Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

May 20, 2009

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN, P1-35
Washington, D. C. 20555-0001

10 CFR 50.73

Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 1 - DOCKET 50-259 - FACILITY OPERATING LICENSE DPR - 33 - LICENSEE EVENT REPORT (LER) 50-259/2009-002-00

The enclosed report provides details of unexpected logic lockout of the Loop II Residual Heat Removal system pumps. TVA is reporting this in accordance with 10 CFR 50.73(a)(2)(v)(D), as any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

There are no commitments in this letter.

Sincerely,

R. G. West
Site Vice President, BFN
cc: See page 2

JE22
NRR

Enclosure
cc (Enclosure):

Ms. Eva A. Brown, Project Manager
U.S. Nuclear Regulatory Commission
(MS 08G9)
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

Mr. Eugene F. Guthrie, Branch Chief
U.S. Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-8931

NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611-6970

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Browns Ferry Unit 1	05000259	1 of 4

4. TITLE: Unexpected Logic Lockout Of The Loop II Residual Heat Removal System Pumps

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									None	N/A
03	21	2009	2009	002	00	05	20	2009	FACILITY NAME: None	DOCKET NUMBER: N/A

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☒ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER *(Include Area Code)*
Steve Austin, Licensing Engineer	256-729-2070

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
N/A	N/A	N/A

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

On March 20, 2009, at 2055 hours Central Daylight Time (CDT), BFN operations prepared to perform scheduled surveillance 1-SR-3.3.5.1.6(BI), Functional Test of Residual Heat Removal (RHR) Loop I Pump And Minimum Flow Valve Logic. Operations declared RHR pumps 1A and 1C inoperable, entering Technical Specification Limiting Condition for Operation (LCO) 3.5.1. Condition A and Required Action A.1. On March 21, 2009 at approximately 0406 hours CDT, while placing a jumper in accordance with the surveillance, Unit 1 received RHR Pump Initiate Lockout signal for Loop II RHR Pumps 1B and 1D. With the lockout signal in place, the automatic start function of RHR Pumps 1B and 1D is inhibited. Operations immediately recognized the placement of the jumper per the instruction as an incorrect action. At approximately 0406 hour CDT, Unit 1 entered TS LCO 3.5.1 Condition H, Action H.1, with two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition A, immediately enter TS LCO 3.0.3. After approximately one minute, Operations restored the automatic start function of RHR Pumps 1B and 1D, and exited TS LCO 3.5.1 Condition H and TS LCO 3.0.3. The functional test, 1-SR-3.3.5.1.6(BI) contained an error previously identified and not corrected. A pre-performance walkdown of the surveillance recognized that the jumper was being installed in panel 1-9-33 and removed from panel 1-9-32. However, when the revision was made to correct the panel location, the wrong surveillance step was revised. Instead of revising the surveillance to install the jumper in correct panel, 1-9-32, the revision removed the jumper from the wrong panel, 1-9-33. Consequently, the action to place and remove a jumper took place in the incorrect cabinet.

NARRATIVE

I. PLANT CONDITION(S)

Prior to the event, Units 1, 2, and 3 were in operating in Mode 1 at 100 percent thermal power (approximately 3458 megawatts thermal). Unit 1 continued to operate at full power thought the event and Units 2 and 3 were unaffected by the event.

II. DESCRIPTION OF EVENT

A. Event:

On March 20, 2009, at 2055 hours Central Daylight Time (CDT), BFN operations prepared to perform scheduled surveillance 1-SR-3.3.5.1.6(BI), Functional Test of Residual Heat Removal (RHR) [BO] Loop I Pump And Minimum Flow Valve Logic. Operations declared RHR pumps 1A and 1C inoperable, entering Technical Specification Limiting Condition for Operation (LCO) 3.5.1. Condition A and Required Action A.1: With one low pressure Emergency Core Cooling System (ECCS) injection/spray subsystem inoperable, within 7 days, restore low the pressure ECCS injection/spray subsystem to Operable status. On March 21, 2009 at approximately 0406 hours CDT, while placing a jumper in accordance with the surveillance, Unit 1 received RHR Pump Initiate Lockout signal for Loop II RHR Pumps 1B and 1D. With the lockout signal in place, the automatic start function of RHR Pumps 1B and 1D is inhibited. Operations immediately recognized the placement of the jumper per the instruction as an incorrect action. At approximately 0406 hour CDT, Unit 1 entered TS LCO 3.5.1. Condition H, Action H.1, with two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition A, immediately enter TS LCO 3.0.3. After approximately one minute, Operations restored the automatic start function of RHR Pumps 1B and 1D, and exited TS LCO 3.5.1 Condition H and TS LCO 3.0.3.

TVA is submitting this report in accordance with 10 CFR 50.73(a)(2)(v)(D), as any event or condition that could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident.

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

None.

C. Dates and Approximate Times of Major Occurrences:

March 21, 2009 at 1050 hours CDT	TVA made an eight hour report to the NRC in accordance with 10 CFR 50.72(b)(3)(v)(D) as any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures of systems that are needed to mitigate the consequences of an accident.

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

Operations received main control room indication that the automatic start function of RHR Pumps 1B and 1D was inhibited.

NARRATIVE

F. Operator Actions

Operations personnel suspended performance of surveillance 1-SR-3.3.5.1.6(BI). They entered the appropriate TS LCO and took immediate actions to restore the automatic start function of RHR Pumps 1B and 1D.

G. Safety System Responses

None.

III. CAUSE OF THE EVENT

A. Immediate Cause

The immediate cause for the event was an inadequate procedure step.

B. Root Cause

The functional test, 1-SR-3.3.5.1.6(BI) contained an error previously identified and not corrected. A pre-performance walkdown of the surveillance recognized that the jumper was being installed in panel 1-9-33 and removed from panel 1-9-32. However, when the revision was made to rectify the panel location, the wrong surveillance step was revised. Instead of revising the surveillance to install the jumper in the correct panel, 1-9-32, the revision removed the jumper from the wrong panel, 1-9-33. Consequently, the action to place and remove a jumper took place in the incorrect panel.

C. Contributing Factors

The surveillance contained errors not corrected during the initial performance as part of Unit 1 restart in September of 2006. The March 20, 2009, performance of this surveillance was the second performance since restart of Unit 1. The initial performance on September 10, 2006, during Unit 1 restart activities did not note any discrepancies in the effected section.

IV. ANALYSIS OF THE EVENT

At the time the event occurred on March 21, 2009, Operations installed a jumper that simulated an accident signal from the Unit 2 RHR Channel A logic system. As soon as the jumper installation was completed, the amber lights indicating that 1B and 1D RHR pumps auto start function was inhibited illuminated. Operations immediately realized the 1B and 1D auto start function was inhibited they took actions to restore the auto-start function. The auto-start function remained inhibited for approximately one minute.

V. ASSESSMENT OF SAFETY CONSEQUENCES

The safety consequences of this event were not significant. During the timeframe, the RHR auto start function was inhibited for RHR Pumps 1B and 1D, other ECCS, the Core Spray [BM] and the High Pressure Coolant Injection [BJ] systems were available for ECCS injection. Additionally, the RHR pumps impacted during this event were available for manual operation. Operations readily recognized the condition and the required entry into TS LCO 3.0.3 lasted for only approximately one minute. Therefore, TVA concludes that the event did not affect the health and safety of the public.

NARRATIVE

VI. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

Unit 1 operations suspended the performance of surveillance 1-SR-3.3.5.1.6(BI).

Operations revised the affected step in 1-SR-3.3.5.1.6(BI), and then successfully completed the surveillance.

B. Corrective Actions to Prevent Recurrence [1]

Procedures which have not been satisfactorily performed (24 Month ECCS logic surveillances) have been placed on administrative hold until a technical review is completed and any needed revisions are made.

Operations Procedures Group procedure writers will be re-indoctrinated on adequate independent qualified review techniques.

VII. ADDITIONAL INFORMATION

A. Failed Components

None.

B. Previous LERs on Similar Events

None.

C. Additional Information

Corrective action document PER 166487.

D. Safety System Functional Failure Consideration:

This event is a safety system functional failure in accordance with NEI 99-02.

E. Loss of Normal Heat Removal Consideration:

This event was not a complicated scram according to NEI 99-02.

VIII. COMMITMENTS

None.

[1] TVA does not consider the corrective action a regulatory requirement. TVA will track the completion of the actions in the Corrective Action Program.