PSE&G

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Nuclear Business Unit

MAR 29 1996

LR-N96090

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 EVENT REPORT NO. 96-006-00

This Licensee Event Report entitled "Incorrect Installation of Backdraft Isolation Dampers Resulted in Operation Outside the Design Basis of the Filtration Recirculation Ventilation System" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(ii)(B).

Sincerely,

Mark E. Reddemann
General Manager -
Hope Creek Operations

JWK
SORC Mtg. 96-041

C Distribution
LER File

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NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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)

(See reverse for required number of digits/characters for each block)

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TITLE (4)

Incorrect Installation of Backdraft Isolation Dampers Resulted in Operation Outside the Design Basis of the Filtration Recirculation Ventilation System.

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
01	20	97	96	-- 006 --	00	03	29	96	FACILITY NAME	DOCKET NUMBER

		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
OPERATING MODE (9)	5	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(viii)
POWER LEVEL (10)	0	20.2203(a)(1)	20.2203(a)(3)(i)	X 50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Lisa Kepley, Licensing Engineer	(609) 339-1106

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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).	NO		05	10	96

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

On January 20, 1992, the Filtration Recirculation Ventilation System (FRVS) supply side backdraft isolation dampers within the reactor building were identified as being installed backwards. These dampers are installed in compartments with potential high energy line breaks. From initial plant startup until March 1996, the misoriented supply side backdraft isolation dampers resulted in operation outside of the plant's design basis. This condition should have been reported under 10CFR50.72(b)(1)(ii)(B) and 10CFR50.73(a)(2)(ii)(B) in January, 1992. The proper notification was made to the NRC on March 4, 1996.

A multi-disciplinary team has been assembled to assess the root cause of the failure to resolve the incorrect installation of the backdraft isolation dampers. Due to the scope of this assessment, the results of the root cause analysis will be provided in a supplement to this LER. Corrective actions to date include restoring the backdraft isolation dampers to their design configuration and reviewing select shutdown safety systems and associated documentation for similar occurrences.

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

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
Filtration Recirculation Ventilation System: GU, EIIS Identifier: BH

IDENTIFICATION OF OCCURRENCE

Event Occurrence: January 20, 1992
Discovery Date: March 4, 1996

CONDITIONS PRIOR TO OCCURRENCE

Event Date: Plant in OPERATIONAL CONDITION 1 (Power Operation)
Discovery Date: Plant in OPERATIONAL CONDITION 5 (Refueling)

DESCRIPTION OF OCCURRENCE

On January 20, 1992, the Filtration Recirculation Ventilation System (FRVS) supply side backdraft isolation dampers for rooms within the reactor building with the potential to experience a high energy line break (HELB), were identified to be installed in the reverse direction. On January 21, 1992, a Discrepancy Evaluation Form (DEF) was initiated which documented the discrepancy between the Hope Creek Generating Station's Updated Final Safety Analysis Report (UFSAR) and the as-built configuration of the plant. On January 29, 1992, in accordance with the DEF process, the Probabilistic Risk Assessment (PRA) of the DEF was performed which concluded that the probability of an event that could cause steam to affect other rooms in the reactor building was approximately 1x10-6 per year. In addition, based on engineering judgment, it was concluded that steam from a HELB was not enough to adversely affect equipment in the other rooms. This assessment was based on successful isolation of the postulated HELB.

During the maintenance outage of March 1992, the supply side backdraft isolation dampers for the Main Steam Tunnel were restored to the proper configuration. The remaining backdraft isolation dampers were left as is. An engineering evaluation to document the effect of the misoriented backdraft isolation dampers was completed in August of 1992.

The evaluation concluded that the ability to safely attain and maintain plant shutdown was not compromised by the misorientation of the supply side backdraft isolation dampers.

DESCRIPTION OF OCCURRENCE (continued)

On March 1, 1996, prior to the completion of the Hope Creek Generating Station's sixth refueling outage, the misoriented supply side backdraft isolation damper issue was re-reviewed. As a result, it was determined that from initial plant startup until March 1996 the misoriented supply side backdraft isolation dampers resulted in Hope Creek Generating Station being operated outside of its design basis. During the investigation of the 1992 event, it was determined that the condition had not been reported to the NRC per the requirements of either 10CFR50.72(b)(1)(ii)(B) or 10CFR50.73(a)(2)(ii)(B). As a result, notification was made to the NRC on March 4, 1996.

ANALYSIS OF OCCURRENCE

Backdraft isolation dampers are installed in pairs and in series in the supply and exhaust ductwork to compartments containing high energy lines. The design basis of the backdraft isolation dampers is to provide a means to isolate rooms containing high energy lines from rooms connected via ventilation ductwork. In the event of a high energy line break, the backdraft isolation dampers close to prevent the exposure of equipment in connected rooms to abnormal conditions resulting from the break which could potentially degrade the capability of that equipment to perform its intended safety function.

A multi-disciplinary root cause analysis team has been assembled to evaluate the organizations' failure to resolve the incorrect installation of the backdraft isolation dampers in a timely manner. The team is currently examining the basis and logic for deferring corrective actions on the backdraft isolation dampers following discovery of the incorrect installation.

CAUSE OF OCCURRENCE

The initial installation of the backdraft isolation dampers was in error. The cause of failure to implement timely corrective actions will be provided in a supplement to this LER.

ASSESSMENT OF SAFETY CONSEQUENCES

An assessment of the safety consequences of this condition determined that the safety significance of this condition was minimal. An engineering evaluation to assess the effect of the misoriented backdraft isolation dampers on equipment operability had been previously completed in August of 1992.

The evaluation considered potential exposure of equipment to conditions resulting from a postulated high energy line break. These resulting conditions were then evaluated against the environmental qualifications. These conditions included temperature, pressure, humidity, and radiation. Temperature was judged to be the most critical environmental parameter potentially affecting equipment operability.

The analysis concluded that the ability of the most limiting components to perform their intended function was not compromised by the postulated temperature that would result from a HELB with the backdraft isolation dampers in the reversed configuration. Therefore, the ability to safely attain and maintain plant shutdown was not compromised by the potential effects of a high energy line break.

The approach taken in 1992 appears to be in accordance with the guidelines of Generic Letter 88-07 and reasonable assurance of operability of the equipment within interconnected rooms was demonstrated at the time. However, proper reporting of the event and timely corrective action in accordance with 10CFR50 Appendix B Criterion XVI were not accomplished.

PREVIOUS OCCURRENCES

Two previous occurrences that are similar in nature to the supply side backdraft isolation damper issue have been identified. Licensee Event Report (LER) 95-037-00, documented the Safety Auxiliary Cooling System (SACS) operating below the design basis temperature limit as described in the UFSAR. The cause of this occurrence was determined to be ineffective and untimely implementation of the Corrective Action Program regarding the design of SACS during winter operations. The HCGS's new Corrective Action Program, put into place in July of 1995, was credited as a corrective action to address the cause of the event.

LER 95-038-02 documented the failure of a snubber on the Residual Heat Removal (RHR) shutdown cooling line which had failed twice in the past. The Hope Creek Generating Station's new Corrective Action Program was also credited as a corrective action to address the cause of this event.

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The corrective action program improvements referenced in the above similar events were not in place at the time this event was first discovered. Therefore, it was not possible for the corrective actions from those events to have precluded this condition. However, the Hope Creek Generating Station is confident that adequate and timely corrective actions will be implemented through the new corrective action process if similar conditions are identified.

CORRECTIVE ACTIONS

On March 4, 1996, a notification was made to the NRC of the previously missed 10CFR50.72 report.

The orientation of the supply side backdraft isolation dampers has been corrected.

A multi-disciplinary team has been assembled to determine the root cause of the failure to resolve the incorrect installation of the backdraft isolation dampers in a timely manner. The root cause of this event and resultant corrective actions will be provided in a supplement to this LER. The expected submission date for this supplement is May 10, 1996.

A review of Engineering Evaluations, open Discrepancy Evaluation Forms (DEFs), open Design Change Requests (DCRs), open Design Change Packages (DCPs), and a percentage of closed DEFs is in progress for selected safe shutdown and risk significant systems. This review will determine if there are other outstanding similar issues. The results of this review will be included in the supplement to this LER.