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Richard T. Purcell
Site Vice President, Watts Bar Nuclear Plant

AUG 2 4 1999

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

Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - FACILITY OPERATING LICENSE NPF-90 - LICENSEE EVENT REPORT (LER) 50-390/1999-006

The enclosed report provides details regarding alignment of Battery Charger 6-S to Vital Battery Board II (B train) when the charger was being supplied by an A train power source. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B).

If you should have any questions, please contact P. L. Pace at (423) 365-1824.

Sincerely,

R. T. Purcell

Enclosure
cc: See page 2

PLP:RAS
cc (Enclosure):
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NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 08/30/2001

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 20603. In an information collection does not display a currently valid OMB control number, the NRC may no conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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

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TITLE (4)

Alignment of Battery Charger 6-S

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
										05000
07	27	99	1999	006	00	08	26	99	FACILITY NAME	DOCKET 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)	X	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
		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	TELEPHONE NUMBER (Include Area Code)
Rickey A. Stockton, Licensing Engineer	(423)-365-1818

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	NO X				

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

On July 27, 1999, with unit 1 in Mode 1 operating at approximately 100 percent reactor power, Operations personnel identified that Battery Charger 6-S was being supplied from an A train AC source while it was configured to supply Battery Board II, a B train board. Upon discovery, the personnel entered Limiting Condition for Operation (LCO) 3.8.4, "DC Source - Operating", Action A. Battery Charger 6-S was removed from service and realigned such that it was supplied from a B train AC source. LCO 3.8.4 was then exited within the two hour action time limit. A subsequent investigation determined that this condition existed for approximately 18 hours. This condition is being reported in accordance with 10 CFR 50.73 (a)(2)(i)(B).

The cause of this event was determined to be personnel error due to incorrect communication between operation personnel during the pre-job briefing. Contributing causes were perceived pressure to complete the task, inadequate level of supervision, inadequate post-job review, misleading labeling, and corresponding procedure nomenclature. Corrective actions included realignment of the affected battery charger, standdown meetings for Operations personnel, operating procedure revisions and disciplinary actions were taken in accordance with the TVA personnel policy.

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

I. PLANT CONDITIONS:

Watts Bar Nuclear Plant Unit 1 was in Mode 1 operating at approximately 100 percent reactor power when this event occurred.

II. DESCRIPTION OF EVENT

A. Event

On July 27, 1999, Operations personnel identified that Battery Charger 6-S [Energy Industry Identification System (EIIS) Code BYC] was being supplied from an A train AC source while it was configured to supply Battery Board II (EIIS Code BYBD), a B train board. Upon discovery, the personnel entered Limiting Condition for Operation (LCO) 3.8.4, "DC Source - Operating", Action A. Battery Charger 6-S was removed from service and realigned such that it was supplied from a B train AC source and LCO 3.8.4 was then exited.

B. Inoperable Structures, Components, or Systems that Contributed to the Event

There were no inoperable structures, components or systems that contributed to this event.

C. Dates and Approximate Times of Major Occurrences

Time (EDT)	Occurrences on July 27, 1998
0145	Pre-Job briefing held prior to alignment activity.
0200	Senior Reactor Operator approved the alignment.
0228	Vital Battery Board II aligned to Battery Charger 6-S using the A train power source.
1940	Assistant Unit Operator questioned the charger alignment during the shift turnover meeting.
1940 to 2005	Verification of Condition
2005	LCO 3.8.4 entered.
2050	Aligned Charger 6-S to the B train power source and exited LCO 3.8.4.

D. Other Systems or Secondary Functions Affected

Vital Battery Board II was technically inoperable during this time. (See discussion in Part IV.)

E. Method of Discovery

The assistant unit operator involved in the initial alignment questioned why the alignment was not being tracked as an LCO during the evening shift turnover meeting.

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II. DESCRIPTION OF EVENT (continued)

F. Operator Actions

Upon confirmation of the assistant unit operator belief of the improper alignment, LCO 3.8.4 was entered while the charger was realigned. LCO 3.8.4 was exited after the realignment.

G. Automatic and manual safety system responses

There were no automatic or manual safety system responses and none were required.

III. CAUSE OF EVENT

The cause of this event was determined to be personnel error due to incorrect communication between operation personnel during the pre-job briefing. Contributing causes were perceived pressure to complete the task, inadequate level of supervision, inadequate post-job review, misleading labeling, and corresponding procedure nomenclature.

Prior to beginning the task of placement of Battery Charger 6-S in service to supply Vital Battery Board II and the removal of the normal battery charger, a pre-job briefing was held in the main control room. At this pre-job briefing, the assistant unit operator asked the unit operator which section of the governing operating procedure would be used to align Battery Charger 6-S. The Unit Operator responded to align the charger to the "normal" power supply. The procedure contained two paths for the selection of either "normal" (B train) or "emergency" (A train) power source and used notes to differentiate which path to use. (Subsequent review of the procedure and the battery chargers revealed that the procedure nomenclature referenced "normal" and "emergency" switch positions which was unique in that switching is available to allow unrestricted usage of the spare chargers when aligned to the correct AC power source. The use of other similar switches is adequately prohibited by procedure.) At this point, the assistant unit operator left the pre-briefing in the main control room and aligned Vital Battery Board II (B train) to Battery Charger 6-S which at the time was aligned to an A train source. The post-job review by the Unit Operator did not identify the alignment error. This alignment configuration existed for approximately 18 hours until questioned by the assistant unit operator as to why the alignment was not being tracked by an LCO action at his next oncoming shift turnover meeting later that day.

IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES

The vital 125 VDC electrical power system (EIIS Code EI) is a Class 1E system whose safety function is to provide control power for engineered safety features equipment, emergency lighting, vital inverters, and other safety-related DC powered equipment. The system capacity is sufficient to supply these loads and any connected non-safety loads during normal operation and to permit safe shutdown and isolation of the reactor for the "loss of all AC power" condition. The system is designed to perform its safety function subject to a single failure.

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IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES (continued)

The 125V DC vital power system is composed of the four redundant channels (Channels I and III are associated with Train A and Channels II and IV are associated with Train B) and consists of four lead-acid-calcium batteries, six battery chargers (including two spare chargers), four distribution boards, battery racks (EIIS Code BTRY/RK), and the required cabling, instrumentation and protective features. Each channel is electrically and physically independent from the equipment of all other channels so that a single failure in one channel will not cause a failure in another channel. Each channel consists of a battery charger which supplies normal DC power, a battery for emergency DC power, and a battery board which facilitates load grouping and provides circuit protection. These four channels are used to provide emergency power to the 120V AC vital power system which furnishes control power to the reactor protection system. No automatic connections are used between the four redundant channels.

Battery boards I, II, III, and IV have a charger normally connected to them and also have manual access to a spare (backup) charger for use upon loss of the normal charger. Each vital battery has adequate storage capacity to carry the required load continuously for at least 4 hours in the event of a loss of all AC power (station blackout) without an accident or for 30 minutes with an accident considering a single failure. Load shedding of non-required loads will be performed to achieve the required coping duration for station blackout conditions. Additionally, battery boards I, II, III, and IV have manual access to the fifth vital battery system. The fifth 125 VDC Vital Battery System is intended to serve as a replacement for any one of the four 125 VDC vital batteries during their testing, maintenance, and outages with no loss of system reliability under any mode of operation.

When this event occurred, Vital Battery Board I was connected to Battery Charger I which was powered from A-Train 480V Shutdown Board 1A2-A (normal alignment)(EIIS Code BD). Vital Battery Board II was connected to Spare Battery Charger 6-S which was being powered from A-Train 480V Reactor MOV Board 1A2-A. This configuration had two redundant Battery Boards (I and II) powered from A-train because 480 V Shutdown Board 1A2-A and Reactor MOV Board 1A2-A (via 480 V Shutdown Board 1A2-A) are both powered from 6.9 kV Shutdown Board 1A-A which is supplied from Common Service Station Transformer (CSST) C (EIIS Code XFMR).

The safety function of the battery chargers is to maintain the vital batteries at the proper charge level which ensures the batteries have enough capacity to perform their safety functions following a loss of AC power. This function would continue to be performed while connected to the same electrical power train. Adequate indication exists to allow the operator to determine the state of battery chargers and batteries if this function was not being accomplished.

If a problem developed (electrical fault, etc.) with any Battery Charger it would be isolated from its power source by redundant electrical protective devices (circuit breaker/fuse) and not affect the other redundant channel of DC power. In addition, any other event that would cause the complete loss of power to A-Train would not prevent the batteries from performing their safety function because both Batteries (I and II) would be fully charged at the initiation of the event.

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IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES (continued)

Operator recovery of the mis-aligned charger would be a matter of realignment of the charger to the correct power supply. This operator action would not necessarily be needed immediately since the batteries would provide sufficient backup until the realignment could take place and would be only needed in case of a single failure (i.e., loss of CSST C or 6.9 kV Shutdown Board 1A-A). This realignment action would be precipitated by the loss of offsite power under Abnormal Operating Instruction (AOI)-35, "Loss of Offsite Power," or by loss of the shutdown board addressed by Annunciation Response Instruction (ARI)-501-508, "Common Station Service." However, it is important to note that both trains of diesel generators and the required offsite sources remained functioning during this event with no significant threats to jeopardize these sources.

Considering the limited time of the misalignment and the remaining mitigation capability, this is not considered a significant safety event.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

Upon confirmation of the assistant unit operator's belief of the improper alignment, LCO 3.8.4 was entered while the charger was realigned. LCO 3.8.4 was exited after the realignment.

Operations management conducted standdown meetings to discuss expectations and error prevention with operations personnel.

B. Corrective Actions to Prevent Recurrence - (TVA does not consider these items to constitute regulatory commitments. TVA's corrective action program tracked completion of these actions.)

A "top down" performance discussion with the shift crew involved has been conducted. In addition, the personnel involved received disciplinary action in accordance with TVA personnel policy.

Procedures SOI-236-01 through 236.04 were revised to remove the steps of the procedure that aligns the 6-S and 7-S spare battery chargers to the opposite train power source from the existing section, and created a new section to contain these steps.

In addition, the equipment labeling will be changed to denote train designations and the operating procedures will be revised as required to denote the labeling changes.

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VI. ADDITIONAL INFORMATION

A. Failed Components

1. Safety Train Inoperability

There was no safety train inoperability due to a failed component.

2. Component/System Failure Information

a. Method of Discovery of Each Component or System Failure:

This event did not involve a failed component.

b. Failure Mode, Mechanism, and Effect of Each Failed Component:

This event did not involve a failed component.

c. Root Cause of Failure:

This event did not involve a failed component.

d. For Failed Components With Multiple Functions, List of Systems or Secondary Functions Affected:

This event did not involve a failed component.

e. Manufacturer and Model Number of Each Failed Component:

This event did not involve a failed component.

B. Previous Similar Events

A review of the previous WBN LERs did not reveal any similar issues where incorrect communication led to a misalignment of a safety system.

C. Additional Information: - None.

D. Safety System Functional Failure:

This event did not involve a safety system functional failure as defined in NEI-99-02, Draft Revision B.

VII. COMMITMENTS - None.