

FEB 07 2001

LRN-01-0027



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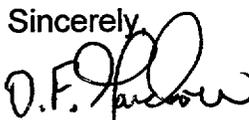
Gentlemen:

LER 354/00-010-00
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NO. NFP-57
DOCKET NO. 50-354

By letter dated November 3, 2000, PSEG Nuclear submitted Licensee Event Report (LER) 354/00-010 "Reactor Recirculation Pump Motor Generator Set Scoop Tube Mechanical and Electrical Stop Overspeed Setpoints Found Outside of Technical Specification Limits" (attached). This LER described that during performance of Technical Specification Surveillance Requirement 4.4.1.1.3 on the "B" recirculation pump motor-generator set, the electrical stop and mechanical stops were determined to be non-conservatively higher than expected. Since the potential existed for the flow dependent minimum critical power ratio (MCPR) to have been exceeded in a recirculation pump runout transient, a four hour report was made for this event under the provisions of 10CFR50.72(b) (2)(iii).

Upon further investigation, PSEG Nuclear determined that the event did not violate any of the requirements of the Hope Creek Technical Specifications. Although an error was made in the calibration of the "B" loop electrical and mechanical stops, which violated the administrative limits, the Technical Specifications required setpoint values for the stops were never exceeded.

Based upon the results of this investigation, PSEG Nuclear is withdrawing the LER in accordance with the guidance provided in NUREG 1022 Rev 2, "Event Reporting Guidelines 10 CFR 50.72 and 50.73."

Sincerely,

D. F. Garchow
Vice President -
Operations

Attachment (1)
/EHV
C Distribution
LER File 3.7

IE22

hey

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LRN-00-0430



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. 00-010-00

Dear Sir:

This Licensee Event Report entitled, "Reactor Recirculation Pump Motor Generator Set Scoop Tube Mechanical and Electrical Stop Overspeed Setpoints Found Outside of Technical Specification Limits," is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

Sincerely,

A handwritten signature in black ink, appearing to read "David F. Garchow".

David F. Garchow
Vice President –
Operations (Acting)

Attachment

JPP

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.

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TITLE (4)
Reactor Recirculation Pump Motor Generator Set Scoop Tube Mechanical and Electrical Stop Overspeed Setpoints Found Outside of Technical Specification 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
10	8	00	00	010	00	11	3	00		05000
										05000

OPERATING MODE (9) 1

POWER LEVEL (10) 99%

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)
20.2203(a)(1)	20.2203(a)(3)(i)		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 Jim Priest, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 856-339-5434
--	--

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

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On October 8, 2000, Hope Creek was in Operational Condition 1, Power Operation, with reactor power at approximately 99 percent. At approximately 1620 hours, testing required by Technical Specification Surveillance Requirement 4.4.1.1.3 was conducted to demonstrate adequacy of reactor recirculation pump motor-generator set scoop tube mechanical and electrical stop overspeed setpoints. While performing the surveillance on the "B" recirculation pump motor-generator set, the electrical stop and mechanical stops were determined to be non-conservatively higher than expected. Since the potential existed for the flow dependent minimum critical power ratio (MCPR) to have been exceeded in a recirculation pump runout transient, a four hour report was made for this event under the provisions of 10CFR50.72(b)(2)(iii). The apparent cause was attributed to out of calibration speed sensing instrumentation. At 1732 hours, the mechanical and electrical stops were lowered and readjusted to their proper settings and the Technical Specification requirements were satisfied. The process for determining and setting the mechanical and electrical stops for the recirculation pump motor-generator set and the calibration of recirculation pump speed indication devices are being evaluated for appropriate procedure revisions.

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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)
Reactor Recirculation System, Motor Generator Set - EIIS Identifier {AD/MG}*

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

IDENTIFICATION OF OCCURRENCE

Event Date: October 8, 2000
Discovery Date: October 8, 2000

CONDITIONS PRIOR TO OCCURRENCE

The plant was in OPERATIONAL CONDITION 1 (POWER OPERATION). No structures, systems, or components were inoperable at the time of the occurrence that contributed to the event.

DESCRIPTION OF OCCURRENCE

On October 8, 2000, Hope Creek was in Operational Condition 1, Power Operation, with reactor power at approximately 99 percent. At approximately 1620 hours, utility personnel (licensed operators) were conducting testing required by Technical Specification Surveillance Requirement 4.4.1.1.3, which states that each reactor recirculation pump motor-generator set (AD/MG) scoop tube mechanical and electrical stop shall be demonstrated OPERABLE with overspeed setpoints less than or equal to 109% and 107%, respectively, of rated core flow, at least once per 18 months. While performing procedure HC.IC-LC.BB-0004, Reactor Recirculation Pump Electrical and Mechanical Stop Adjustments, on the "B" recirculation pump motor-generator set (AD/MG), the utility personnel (licensed operators) observed that the electrical stop was not encountered at the expected motor-generator set (AD/MG) RPM while raising the speed of the "B" recirculation pump and determined that the as-found mechanical stop was also non-conservatively higher than expected.

At 1732 hours, the mechanical and electrical stops for the "B" recirculation pump motor-generator set (AD/MG) were readjusted to their proper settings in accordance with procedure HC.IC-LC.BB-0004, and the Technical Specification requirements were satisfied. The "A" recirculation pump motor-generator set (AD/MG) stops were found to be within the Technical Specification limits. Since the as-found mechanical stop

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DESCRIPTION OF OCCURRENCE (Continued)

settings would have resulted in higher core flows following a postulated reactor recirculation pump runout transient, the potential existed for the flow dependent minimum critical power ratio (MCPR) to have been exceeded, which could result in exceeding the safety limit MCPR under those postulated conditions. As a result, at 1811 hours, a four hour report was made for this event under the provisions of 10CFR50.72(b)(2)(iii) as a condition alone that could prevent the fulfillment of a safety function required to mitigate the consequences of an accident.

APPARENT CAUSE OF OCCURRENCE

The apparent cause of the improper reactor recirculation pump motor-generator set (AD/MG) scoop tube mechanical and electrical stop settings was attributed to out of calibration speed sensing instrumentation. The instrumentation relied upon to set the electrical and mechanical stops provided inaccurate information relative to recirculation pump speed, and as a result, the stops for the "B" motor-generator set (AD/MG) were set non-conservatively.

SAFETY SIGNIFICANCE AND IMPLICATIONS

The reactor recirculation pump motor-generator set (AD/MG) scoop tube mechanical and electrical stops are designed to limit the consequences of a failure (maximum demand) of one of the motor-generator set (AD/MG) speed controllers as described in Section 15.4.5 of the Hope Creek UFSAR. The purpose of the motor-generator set scoop tube mechanical stop is to limit the maximum flow reached during a postulated reactor recirculation pump flow runout transient which is not terminated by a reactor scram. This event stabilizes at a new core power level, corresponding to the maximum possible core flow along the limiting rod line, as limited by the motor-generator set scoop tube mechanical stop setting. The intended function of the motor-generator set scoop tube electrical stop is similar to that of the mechanical stop; however, the electrical stop is not credited for mitigating any accident or transient event, nor is it considered to be redundant to the mechanical stop. The mechanical stop protects the fuel cladding by limiting the reactor power increase which would result from a postulated increase in recirculation flow, such that neither the Linear Heat Generation Rate (LHGR), the Average Planar Linear Heat Generation Rate (APLHGR), nor the Safety Limit Minimum Critical Power Ratio (SLMCPR) are violated. The plant analyses assume that the core is being operated within the limits for Average Planar Linear Heat Generation Rate (APLHGR) and

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SAFETY SIGNIFICANCE AND IMPLICATIONS (Continued)

Minimum Critical Power Ratio (MCPR). These operating limits are specified in the Core Operating Limits Report (COLR) in terms of core flow and correspond to an assumed maximum motor-generator set mechanical stop setting of 109% core flow for the current fuel cycle.

Normally, procedure HC.IC-LC.BB-0004 would provide additional margin to the Technical Specification setpoints for the mechanical and electrical motor-generator set stops of 109% and 107% of rated core flow, respectively, by setting these stops conservatively at the pump speeds which are projected to produce 107% and 105% of rated core flow, respectively, at a test rod line which is lower than the limiting rod line. This conservative margin is intended to accommodate uncertainties in the methodology for setting the stops, and any potential non-conservativisms associated with carrying the stop settings from Cycle N-1 over to the beginning of Cycle N until the procedure can once again be performed. However, during the operating cycles that relied upon the inaccurate pump speed sensing instrumentation for setting the stops, the incorrect setting of the mechanical stop would have permitted worst case runout flows to exceed those assumed in the SLMCPR analyses if a speed controller failure were to occur.

Mitigating the consequences of the non-conservative motor-generator set stop settings, are the recirculation pumps flow runout transient event assumptions. These assume that the plant is initially operating at, or near, both the MCPR and the LHGR thermal limits. During the period that the non-conservative motor-generator set stop settings were in place, the reactor was actually conservatively operating within the flow dependent MCPR operating and the LHGR and APLHGR limits, thereby providing additional margin to help mitigate the non-conservative mechanical stop settings. Initial analyses for assumed worst case recirculation pump flows (117.5%) have concluded that the Safety Limit MCPR would not have been exceeded during the plant operating conditions when the mechanical stop was non-conservatively set. Although these analyses conclude that a safety function would not have been prevented, the non-conservative electrical and mechanical stop setting still represents a reportable condition under the provisions of 10CFR50.73(a)(2)(i)(B) since the appropriate Technical Specification actions delineated in LCO 3.4.1.1 were not taken within the required timeframe.

There was no threat to the public health or safety as a result of this condition.

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PREVIOUS OCCURRENCES

A review of previously reported events within the past two years identified no occurrences involving improperly set stops for the recirculation pump motor-generator sets or events with similar causes.

CORRECTIVE ACTIONS

1. On October 8, 2000, the mechanical and electrical stops for the "B" recirculation pump motor-generator set (AD/MG) were lowered and readjusted to their proper settings in accordance with procedure HC.IC-LC.BB-0004, and the Technical Specification requirements were satisfied.
2. The process for determining and setting the mechanical and electrical stops for the recirculation pump motor-generator set (AD/MG) and the method for calibration of recirculation pump speed indication devices are being evaluated to determine and implement appropriate procedure revisions.

COMMITMENTS

The corrective actions cited in this LER are voluntary enhancements and do not constitute commitments.