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John A. Scalice
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JUN 29 1996

U.S. Nuclear Regulatory Commission
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Gentlemen:

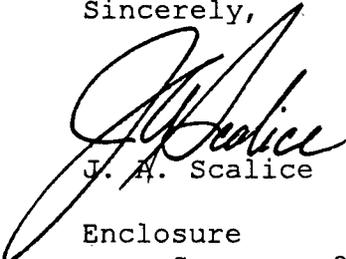
In the Matter of) Docket Number 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 FACILITY OPERATING LICENSE
NPF-90 - LICENSEE EVENT REPORT (LER) 50-390/96018 - INADEQUATE
PERFORMANCE OF A ICE CONDENSER SURVEILLANCE REQUIREMENT -
SUPPLEMENTAL REPORT

The purpose of this letter is to provide the subject supplemental LER report. LER 390/96018 was initially submitted May 30, 1996. The enclosed report provides a revision to this LER to include TVA's evaluation of the doors previously identified as not meeting the surveillance requirement. TVA has evaluated this condition to be not safety significant. In addition, the action of enhancing Surveillance Instruction 1-SI-61-5 to require inspection of 100 percent of the lower inlet doors was deleted from this LER for As Low As Reasonably Achievable (ALARA) reasons.

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

Sincerely,



J. A. Scalice

Enclosure
cc: See page 2

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cc (Enclosure):

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ENCLOSURE

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-8 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.

FACILITY NAME (1) Watts Bar Nuclear Plant - Unit 1		DOCKET NUMBER (2) 05000390	PAGE (3) 1 OF 7
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TITLE (4)
Inadequate Performance of Ice Condenser Surveillance Requirement

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
04	30	96	96	018	01	07	01	96		05000
										05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)										
POWER LEVEL (10) 013	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	
	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 Rickey Stockton, Compliance Licensing Engineer	TELEPHONE NUMBER (include Area Code) (423)-365-1818
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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
A	BC	DR	W351	N					

SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE.)	<input checked="" type="checkbox"/> NO							

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

On April 30, 1996, with Unit 1 operating in Mode 1 at 13 percent rated thermal power (RTP), TVA identified a portion of the ice condenser lower inlet door inspections required by Surveillance Requirements (SR) 3.6.12.3 and 3.6.12.4 were not performed. The inspections performed on February 23, 1996, per Surveillance Instruction (SI) 1-SI-61-5, were found not to include all of the inlet doors. These unperformed inspections were determined to constitute a missed Surveillance Requirement and therefore, reportable under 10CFR50.73 (a)(2)(i).

Upon discovery of this condition, TVA declared the doors not inspected inoperable and entered action B of Technical Specification (TS), Limiting Condition for Operation (LCO) 3.6.12. SI 1-SI-61-5, "18 Month Ice Condenser Lower Inlet Door Inspection," was re-performed on May 13, 1996, and LCO 3.6.12 was exited later that day. The subsequent investigation determined that the cause was personnel error due to a misinterpretation of the SI. Corrective action included disciplinary action for the individuals.

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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 operating in Mode 1 at 13 percent RTP.

II. DESCRIPTION OF EVENT

A. Event

Previous to this event in July 1995, December 1995, and February 1996, SI 1-SI-61-5 was performed to inspect the lower ice condenser inlet doors (Energy Industry Identification System (EIS) Code BC/DR) to satisfy SRs under TS 3.6.12. On April 30, 1996, with Unit 1 operating in Mode 1 at 13 percent RTP, TVA identified that a portion of the ice condenser lower inlet door inspections required by SR 3.6.12.3 and 3.6.12.4 were not performed in the February 1996 inspection.

The previous inspections performed in July 1995 and December 1995 per the SI had also initially been found not to include all of the inlet doors. However, these inspections were subsequently completed within the time requirement of the SR.

Upon discovery of the February 1996 condition, TVA declared the doors not inspected inoperable and entered action B of LCO 3.6.12 which requires verification of maximum ice bed temperature to be less than or equal to 27 degrees F and restore ice condenser doors to operable status and closed positions. The SI was re-performed on May 13, 1996, with a number of doors (i.e., 15 of 48) exceeding the allowable force from the required 40 degrees open position; but after the doors were exercised, they met the acceptance criteria. No ice buildup or restrictions were found. LCO 3.6.12 was exited later that day at 1645 EDT.

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

There were no inoperable structures, components, or systems other than the subject inlet doors that contributed to the event.

C. Dates and Approximate Times of Major Occurrences

DATE	TIME	EVENT
7/95		Surveillance Instruction 1-SI-61-5, "18 Month Ice Condenser Lower Inlet Door Inspection," performed.
12/95		Surveillance Instruction 1-SI-61-5, "18 Month Ice Condenser Lower Inlet Door Inspection," performed.
2/96		Surveillance Instruction 1-SI-61-5, "18 Month Ice Condenser Lower Inlet Door Inspection," performed.
4/30/96	2150	Declared lower inlet doors not inspected inoperable and entered action B of LCO 3.6.12.

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5/13/96

Surveillance Instruction 1-SI-61-5 re-performed. Lower inlet doors declared operable and LCO 3.6.12 exited.

D. Other Systems or Secondary Functions Affected

No other systems or secondary functions were affected.

E. Method of Discovery

The missed inspections were discovered during a system engineer's review (for a reason other than a normal closure review) of the completed SI package.

F. Operator Actions

Operations personnel declared the affected doors inoperable and entered action B of LCO 3.6.12 to begin monitoring the ice bed temperature every four hours to confirm the temperature was less than or equal to 27 degrees F.

G. Automatic and Manual Safety System Response

There were no automatic or manual safety system responses due to this condition.

III. CAUSE OF EVENT

The root cause of this condition was determined to be personnel error by maintenance workers due to a misinterpretation of the SI. The requirements of SI 1-SI-61-5 were to inspect 100 percent of the doors for ice, frost, or debris and to verify torque required to cause each inlet door to open at less than 675 inch-pounds. The SI had also required that a torque test on greater than or equal to 50 percent of the doors to determine the opening and closing torque values from a preset door position of 40 degrees open. Discussions with the involved individuals revealed that after the February SI pretest briefing the understanding that the individuals had was that only 50 percent of the doors were to be inspected and tested. Some of these individuals had also participated in all three performances of this SI.

IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES

A. Evaluation of Plant Systems/Components

The ice condenser doors consist of the lower inlet doors, the intermediate deck doors (EIS Code BC/DR), and the top deck doors (EIS Code BC/DR). The functions of the doors are to:

- a. Seal the ice condenser from air leakage during normal operation; and

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- b. Open in the event of a Design Basis Accident (DBA) to direct the hot steam/air mixture from the DBA (line break in the lower compartment) into the ice bed, where the ice would limit containment peak pressure and temperature during the postulated accident.

Limiting the pressure and temperature following a DBA assures containment design conditions are not exceeded, therefore, minimizes the release of fission product radioactivity from containment to the environment.

The operability of these doors is verified through the performance of SI 1-SI-61-5. The ice condenser inlet doors are visually inspected to verify that they are not impaired by ice, frost, or debris. This provides assurance that the doors are free to open in the event of a DBA. For this unit, the frequency is once per 18 months (every 3 months during the first year after receipt of license).

Testing of the inlet doors for opening torque under the SI provides assurance that no doors have become stuck in the closed position. For this unit, the frequency of 18 months (every 3 months during the first year after receipt of license) is based on the passive nature of the door mechanism (i.e., once adjusted, there are no known factors that would change the setting, except possibly a buildup of ice, however, ice buildup is not likely because of the door design, which does not allow water condensation to freeze).

The torque test surveillance ensures that the inlet doors have not developed excessive friction and that the return springs are producing a door return torque within limits. The purpose of the friction and return torque specifications is to ensure that, in the event of a small break Loss of Coolant Accident (LOCA) or Small Line Break (SLB), all of the 24 door pairs open uniformly. This assures that, during the initial blowdown phase, the steam and water mixture entering the lower compartment does not preferentially pass through only a part of the ice condenser, depleting the ice locally, while bypassing the ice in other bays.

B. Evaluation of Personnel Performance

Upon review of the procedure, the instructions required each door to be inspected and it was determined the procedure was adequate to implement the Surveillance Requirements SRs. The individuals involved in the performance of the SI appeared to have been influenced by previous SI performances where only a portion of the doors were initially inspected. Had the individuals performed a self-check and performed the procedure as stated, the improper surveillances would not have occurred.

C. Safety Significance

Although not associated with the reportable condition, the re-performance results of SI 1-SI-61-5 are as follows: All of the lower inlet doors met the initial opening force of 675 inch-pounds (SR 3.6.12.4). However, 15 doors were found not to meet the Technical Specification Surveillance Requirements for opening (SR bases 3.6.12.5.1) and frictional

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torque (SR bases 3.6.12.5.3). Both SRs require the doors to be in the 40 degrees open position.

Specifically, 15 doors exceeded the opening torque acceptance criteria (13 doors by less than 2.8 percent or 5.6 inch-pounds, 1 door by 13 percent or 25.68 inch-pounds, and 1 door by 23 percent or 45.75 inch-pounds). The door paired in the same ice condenser opening with the last door above met the acceptance criteria. Additionally, 3 of the 15 doors exceeded the frictional torque acceptance criteria by 0.3 percent or 0.125 inch-pounds.

After being exercised, the subject doors met the SR. In addition, the SI re-performance verified that no ice buildup or restriction existed. SRs 3.6.12.5.1 and 3.6.12.5.3 are required to be performed on a greater than or equal to 50 percent sample every 3 months. Since the doors performed under the February 1996 inspections met the SR, the doors were within frequency of the TS requirements.

The surveillance results associated with the 15 doors described above were reviewed by WBN's Nuclear Steam Supply System (NSSS) vendor, Westinghouse. The Westinghouse review evaluated the surveillance results against the WBN licensing basis analyses. The analyses areas reviewed and the review conclusions are provided as follows: 1) Subcompartment Analyses - The validity of the current licensing basis subcompartment analyses is not compromised by the above condition, 2) Long-Term LOCA Containment Analysis - The validity of the current licensing basis long-term LOCA containment integrity analyses is not compromised by this condition, 3) Long-Term Main Steam Line Break (MSLB) Containment Analysis - The validity of the current licensing basis long-term MSLB containment integrity analyses is unaffected by this condition and remains bounding, 4) Maximum Reverse Differential Pressure Analysis - It is concluded that the current licensing analysis remains bounding, and 5) Deck Bypass - There still would remain substantial margin between the design deck leakage and that which can be tolerated without exceeding the containment design pressure.

Therefore, based on the above, TVA has determined the licensing basis remains bounding and that the opening torque condition associated with the 15 doors is not safety significant. Further, no changes to the 40 degrees open torque values are considered necessary since the present surveillance values are conservative and provide adequate design margin.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

The immediate corrective actions for this event are described under the operator actions section of this report.

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B. Corrective Actions to Prevent Recurrence

The personnel involved in the inadequate performance of SI 1-SI-61-5 received disciplinary action in accordance with TVA personnel policy.

In addition, plant management conducted standdown meetings on May 6 and 7, 1996, with plant personnel on plant events caused by personnel errors.

TVA will evaluate the SI results for the first year after receipt of license to determine whether the conditions experienced for the 15 doors require additional corrective actions. This action will be completed by December 16, 1996.

VI. ADDITIONAL INFORMATION

A. Failed Components

1. Safety Train Inoperability

The subject inlet doors not inspected during the February 23, 1996, SI performance were considered inoperable until the SI was re-performed.

2. Component/System Failure Information

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

The missed inspections were discovered during a system engineer's review (for a reason other than a normal closure review) of the completed SI package.

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

The missed inspections were not completed as required by SI 1-SI-61-5 due to personnel error. As previously discussed, the effect of not identifying these doors was determined by TVA as not safety significant and would not have been detrimental to the continued operation of the plant.

c. Root Cause of Failure:

The missed inspections were not completed due to personnel error involving a misinterpretation of the SI.

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

See analysis of event section for discussion of the functions affected.

e. **Manufacturer and Model Number of Each Failed Component:**

Westinghouse - Ice Condenser Lower Inlet Doors

B. **Previous Similar Events**

LER 390/96003, submitted March 28, 1996, involved a surveillance that was not performed on the ice condenser divided barrier seal. However, that LER differed in that the inspections were to be performed on a personnel hatch for detrimental misalignments, cracks, or defects. This inspection was not performed prior to the final hatch closure.

VII. **COMMITMENTS**

The actions taken in response to this event have been completed with the exception of the review of the SI results to be completed by December 16, 1996. These are tabulated in Section V, Corrective Actions.