988

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

Dear Sir:

HOPE CREEK GENERATING STATION
DOCKET NO. 50-354
UNIT NO. 1
LICENSEE MAINT REPORT 88-021-00

This Licensee Event Report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v).

Sincerely,

A handwritten signature in dark ink, appearing to read "J. J. Hagan", is written over the typed name.

J. J. Hagan
General Manager -
Hope Creek Operations

AM:

Attachment
SORC Mtg. 88-114

C Distribution