



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

January 8, 2017

10 CFR 50.73

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Units 1 and 2  
Facility Operating License Nos. NPF-90 and NPF-96  
NRC Docket Nos. 50-390 and 50-391

Subject: **Licensee Event Report 390/2017-015-00, Failure to Enter Limiting Condition of Operation Action Statement Results in a Condition Prohibited by Technical Specifications**

This submittal provides Licensee Event Report (LER) 390/2017-015-00. This LER provides details concerning inappropriate use of guidance leading to a condition prohibited by Technical Specifications, and is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B). A supplement to this report addressing cause and corrective actions is expected to be submitted by March 8, 2018.

There are no regulatory commitments contained in this letter. Please direct any questions concerning this matter to Kim Hulvey, WBN Licensing Manager, at (423) 365-7720.

Respectfully,

A handwritten signature in black ink, appearing to read 'Paul Simmons', written over a white background.

Paul Simmons  
Site Vice President  
Watts Bar Nuclear Plant

Enclosure  
cc: See Page 2

U.S. Nuclear Regulatory Commission  
Page 2  
January 8, 2018

cc (Enclosure):

NRC Regional Administrator - Region II  
NRC Senior Resident Inspector - Watts Bar Nuclear Plant



**LICENSEE EVENT REPORT (LER)**

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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@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.

<b>1. FACILITY NAME</b> Watts Bar Nuclear Plant, Unit 1	<b>2. DOCKET NUMBER</b> 05000390	<b>3. PAGE</b> 1 OF 5
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**4. TITLE**  
Failure to Enter Limiting Condition of Operation Action Statement Results in a Condition Prohibited by Technical Specifications

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
11	09	2017	2017	015	00	1	08	2018	Watts Bar Nuclear Plant, Unit 2	05000391
									FACILITY NAME	DOCKET NUMBER

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

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
100	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A	

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT Dean Baker, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 423-452-4589
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**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**      **15. EXPECTED SUBMISSION DATE**

<input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	MONTH	DAY	YEAR
	3	08	2018

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

On November 9, 2017, an issue was identified where Technical Specification (TS) Limiting Conditions of Operation (LCOs) were not entered when non-TS Engineered Safety Feature (ESF) area coolers were removed from service for maintenance. The Watts Bar Nuclear Plant (WBN) had been performing maintenance on ESF coolers serving Auxiliary Building areas without entering the TS LCO Action Statements associated with equipment present in those areas. Specific areas of concern identified were the general areas of the 713 foot and 737 foot elevations of the Auxiliary Building. These coolers were taken out of service for time periods longer than allowed for ESF equipment (typically 72 hours), which would represent a condition prohibited by the TS.

At this time, WBN has not confirmed that for those cases where a cooler was taken out of service without entering a TS LCO if an actual adverse impact on safety function would have occurred if an accident with a single failure had occurred during those time periods. Those details, and the cause and corrective actions related to a 2010 guidance change, will be provided in a supplement to this report.



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

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1. FACILITY NAME  Watts Bar Nuclear Plant, Unit 1	2. DOCKET NUMBER  05000390	3. LER NUMBER		
		YEAR  2017	SEQUENTIAL NUMBER  - 015	REV NO.  - 00

**NARRATIVE**

I. PLANT OPERATING CONDITIONS BEFORE THE EVENT

Watts Bar Nuclear Plant (WBN) Unit 1 was in Mode 1 at 100 percent rated thermal power (RTP) . WBN Unit 2 was defueled (No Mode).

II. DESCRIPTION OF EVENT

A. Event Summary

On November 9, 2017, an issue was identified where Technical Specification (TS) Limiting Conditions of Operation (LCOs) were not entered when non-TS Engineered Safety Feature (ESF) area coolers {EIS:CLR} were removed from service for maintenance. The Watts Bar Nuclear Plant (WBN) had been performing maintenance on ESF coolers serving Auxiliary Building ventilation {EIS:VF} areas without entering the TS LCO Action Statements associated with equipment present in those areas. Specific areas of concern identified were the general areas of the 713 foot and 737 foot elevations of the Auxiliary Building. These coolers were taken out of service for time periods longer than allowed for ESF equipment (typically 72 hours).

This event is being reported to the Nuclear Regulatory Commission (NRC) under 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

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

No inoperable equipment contributed to this event.

C. Dates and Approximate Times of Occurrences

Date	Event
4/5/2002	NRC issues letter to Perry plant related to application of Generic Letter 80-30 guidance to an inoperable non-technical specification support subsystem.
4/5/2010	WBN adopts the Perry guidance into plant documents via an engineering change.
11/9/2017	CR 1357258 generated questioning the need for TS LCO Action Statement entry requirements for removing a redundant, non-TS ESF cooler from service.

D. Manufacturer and Model Number of Components that Failed During the Event

There were no failed components that contributed to this event.

E. Other Systems or Secondary Functions Affected

No other systems or secondary functions were affected.

F. Method of discovery of each Component or System Failure or Procedural Error



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Watts Bar Nuclear Plant, Unit 1	05000390	2017	- 015	- 00

**NARRATIVE**

The issue was identified by an NRC resident inspector.

**G. Failure Mode and Effect of Each Failed Component**

There was no equipment failure associated with this event.

**H. Operator Actions**

Upon identification of the issue, non-TS ESF coolers were not removed from service without either entering a TS LCO Action Statement or having an engineering evaluation performed to demonstrate that with the cooler removed from service and a failure of the opposite train (including associated train coolers), no loss of safety function would occur if an accident were to occur and thereby not necessitating a TS LCO Action Statement entry.

**I. Automatically and Manually Initiated Safety System Responses**

None.

**III. CAUSE OF THE EVENT**

**A. The cause of each component or system failure or personnel error, if known.**

The cause of this issue is under investigation.

**B. The cause(s) and circumstances for each human performance related root cause.**

The cause of this issue is under investigation.

**IV. ANALYSIS OF THE EVENT**

NRC Generic Letter 80-30 identifies requirements related to the operability of plant equipment including support systems. The definition of operability includes "cooling" which would be inferred to mean ventilation and heat exchangers. A specific subset of Watts Bar equipment to which the above statement applies would be the non-TS ESF area coolers

In 2002, the Perry nuclear plant was issued a clarification letter for the intended treatment of an "unusual" support system arrangement in which a non-TS support system has two redundant 100% capacity subsystems, each capable of supporting both trains of TS equipment. In this letter, it was clarified that the loss of one support subsystem does not result in a loss of support for either train of TS equipment, and both TS trains would remain operable despite a loss of support function redundancy, because the TS definition of operability does not require a TS subsystem's necessary support function to meet the single failure design criterion. The risk of operating in a non-single failure proof configuration could be assessed and managed by 10 CFR 50.65(a)(4), i.e., the Maintenance Rule. This guidance was defined in its own cover letter as a "clarification of existing generic guidance developed by the TS Section of the Office of Nuclear Reactor Regulation," and appeared to be generic in intent and application. The Perry guidance was adopted by WBN in 2010.



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**NARRATIVE**

NRC position on this issue may have changed and is documented in a number of violations at other stations starting in the late 2000's and 2010 time period. These issues were identified and are the source of CR 1357258.

**V. ASSESSMENT OF SAFETY CONSEQUENCES**

Engineering evaluations pertaining to the safety consequences of this issue are in progress; however, at this time, a number of auxiliary building areas have been evaluated assuming one cooler out of service, coincident with an accident and single failure resulting in the loss of the opposite train of ESF equipment (including coolers). These preliminary reviews have demonstrated that the safety function for the equipment served by the applicable coolers would have been met, and the need to enter TS LCOs as supporting equipment was not required.

- A. Availability of systems or components that could have performed the same function as the components and systems that failed during the event

The impact of this issue is under investigation.

- B. For events that occurred when the reactor was shut down, availability of systems or components needed to shutdown the reactor and maintain safe shutdown conditions, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident

The impact of this issue is under investigation.

- C. For failure that rendered a train of a safety system inoperable, an estimate of the elapsed time from the discovery of the failure until the train was returned to service

The impact of this issue is under investigation.

**VI. CORRECTIVE ACTIONS**

This event was entered into the Tennessee Valley Authority (TVA) Corrective Action Program and is being tracked under Condition Report (CR) 1357258.

- A. Immediate Corrective Actions

Upon identification of the issue, Non-TS ESF area coolers were not removed from service without either entering a TS LCO or having an evaluation performed to demonstrate that with the cooler removed from service and a failure of the opposite train (including associated train coolers), no loss of safety function would occur.

- B. Corrective Actions to Prevent Recurrence or to Reduce Probability of Similar Events Occurring in the Future

Actions to prevent recurrence will be provided in a supplement to this report.



### LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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**NARRATIVE**

VII. PREVIOUS SIMILAR EVENTS AT THE SAME SITE

This will be provided in a supplement to this report.

VIII. ADDITIONAL INFORMATION

None.

IX. COMMITMENTS

None.