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Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236

Nuclear Business Unit

JUN 04 1998

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

**LER 272/98-011-00
SALEM GENERATING STATION - UNIT 1
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-272**

Gentlemen:

This Licensee Event Report entitled "Improper Isolation of the Single Cell Battery Charger from the 125 VDC Battery" is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(2)(i)(B).

Sincerely,

John P. Robertson for A.C. Bakken III

A. C. Bakken III
General Manager -
Salem Operations

Attachment

BJT

C Distribution
LER File 3.7

9806120031 980604
PDR ADOCK 05000272
S PDR

Handwritten initials and date: J/P, 6/12

The power is in your hands.

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: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND 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.

FACILITY NAME (1) SALEM GENERATING STATION UNIT 1		DOCKET NUMBER (2) 05000272	PAGE (3) 1 OF 4
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TITLE (4)
Improper Isolation of the Single Cell Battery Charger from the 125 VDC Battery

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	05	98	98	-- 011	-- 00	06	04	98	SALEM UNIT 2	05000311
									HOPE CREEK	05000354

OPERATING MODE (9) 1

POWER LEVEL (10) 100

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 Brian J. Thomas, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 609-339-2022
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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)

On May 5, 1998, the activity to charge cell 47 of the 1A 125 VDC battery using the single cell battery charger was identified as having been accomplished without proper evaluation for the isolation of the battery charger from the Class-1E 125 VDC battery. Without properly analyzing the impact of connecting the single cell charger to the operable 125VDC and providing the necessary electrical isolation to ensure no impact to the battery, the use of the single cell charger rendered the battery inoperable. No Technical Specification Action Statements (TSAS) were entered while the single cell battery charger was connected to the 1A 125 VDC battery. Although a specific review of past occurrences has not been performed, discussion with cognizant station personnel has indicated that the single cell battery charger has been used in the past on other battery banks at both Salem Units 1 and 2, and at Hope Creek without proper isolation.

The cause of occurrence for Salem is attributed to an inadequate 10CFR50.59 applicability review during past revisions of the maintenance procedure for single cell battery charging. The cause of the Hope Creek event is attributed to a deficient procedure and inadequate review of the separation requirements during initial plant startup.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), any condition prohibited by the plant's Technical Specifications.

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

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
SALEM GENERATING STATION UNIT 1	05000272	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		98	- 011	- 00	

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor
General Electric - BWR/4

125 VDC Batteries {EJ/-}*

* Energy Industry Identification System (EIS) codes and component function identifier codes appear as {SS/CCC}.

CONDITIONS PRIOR TO OCCURRENCE

At the time of discovery, Salem Unit 1 and Unit 2 were in Mode 1 and Hope Creek was in Op Con 1.

DESCRIPTION OF OCCURRENCE

On May 5, 1998, the activity to charge cell 47 of the 1A 125 VDC battery using the single cell battery charger was identified as having been accomplished without proper evaluation for the isolation of the battery charger from the Class-1E 125 VDC battery. The single cell charger was installed in accordance with maintenance procedure SC.MD-CM.ZZ-0024(Q). The power source for the single cell charger was a non Class-1E power source. The procedure contained a caution concerning channel separation and that the purpose of the fuses provided in the single cell charger were to maintain channel separation. However, the fuses were not specifically analyzed for protection of the class-1E battery. Without properly analyzing the impact of connecting the single cell charger to the operable 125VDC and providing the necessary electrical isolation to ensure no impact to the battery, the use of the single cell charger rendered the battery inoperable. No Technical Specification Action Statements (TSAS) were entered while the single cell battery charger was connected to the 1A 125 VDC battery. TS 3.8.2.3 action f stated to, "restore the battery to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours." The single cell charger was connected to the 1A 125 VDC battery for greater than 2 hours.

Discussion with cognizant station personnel has indicated that the single cell battery charger has been used in the past on other battery banks at both Salem Units 1 and 2. A review of the procedure for single cell battery charging at Hope Creek was performed. This review determined that proper isolation was not being provided when connecting the single cell charger to the Hope Creek Class-1E batteries.

Based on the above, this event is reportable under 10CFR50.73(a)(2)(i)(B), any condition prohibited by the plant's Technical Specifications.

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

CAUSE OF OCCURRENCE

The cause of occurrence for Salem is attributed to an inadequate 10CFR50.59 applicability review during past revisions of the maintenance procedure for single cell battery charging. Although the isolation requirements in the original Salem single cell charging procedure may not have been adequate, 10CFR50.59 applicability reviews for changes to the isolation requirements during past procedure revisions did not adequately assess the separation requirements for installing a non class-1E battery charger to an operable class-1E battery. The cause of the Hope Creek event is attributed to a deficient procedure and inadequate review of the separation requirements during initial plant startup.

Although the above event was attributed to an inadequate 10CFR50.59 review, improvements have been made to the 10CFR50.59 program since the above 10CFR50.59 reviews were performed. Some of the improvements included the establishment of formal training and requalification requirements for 10CFR50.59 preparers, peer reviewers, and approvers. However, as outlined in the corrective actions, additional enhancements will be made to the 10CFR50.59 program to specifically address the issue identified in this LER.

PRIOR SIMILAR OCCURRENCES

A review of LERs for Salem Units 1 and 2, and Hope Creek for the prior two years did not identify any similar occurrences associated with inadequate 10CFR50.59 applicability reviews. However, LER 272/97-013-00 was issued concerning an instance of having measuring and test equipment (M&TE) connected to operable plant equipment. This LER identified the test equipment remained connected to the 2A Emergency Diesel Generator (EDG) while the EDG was declared operable however the test equipment was not evaluated for remaining connected to an operable EDG. This event was attributed to personnel error for intentionally leaving the test equipment in place when declaring the EDG operable contrary to the procedure requirement that directed removal of the test equipment.

SAFETY CONSEQUENCES AND IMPLICATIONS

The possibility of a charger failure occurring that would damage a battery cell when the non class-1E battery charger is connected to the class-1E battery is minimal. Although the single cell battery charger is non-safety related, the single cell charger is provided with similar features (i.e., current limit) as the installed safety related battery chargers and should limit a fault from affecting the battery. There have been no reported cases of a single cell battery charger adversely impacting battery cell voltage during Salem or Hope Creek Station's use of the single cell battery charger. Therefore, there was no impact to the health and safety of the public.

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

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

CORRECTIVE ACTIONS

1. Procedure SC.MD-CM.ZZ-0024(Q) was placed on administrative hold to prevent use of the procedure in the field until satisfactory resolution of the proper isolation of the single cell battery charger from the Class -1E battery.
2. A review of maintenance procedures is being performed to determine if other procedures allow temporary equipment to be installed on operable systems. If maintenance procedures exist that connect temporary equipment to operable systems, a review will be performed to determine if the effect of the temporary equipment on system operation has been properly evaluated. This review will be completed by August 7, 1998.
3. The "10CFR50.59 Program Guidance" procedure, NC.NA-AS.ZZ-0059, will be revised to include examples concerning the connection of temporary equipment to operable systems when performing 10CFR50.59 reviews. The procedure will be revised by August 31, 1998.
4. Procedure HC.MD-GP.ZZ-0014(Q) was revised to delete the provisions for charging a single battery cell while the battery is in service.
5. This issue will be included in the next two year cycle of 10CFR50.59 refresher training starting in July 1998.