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Nuclear Business Unit

**JUN 05 2000**

**LRN-00-0222**

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

**HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354  
UNIT NO. 1  
LICENSEE EVENT REPORT NO. 00-003-00**

Dear Sir:

This Licensee Event Report entitled, "As Found Values for Safety Relief Valve Lift Setpoints Exceed Technical Specification Allowable Limits," is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Bezilla", written in a cursive style.

Mark Bezilla  
Vice President – Operations

Attachment

RAR

C     Distribution  
     LER File

## LICENSEE EVENT REPORT (LER)

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

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If 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.

FACILITY NAME (1)

Hope Creek Generating Station

DOCKET NUMBER (2)

05000354

PAGE (3)

1 OF 4

TITLE (4)

As Found Values for Safety Relief Valve Lift Setpoints Exceed Technical  
Specification Allowable Limits

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
05	04	00	00	- 003	- 00	06	05	00	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.2201(b)			20.2203(a)(2)(v)			X 50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)		0			20.2203(a)(1)			50.73(a)(2)(ii)		50.73(a)(2)(x)
					20.2203(a)(2)(i)			50.73(a)(2)(iii)		73.71
					20.2203(a)(2)(ii)			50.73(a)(2)(iv)		OTHER
					20.2203(a)(2)(iii)			50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
					20.2203(a)(2)(iv)			50.73(a)(2)(vii)		

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Robin Ritzman, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

856-339-1445

## 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
B	SB	RV	T020	Y					

## SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On May 4, 2000, the results of the Safety Relief Valve (SRV) setpoint testing were received. The testing revealed that, following Cycle 9, 2 of the 14 SRVs experienced setpoint drift outside of the Technical Specification limit of +/- 3%. One of the failures was of a valve with a pilot disc that was modified with platinum ion implantation. The drift for this valve appears to have been caused by friction on the sliding surfaces resulting from poorly controlled maintenance performed by the valve vendor. These practices have been addressed via a NUPIC audit. Corrective actions have been proposed and their effectiveness is being monitored. The cause of the drift for the other valve is corrosion bonding of the pilot disc to the pilot seat. The SRVs were inspected, refurbished and satisfactorily re-tested at a test facility. SRV drift in two-stage Target Rock valves is being addressed generically by the Boiling Water Reactor Owners Group. Platinum ion implantation has now been implemented on all 14 SRVs. The ion implantation process has resulted in a marked reduction of setpoint drift and will continue to be the primary solution for pilot disc to seat corrosion bonding.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Hope Creek Generating Station	05000354	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		00	- 003 -	00	

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)  
Main Steam - EIIS Identifier {SB}  
Safety Relief Valves - EIIS Identifier {--/RV}\*

\* Energy Industry Identification System (EIIS) codes and component function identifier codes appear as {SS/CC}

**IDENTIFICATION OF OCCURRENCE**

Discovery date: May 4, 2000

**CONDITIONS PRIOR TO OCCURRENCE**

The plant was in an Undefined Operational Condition with all fuel removed from the reactor vessel during Hope Creek's ninth refueling outage (RF09). No structures, systems, or components were inoperable at the time of discovery that contributed to the event.

**DESCRIPTION OF OCCURRENCE**

On May 4, 2000, Hope Creek Engineering personnel received the initial results of the Target Rock Model 7567F Safety Relief Valve (SRV) setpoint testing required by Technical Specification 4.4.2.2. This testing revealed that following Hope Creek Cycle 9, two of the fourteen SRVs experienced setpoint drift outside of the Technical Specification 3.4.2.1 limit of +/- 3%. Prior to Cycle 9, pilot discs for thirteen of the fourteen SRVs were modified with platinum ion implantation to address problems with setpoint drift caused by corrosion bonding of the pilot disc to the pilot seat. The following results were obtained from the SRV testing:

**SRVs With Out-of-Tolerance Drift**

<u>SRV Position</u>	<u>Drift</u>	<u>Pilot Disc Status During Cycle 9</u>
F	3.1%	Ion-implanted disc
K	7.8%	Disc not implanted

Since the number of SRVs outside of the setpoint tolerance limit (two) was greater than the number of SRVs (one) allowed to be inoperable by Technical Specification 3.4.2.1, this condition was determined to be reportable under 10CFR50.73(a)(2)(i)(B), as any operation or condition prohibited by the plant Technical Specifications.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Hope Creek Generating Station	05000354	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		00	- 003 -	00	

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

**APPARENT CAUSE OF OCCURRENCE**

The cause of this event was setpoint drift. One of the failures was of a valve (F) with a pilot disc that was previously modified with platinum ion implantation. The drift for this valve appears to have been caused by friction on the sliding surfaces resulting from poorly controlled maintenance performed by the valve vendor. These practices have been addressed via a NUPIC audit. The cause of the drift for the other valve (K) is corrosion bonding of the pilot disc to the pilot seat.

**ASSESSMENT OF SAFETY CONSEQUENCES AND IMPLICATIONS**

The results of the Hope Creek Cycle 9 reload licensing analysis indicate that margin exists between the calculated vessel pressure of 1142 psig (1108 psig + 3.1% drift for the "F" SRV [bounding case] during Cycle 9) and the ASME upset limit of 1375 psig and the safety limit of 1325 psig steam dome pressure. Both the "F" and the "K" SRV's are on the "B" main steam line. The limiting main steam discharge line ("F") has a maximum allowable drift of 5.5%; therefore, this is more limiting than the "K" line, which has a maximum allowable drift of 22.4%. Based upon this analysis, there were no safety consequences or implications involved as a result of these valves exceeding the allowable tolerance. Therefore, the public health and safety was not affected.

**PREVIOUS OCCURRENCES**

LER 95-004, LER 95-036, LER 354/97-024, and LER 354/99-003, reported events where SRV setpoint drift exceeded the Technical Specification allowable limits during previous operating cycles. The corrective actions taken to address setpoint drift have not been fully implemented; therefore, they were not entirely effective at eliminating this phenomena. However, the ion implantation process has reduced the magnitude of the setpoint drift and is expected to further reduce it after the corrective actions are fully implemented. As described in the following Corrective Actions section, PSE&G continues to work with the BWROG to resolve this issue.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Hope Creek Generating Station	05000354	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		00	- 003 -	00	

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

**CORRECTIVE ACTIONS**

1. The SRVs were inspected, refurbished and satisfactorily retested at a test facility.
2. Hope Creek has continued to support the BWROG in working toward a resolution of the setpoint drift issue. Platinum ion implantation has been implemented at Hope Creek on all 14 of the SRVs. The results of the platinum ion implantation will be monitored after Cycle 10 for its effectiveness at reducing setpoint drift.
3. Corrective actions resulting from the NUPIC audit of Target Rock field service activities will be implemented and monitored for effectiveness.

**COMMITMENTS**

Corrective action number 3, above, is a commitment. The other two corrective actions cited in this LER are voluntary enhancements and do not constitute commitments.