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Nuclear Business Unit

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

LER 354/00-001-00
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NO. NPF-57
DOCKET NO. 50-354

Gentlemen:

This Licensee Event Report entitled "Technical Specification Prohibited Condition – Failure To Meet Technical Specification Surveillance Requirements To Verify Vital Bus Load Shedding During A Loss Of Power And A Loss Of Power/Loss Of Coolant Accident" is being submitted pursuant to the requirements of the Code of Federal Regulations ****10CFR50.73(a)(2)(i)****

Sincerely,

M. B. Bezilla
Vice-president - Operations

Attachment

/rbk

C Distribution
LER File 3.7

The power is in your hands.

IE22

LICENSEE EVENT REPORT (LER)

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

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 (1-6 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)
Technical Specification Prohibited Condition - Failure To Meet Technical Specification Surveillance Requirements To Verify Vital Bus Load Shedding During A Loss Of Power And A Loss Of Power/Loss Of Coolant Accident

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	03	00	00	001	00	02	02	00		0500
										0500

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
1	100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(viii)
		<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(x)
		<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 73.71
		<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> OTHER
		<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 60.36(c)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 60.36(c)(2)	<input type="checkbox"/> 60.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Brooke Knieriem, Licensing	TELEPHONE NUMBER (Include Area Code) (856) 339-1782
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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 SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

This LER reports the operation of Hope Creek in a condition prohibited by Technical Specification (TS) 3/4.8.1, A. C. Sources. Specifically, TS 3/4.8.1 requires verification at least once per 18 months that during a loss of offsite power, and during a loss of offsite power in conjunction with an Emergency Core Cooling System (ECCS) actuation signal, that the emergency buses are de-energized and that unnecessary loads are shed from those buses. Because of an error in Hope Creek procedure HC.OP-ST.KJ-0008(Q), Integrated Emergency Diesel Generator 1DG400 Test - 18 Months, the pre-test configuration of the B Radwaste Supply Fan was listed as "off". With the B Radwaste Supply Fan off during the test, the load shed of the B Radwaste Supply Fan was not verified. The apparent cause of this occurrence was human error during the development and review of the test table in procedure HC.OP-ST.KJ-0008(Q) that specifies the pre-test lineup. A review of procedures used to perform the 18-month integrated emergency diesel generator test on the remaining Emergency Diesel Generators was performed and no similar errors were identified. To prevent recurrence, procedure HC.OP-ST.KJ-0008(Q) will be revised to verify the B Radwaste Supply Fan to be in service prior to the next performance of the surveillance. The operability of the B Radwaste Supply Fan to trip upon a loss of power was verified through performance of a 36-month preventive maintenance test performed on May 27, 1998. This test will be completed prior to March 1, 2000 to maintain the operability of the B Radwaste Supply Fan load shed until the next 18-month surveillance can be performed.

This event is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as an operation or condition prohibited by TS.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)

Emergency On-site Power System {EK/-}*

Emergency Diesel Generator {EK/DG}

Radwaste Supply Fan {VH/FAN}

Primary Containment Isolation System {JM/ }

Engineered Safety Features {JE/ }

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

CONDITIONS PRIOR TO OCCURRENCE

At the time of the occurrence, Hope Creek was in OPERATIONAL CONDITION 1 (Power Operation) operating at full power.

DESCRIPTION OF OCCURRENCE

On January 3, 2000, while performing a procedure review of the Integrated Emergency Diesel Generator 18 Month surveillance test, HC.OP-ST.KJ-0008, it was determined that the D channel 1E power source (D Vital Bus){EK/ } had not been tested in accordance with TS requirements. Specifically, TS 3/4.8.1, A. C. Sources - Operating, surveillance requirement 4.8.1.1.2.h.4 and 4.8.1.1.2.h.6 were not met with respect to load shedding of the B Radwaste Supply fan (0B-V-316){VH/FAN}.

TS 3/4.8.1 requires that at least once per 18 months that the load shedding of the emergency busses be verified during the simulation of a loss of power (LOP) (4.8.1.1.2.h.4) and a LOP in conjunction with an Emergency Core Cooling System (ECCS) actuation signal {JE/ } (4.8.1.1.2.h.6). This surveillance requirement is satisfied for the D channel by performance of procedure HC.OP-ST.KJ-0008. Because of an error in a test table that prescribes the pre-test component lineup, the load shed of the B Radwaste Supply Fan was not verified.

Section 5.4 of procedure HC.OP-ST.KJ-0008, is performed in part to verify that loads are shed from the D Vital Bus following a LOP, and a LOP coincident with an ECCS initiation signal. However, the procedure table (Table KJ-004, Attachment 2) that specifies the pre-test component lineup required that the B Radwaste Supply Fan be "off" prior to the test. The procedure table used to verify the load shed (Table KJ-006, Attachment 2) required that the B Radwaste Supply fan be "tripped" following the loss of power. With the B Radwaste Supply Fan off prior to initiation of the

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DESCRIPTION OF OCCURRENCE (Cont.)

test, its load shed was not tested. Similar loads on the D channel 1E power source, such as the A Reactor Building Supply & Exhaust fans, are placed in service prior to this test and then verified to have tripped following the test. The revision history for HC.OP-ST.KJ-0008 was reviewed and indicated that this error has existed as far back as 1989.

Power is supplied to the B Radwaste Supply Fan from the D Vital Bus through a Class 1E breaker (10B440-34) and then through a non-Class 1E breaker (10B448-21). The design logic for the non-1E breaker includes an Agastat relay that monitors available voltage supplied through the 1E breaker. Upon a loss of power, this undervoltage relay trips the trip coil of the non-1E breaker and the breaker opens, isolating the B Radwaste Supply Fan from the emergency bus. The functionality of the undervoltage relay itself is tested by performance of a 36-month Preventive Maintenance (PM) activity. The affected undervoltage relay logic and subsequent response of the non-1E Radwaste Supply fan breaker during this preventive maintenance test are identical to those tested by HC.OP-ST.KJ-0008. The 36-month preventive maintenance test was last accomplished satisfactorily on May 27, 1998. Successful completion of this test verified the operability of the B Radwaste Supply Fan with respect to load shedding in the event of a loss of power to its emergency bus. The PM was performed 20 months ago, which is within the grace period for this 18-month surveillance.

Since the frequency of the undervoltage relay 36-month PM did not always satisfy the 18-month surveillance frequency specified by the TS, this event is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as an operation or condition prohibited by TS.

APPARENT CAUSE OF OCCURRENCE

The apparent cause of the TS non-compliance is an inadequate procedure. Contributing factors and failed barriers include inadequate procedural reviews and development.

PRIOR SIMILAR OCCURRENCES

A review of LERs for Salem Units 1 and 2 and Hope Creek for the past two years identified four events involving TS surveillance non-compliances caused by inadequate procedures. Hope Creek LER 354/98-007-00 reported the inoperability of a Standby Liquid Control Pump caused by an inadequate In-service Test procedure. Hope Creek LERs 354/98-006-00 and 354/99-012-00

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PRIOR SIMILAR OCCURRENCES (CONT.)

reported the improper performance of primary containment integrity verification caused by an inadequate procedure. Salem LER 272/98-003-00 reported inadequate surveillance testing of Solid State Protective System features caused by an inadequate procedure. The corrective actions taken for these LERs would not have prevented the event discussed in this report.

SAFETY CONSEQUENCES

The safety consequence of the missed surveillance would be a failure of the B Radwaste Supply Fan to load shed in the event of a LOP or a LOP coincident with a loss of coolant accident (LOCA), increasing the load on the D Emergency Diesel Generator (EDG) {EK/DG}. The B Radwaste Supply fan is a 100 HP load connected to the D Vital bus. The fan is automatically load shed upon either a loss of power to the D Vital bus or upon a LOCA signal. In the case of a loss of coolant accident signal, the fan's 1E supply breaker is opened by a signal processed through the Primary Containment Isolation System (PCIS){JM/ }. When the 1E supply breaker opens, the non-1E breaker is opened by its undervoltage relay. Upon a loss of power signal, the B Radwaste Supply Fan's non-1E breaker is opened by its undervoltage relay. In both cases, this load shed is carried out to ensure that the fan load is not present when the EDG re-energizes the bus. The B Radwaste Supply Fan is not restored to service by either the loss of power sequencer or the loss of coolant accident sequencer, and remains out of service for the duration of the postulated accident unless overridden locally at the breaker and manually restarted.

If the B Radwaste Supply Fan failed to load shed in response to a LOCA signal or to a LOP, the presence of the additional 100 HP load on the D Vital bus at the time that it was re-energized would result in additional load on the EDG.

However, in the case of a LOCA signal, the B Radwaste Supply Fan would be load shed by the opening of its 1E breaker in response to the PCIS signal, and the 100 HP fan load would not be present coincident with any LOCA loads. In the case of a loss of power, even if the B Radwaste Supply Fan were not load shed, the LOCA loads, such as the D RHR pump (1250 HP), would not be running and so the B Radwaste Supply Fan load is bounded by these loads. Also, EDG output breaker design would accommodate the presence of the B Radwaste Supply Fan load on the vital bus at the time the EDG output breaker is closed.

Additionally, although the 18-month Technical Specification surveillance

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SAFETY CONSEQUENCES (CONT.)

requirements were not met, the undervoltage relay logic of the non-1E breaker and its response to a loss of power were successfully tested by the 36-month Preventive Maintenance item. Successful completion of this test verified the operability of the B Radwaste Supply Fan with respect to load shedding in the event of a loss of power to its emergency bus.

Therefore, based on the above, there was no impact on the health and safety of the public.

CORRECTIVE ACTIONS

1. Surveillance procedure HC.OP-ST.KJ-0008(Q), Table KJ-004, Attachment 2, will be revised to align the B Radwaste Supply Fan to be in service prior to performance of test section 5.4, and to reference TS 4.8.1.1.2.h.4.
2. A review of the procedures used to perform the Integrated Emergency Diesel Generator 18-month test for the remaining EDGs was performed to verify their adequacy to meet the requirements of TS 4.8.1.1.2.h.4 and TS 4.8.1.1.2.h.6 with regard to load shedding. No other problems were identified.
3. To maintain compliance with TS surveillance requirements for load shedding of the D EDG until the next 18-month loss of coolant accident/ loss of offsite power test, the 36-month undervoltage relay preventive maintenance test for the B Radwaste Supply Fan non-1E breaker will be completed by March 1, 2000.