

JUL 08 2005

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U. S. Nuclear Regulatory Commission
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Washington, DC 20555

LER 354/2005-004-00
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NO. NPF-57
DOCKET NO. 50-354

This Licensee Event Report entitled, "A Control Room Emergency Filtration (CREF) Train Inoperable with B CREF Out Of Service," is being submitted pursuant to the requirement of 10CFR50.73(a)(2)(i)(B) and 10CFR50.73(a)(2)(v)(D).

Sincerely,

A handwritten signature in black ink that reads "Michael J. Massaro".

Michael J. Massaro
Plant Manager - Hope Creek

Attachment

BJT

C Distribution
LER File 3.7

Handwritten initials "JE22" in black ink, located in the bottom right corner of the page.

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Hope Creek Generating Station	2. DOCKET NUMBER 05000354	3. PAGE 1 OF 4
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4. TITLE
A Control Room Emergency Filtration (CREF) Train Inoperable with B CREF Out Of Service

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	09	2005	2005	- 004 -	00	07	08	2005	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)																																				
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12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Brian Thomas, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 856-339-2022
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	KM	CHU	C150	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE MONTH: DAY: YEAR:
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On May 12, 2005, at approximately 1020 hours, plant personnel reported that the guide vane pivot arm for the 1AK400 chiller appeared to have slipped. The 1AK400 chiller supports the 'A' Control Room Emergency Filtration (CREF) train. At that time, the 1BK400 chiller (which supports the 'B' CREF train) was removed from service for maintenance. A follow up operability assessment performed several weeks later concluded that with the guide vane pivot arm slippage, the 1AK400 chiller was not capable of performing its design function of maintaining temperatures in the control room envelope. A review of plant data determined that the guide vane slippage for the 1AK400 chiller most likely started at approximately 0950 hours on May 9, 2005. Therefore, the 'A' CREF train was inoperable from May 9 to May 12. With the 'B' CREF train inoperable during this same time period, Technical Specification (TS) 3.0.3 would have been applicable for having both trains of CREF inoperable.

The slippage of the 1AK400 guide vane actuator arm was the result of loose set screws on the drive arm and vane-actuating arm. Corrective actions include corrective maintenance completed to restore the 'A' CREF chiller, maintenance procedure revision, lesson learned communication, and assessment of maintenance technician training changes.

This event is being reported in accordance with 10CFR50.73(a)(2)(i)(B), as "a condition which was prohibited by technical specifications," and 10CFR50.73(a)(2)(v)(D), "any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to: mitigate the consequences of an accident."

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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)

Chilled Water System {KM}*

Control Room Emergency Filtration {VI}*

*Energy Industry Identification System {EIIIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Date: May 9, 2005

Discovery Date: May 12, 2005

CONDITIONS PRIOR TO OCCURRENCE

Hope Creek was in operational condition 1 with reactor power at 100%. During the period that the 'A' control room emergency filtration (CREF) train was determined to be inoperable, the 'B' CREF train was out of service for maintenance. There was no other equipment out of service that impacted this event.

DESCRIPTION OF OCCURRENCE

On May 12, 2005, at approximately 1020 hours, plant personnel reported that the guide vane pivot arm for the 1AK400 chiller {KM/CHU} appeared to have slipped. The 1AK400 chiller supports the 'A' CREF train {VI}. At that time, the 1BK400 chiller, which supports the 'B' CREF train, was removed from service for maintenance. At approximately 2004 hours, the 1AK400 was stopped to investigate. Report from the field identified minor slippage but the guide vanes appeared to be closed. At 2008 hours, the 1AK400 was placed in service to verify normal start capability. Based upon these actions, plant personnel assessed that the 1AK400 was operable but degraded with the guide vane pivot arm slippage on May 12, 2005.

At 2118 hours, the 'B' CREF train was returned to service. At 2150 hours, the 1AK400 chiller was removed from service to commence repair activities. Maintenance on the 1AK400 chiller was completed at 2213 hours and the 'A' CREF train was restored to operable status at 2253 hours.

Subsequent to the 1AK400 chiller being declared operable, a follow up operability assessment was performed several weeks later that concluded with the guide vane pivot arm slippage, the 1AK400 chiller was not capable of performing its design function of maintaining temperatures in the control room envelope. A review of plant data determined that the guide vane slippage for the 1AK400 chiller most likely started at approximately 0950 hours on May 9, 2005. Therefore, the 'A' CREF train was inoperable from May 9 to May 12. With the 'B' CREF train inoperable during this same time period, Technical Specification (TS) 3.0.3 would have been applicable for having both trains of CREF inoperable. TS 3.0.3 requires that within one hour action shall be initiated to place the unit in an operational condition in which the Specification does not apply. Hope Creek was in operation condition 1 through the period of time both trains of CREF were subsequently determined to be inoperable.

This event is being reported in accordance with 10CFR50.73(a)(2)(i)(B), as "a condition which was prohibited by technical specifications," and 10CFR50.73(a)(2)(v)(D), "any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to: mitigate the consequences of an accident."

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CAUSE OF OCCURRENCE

The slippage of the 1AK400 guide vane actuator arm was the result of loose set screws on the drive arm and vane-actuating arm. The cause of the loose set screws was determined to be the inadequate use of both internal and external operating experience. Improved practices for setting fastener parts/devices were not incorporated into maintenance procedures, work instructions or maintenance training.

PREVIOUS OCCURRENCES

A review of LERs at Hope Creek for the previous two years was performed to identify prior similar occurrences.

LER 354/03-002-00, entitled "Inoperability of Control Room Emergency Filter (CREF) subsystems due to Control Room (CR) envelope breach", dated January 12, 2003, was reviewed for applicability. The event in LER 354/03-002-00 was attributed to a ductwork access hatch opening causing both trains of CREF to be inoperable. The corrective actions associated with that LER would not have prevented this occurrence.

LER 354/04-002-00, entitled "Control Room Emergency Filtration System Train Inoperable For Greater Than 7 Days," involved the 'B' CREF train. The failure mechanism related to this LER was a float which became disengaged from the float arm due to improper torquing of the ball arm clamp. Corrective actions were specific to this event and would not have prevented the current event.

LER 354/04-005-00, entitled, "Control Room Emergency Filtration System Train Inoperable for Greater Than 7 Days," involved the BK400 chiller. The BK400 chiller was declared inoperable due to high evaporator pressure. The cause for the high evaporator pressure was determined to be the inability of the guide vane to properly modulate due to the pivot arm set screws not being engaged firmly enough on the shaft to prevent slippage. The corrective action consisted of revising the maintenance procedure to add guidance for dimpling the guide vane shaft to engage the setscrews in the shaft to prevent slippage. This action did not address the securing of the setscrews to prevent loosening and therefore would not have prevented the current event.

SAFETY CONSEQUENCES AND IMPLICATIONS

Although both the 'A' and 'B' CREF trains were inoperable during period from May 9 to 12, 2005, the 'A' CREF train was capable of pressurizing and filtering the control room atmosphere in the event of an accident. However, the follow up assessment determined that the 'A' CREF train was not capable of removing the heat loads from the control room envelope following a postulated design basis accident (DBA). An engineering assessment determined that based on the 'A' chiller's degraded performance, the 'A' CREF train would not have been able to maintain temperature below 85°F following a postulated DBA. As a result of increasing temperatures in the control room, operators would have initiated actions to restore the 'B' chiller to an operable status to provide the necessary cooling to the control room envelope.

A review of this event determined that a Safety System Functional Failure (SSFF) did occur as defined in Nuclear Energy Institute (NEI) 99-02. Since the capability to mitigate the consequences of an accident was impacted by having both trains of CREF inoperable, this is an NEI 99-02 SSFF.

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CORRECTIVE ACTION

1. Corrective maintenance was performed on the 1AK400 chiller. The guide vane was reassembled and the set screws were properly secured.
2. Maintenance procedure SH.MD-GP.ZZ-0022 is being revised to incorporate industry guidance/practices. This procedure change will address the use of double verification of tightness/torque of fasteners and the use of chemical materials where appropriate to prevent fasteners from loosening.
3. Lessons learned from this event were provided to maintenance personnel by a "CAP ALERT" document distributed on June 22, 2005.
4. This event is being assessed for changes to the maintenance technician training program.

The above actions are being tracked in accordance with PSEG's corrective action program.

COMMITMENTS

This LER contains no commitments.