

**Virginia Electric and Power Company
North Anna Power Station
P. O. Box 402
Mineral, Virginia 23117**

November 19, 1999

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No.: 99-579
NAPS/JHL
Docket Nos.: 50-338
50-339
License Nos.: NPF-4
NPF-7

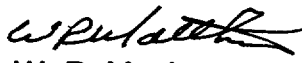
Dear Sirs:

Pursuant to 10CFR50.73, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Units 1 and 2.

Report No. 50-338/99-007-00

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to the Management Safety Review Committee for its review.

Very truly yours,


W. R. Matthews
Site Vice President

Commitments contained in this letter:

1. None.

Enclosure

IE22

cc: U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303

Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

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 (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) NORTH ANNA POWER STATION , UNITS 1 & 2		DOCKET NUMBER (2) 05000338	PAGE (3) 1 OF 4
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TITLE ()
BATTERY CHARGERS NOT SIZED FOR DESIGN CAPABILITY DUE TO INCORRECT CALCULATIONS

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	DOCUMENT NUMBER
10	27	1999	1999	007	00	11	19	1999	North Anna, Unit 2	05000-339
									FACILITY NAME	DOCUMENT NUMBER
										05000-

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100 %	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)						
	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						
	20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	or in NRC Form 366A						

LICENSEE CONTACT FOR THIS LER (12)

NAME W. R. Matthews, Site Vice President	TELEPHONE NUMBER (Include Area Code) (540) 894-2101
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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).	X	NO	EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

During a review of the Emergency Power System, a condition was identified that may have placed both units outside the plant design basis. Design calculations indicate that battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II may not meet the design basis requirement for a 24-hour recharge following a two-hour duty cycle discharge of its associated battery during emergency loading conditions. Also, battery charger currents may exceed TS surveillance requirements. This event is being reported pursuant to 10 CFR 50.73(a)(2)(ii)(B).

The condition was caused by charger sizing calculations incorrectly calculating the maximum potential charger loads. The condition posed no significant safety implications since no accidents occurred that would have challenged battery charger design capability. Administrative controls were previously implemented for battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II to ensure they are capable of meeting design requirements. Since implementation of administrative controls, the chargers are fully capable of supplying loads and recharging the batteries in accordance with design basis requirements.

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

1.0 DESCRIPTION OF THE EVENT

The Configuration Management Project integrated review of the Emergency Power System (EIS System - EI) identified a condition that may have previously placed Units 1 and 2 outside the plant design basis. The Emergency Power System is designed for each direct current (DC) bus (i.e., 1-I, 1-II, 1-III and 1-IV) to have a dedicated battery charger (EIS Component - BYC). Each pair of DC buses (i.e., 1-I and 1-II, 1-III and 1-IV) has a swing charger available that can be used as a backup to one of the dedicated chargers. If power is lost to the charger, the battery (EIS Component - BTRY) supplies the DC bus loads. Once power is restored, the battery charger takes over to power the DC bus loads and recharge the battery restoring the ampere-hours removed from the battery.

Existing design basis calculations indicate that some of the battery chargers are undersized and unable to function as described in the UFSAR. Specifically, it was determined that battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II cannot provide adequate recharge capability without procedural enhancement for the operation of plant equipment. Consequently, the P-250 plant process computers (EIS Component - CPU) were previously placed on their bypass source to ensure adequate recharge capability.

Since station battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II may have previously failed to meet their design basis requirement for a 24-hour recharge following a two-hour discharge of the battery during emergency loading conditions, this event is being reported pursuant to 10 CFR 50.73(a)(2)(ii)(B).

In addition, Technical Specification (TS) surveillance requirements 4.8.2.3.2.c.3 (Unit 1) 4.8.2.3.2.c.4 (Unit 2) require each 125-volt battery charger to be demonstrated operable at least once per 18 months by verifying that the battery charger will supply at least 200 amperes (A) at 125 volts for at least 4 hours. The Updated Final Safety Analysis Report (UFSAR) indicates that the chargers are capable of recharging the batteries from the maximum discharged condition to full charge in 24 hours while supplying the normal or emergency steady-state loads. A review of design calculations indicates that some of the required battery charger currents may exceed the TS surveillance requirement. The calculations indicate that the chargers need to be tested at 270A to ensure they will be able to meet design basis requirements. Therefore, the TS surveillance requirement is non-conservative.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The TS bases assume the operability of at least one of each of the onsite AC and DC power sources and associated distribution systems during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite AC source. When subjected to a loss of offsite power and the Emergency Diesel Generators (EDGs)

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(EIS System - EK, Component - DG) energize the bus as designed, the battery chargers are completely capable of performing their safety function. Should the EDG not energize the bus, the administrative controls presently in place ensure the chargers continue to be capable of performing their safety function once AC power is restored.

The condition posed no significant safety implications since no accidents occurred that would have challenged battery charger design capability. In addition, administrative controls were previously implemented for battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II to ensure they are capable of meeting design basis requirements. Since implementation of administrative controls, the chargers are fully capable of supplying loads and recharging the batteries in accordance with design basis requirements. Therefore, the health and safety of the public are not affected.

3.0 CAUSE

The condition was caused by the original charger sizing calculation and subsequent revisions being incorrect in calculating the maximum potential charger loads. The errors resulted in underestimating the required battery charger loads.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

A Plant Issue Report was submitted for the deviating condition.

Administrative controls were previously implemented for battery chargers 1-III and 2-III and swing chargers 1C-II and 2C-II to ensure they are capable of meeting design basis requirements in the future. Specifically, no action is required if AC power is restored to the charger within the first 30 minutes following a DBA (i.e., the charger has sufficient capability to recharge the battery within 24 hours for this scenario). If power to the charger is not restored within 30 minutes, it will be necessary to open the DC input breaker to the computer inverter to shed the P-250 computer inverter and place the P-250 computer on its bypass source prior to restoring power to the charger. This allows the charger to meet its 24-hour recharge time requirement. Procedure changes are being implemented to incorporate the administrative controls that were previously implemented.

5.0 ADDITIONAL CORRECTIVE ACTIONS

An evaluation was performed to document the acceptability of the size of the existing station battery chargers, evaluate the station battery chargers for various scenarios and document testing performed on the battery chargers to demonstrate the chargers are capable of performing their design function. Testing was performed and verified a recharge rate of 270 amps.

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A Technical Specifications Change Request has been initiated to ensure the battery chargers are tested to the required capabilities in the future.

6.0 ACTIONS TO PREVENT RECURRENCE

No further action is required. However, the Configuration Management Project's ongoing review of systems to validate the design basis of the plant may identify additional safety analysis issues.

7.0 SIMILAR EVENTS

None.

8.0 ADDITIONAL INFORMATION

None.