## TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401 400 Chestnut Street Tower II

August 30, 1985

Director of Nuclear Reactor Regulation Attention: Ms. E. Adensam, Chief Licensing Branch No. 4 Division of Licensing U.S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of the Application of ) Docket Nos. 50-390 Tennessee Valley Authority ) 50-391

In response to deviation 01 in NRC's inspection report 390/85-33 on our Watts Bar Nuclear Plant, we committed to a complete review of the NRC Safety Evaluation Report (SER) to ensure that commitments we had made which were reflected in the SER had been completed.

Our review is complete and the results are being submitted to Region II in accordance with our response to the deviation. During the review, we identified 29 items which do not reflect current submittals we have made to support our application for the plant operating license. A list of these statements, actions needed for correction, and references to our submittals is enclosed. Some of these items may be addressed in Supplement 5 to the SER which we understand will be published soon. We will work with the NRC project manager to resolve any remaining discrepancies.

If there are any questions, please get in touch with K. P. Parr at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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R. H. Shell Nuclear Engineer

Sworn to and subscribed before me Jon day of Mgast 1985 Notany Public My Commission Expires

Enclosure cc: U.S. Nuclear Regulatory Commission (Enclosure) Region II Attention: Dr. J. Nelson Grace, Regional Administrator 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

## NRC ACTIONS IDENTIFIED THROUGH THE SER REVIEW RESULTING FROM PREVIOUS TVA SUBMITTALS, AGREEMENTS & OTHER NRC ACTIONS

TVA <u>Commitment</u> #	SER Reference	SER Statement	Responsible <u>Organization</u>	Action Needed
2.001	SER Section 2.1.2, page 2-6	"In the event of an emergency, control of the movement of people on the water- way will be carried out by the TVA security force at the plant."	NRC	TVA provided a correct description of waterway control in the Radiological Emergency Plan (REP, Tab A, App. 4, Annex B). Waterway con- trol is the responsibility of the U.S. Coast Guard and has been planned for in the REP. The NRC should revise this statement by supple- ment to the SER.
2.002	SER Section 2.2.2, page 2-9	"Because the Department of Defense has agreed to relocate such routes (military training routes) so that they are at least 5 mi. from an operating nuclear plant, and because the staff has found such distances acceptable, the staff will require satisfactory confirmation that these routes have been relocated before fuel loading for the plant."	NRC	Per NRC/FAA/DOD interagency agreement, the NRC is to notify the FAA and DOD when the impending existence of an operating nuclear plant will require rerouting of FAA airways and DOD mili- tary training routes. The NRC should acknow- ledge by supplement to the SER that this notification and subsequent rerouting has occurred.
4.011	SER Section 4.4.8, page 4-20	"Analysis and procedures for the detection of ICC using existing instrumentation have been developed in conjunction with the Westinghouse Owners' Group. The applicant has committed to incorporate this guidance into plant procedures before fuel load."	NRC	This is partially complete. Incomplete items will be implemented by the first refueling outage pending evaluation of RVLIS operation during the first cycle and NRC safety review. Reference TVA letter dated February 25, 1985, providing TVA's latest position. The NRC should acknowledge by supplement to the SER or the operating license the conditions agreed to for detection of ICC.
6.015	SER Section 6.2.4, page 6-19	"The applicant must modify each of these lines (chemical feed lines off of feed- water lines) to satisfy the requirements of GDC 57."	NRC	In lieu of meeting GDC 57 requirements by installing isolation valves, the chemical feed lines have been removed. TVA revised the commitment in letters to the NRC dated January 25, 1983, and April 22, 1983. Resolution is under review by the NRC as stated in SSER4. The NRC should appropriately revise the SER statement when resolved.
6.018	SER Section 6.2.6, page 6-22 & 23	"The applicant has committed to perform local leak rate tests in accordance with the requirements of Appendix J to 10CFR50 and to limit the total potential leakage, which could bypass the emergency gas treat- ment system and be treated by the auxiliary building gas treatment system, to 10 percer of the containment design leakage rateat 15.0 psig."	NRC - - 	Amendment 48 to FSAR, Table 14.2-1, sheet 104, specifies the total potential leskage limit to be 25 percent of the containment design leakage rate at 15.0 psig. The NRC should revise this statement by supplement to the SER.

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Page D-2

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TVA Commitment_#	SER Reference	SER_Statement	Responsible <u>Organization</u>	Action Needed
6.019	SER Section 6.3.2, page 6-26	"The applicant will remove power to the normally open valves in the hot-leg injection lines to preclude inadvertent actuation during initial injection phase	NRC	Power is not removed from the majority of the valves listed. TVA notified the NRC of its position and rationale concerning these valves by letter from R.H. Shell to E. Adensam, dated April 19, 1985. The NRC should revise this statement by supplement to the SER.
6.020	SER Section 6.3.2, page 6-27 '	"the applicant has committed to use emergency operating procedures which preclude manual reset of the safety injection signal for at least 10 minutes following a safety injection signal."	NRC	TVA no longer intends to prohibit reset of a safety injection signal for at least 10 minutes. TVA notified the NRC of its position by letter from TVA to NRC dated October 25, 1984. The NRC should revise this statement by supplement to the SER.
6.022	SER Section 6.3.2, page 6-27 & 28	" The second scenario postulates a failure in volume control tank level instrumen- tation, diverting letdown away from the volume control tank and permitting con- tinued charging pump suction from the volume control tank, with eventual cavi- tation of the charging pump(s). The applicant has addressed this scenario indicating that diversion of letdown flow to a holdup tank (on high level in the volume control tank [VCT]) rather than to the VCT and automatic opening of a charging pump suction path from the RWST (on low VCT level) are both initiated independently by either of two diverse VCT level transmitters. In addition, the applicant has indicated that for this scenario, only one charging pump would normally be operating with two others in standby as backup; one charging pump has adequate capacity for long-term shut- down makeup requirements. Control room indications and alarms would alert the operator to the above occurrences and assist in diagnosing the event. Based on the foregoing discussion, the staff finds the applicant's response accep- table."	NRC	<ul> <li>TVA provided incorrect information in FSAR sections 9.3.4.2.1 and 9.3.4.2.5 in that it is stated that a low-low signal from <u>either</u> channel will actuate the switchover (VCT to RWST). In fact, <u>both</u> level channels must provide a low-low signal in order to actuate the switchover. TVA recognized this error prior to the SER review and documented this condition on NCR WBNNEB8504, dated April 17, 1985.</li> <li>The postulated failure of one (CCP) while the other CCP is on a technical specification outage is outside the Watts Bar design bases since single failure criteria does not apply on a technical specification allowed outage. However, TVA acknowledges failure of a CCP is undesirable. Therefore, TVA has analyzed this scenario and offers the following description of the actions that the operator would take to mitigate this event.</li> <li>The situation exists that one of the volume control tank (VCT) level transmitters could fail high causing a low level in the VCT due to letdown flow diversion to the holdup tank. This also creates the inability to automatically transfer the charging pumps' suction to the RWST at the low level because only one low level transfer signal is present. This could result in damage to the charging pumps if the VCT completely drains.</li> </ul>

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6.022 (cont'd)			If level transmitter LT-62-130A fails high is below the high alarm set point and letdown is is diverted to the holdup tank due to the h- level signal from the failed transmitter, the operator will receive a low level alarm from the operable level transmitter when the VCT level is drained to 9" (779.9 gal. remaining the VCT) as shown on the indicator for the working level transmitter. The normal flow rate from the VCT to the charging pumps is gal/min. At this flow rate, the time requi to drain the volume control tank, thus enda gering the charging pump, is greater than 1 minutes. Therefore, when the low level ala sounds, the operator has adequate time (gree than 10 minutes) in which to take correctiv actions to assure that the charging pumps w have an adequate pump suction source to pre- vent any possible damage. The operator can accomplish this by manually switching the 1 down flow back to the volume control tank of manually opening the charging pumps suction valves from the RWST.
			If level transmitter LT-62-129A fails high, letdown flow is diverted to the holdup tank a high level alarm is generated during which time the level of the VCT decreases as the charging pump continues to draw suction from the tank. When the level of the VCT decreass to 14 inches, VCT-makeup is initiated by the other level transmitter (LT-62-130A). The high level alarm would alert the operator to an abormal condition. Should the VCT level continue to decrease to the low level point the operator would still have at least 10 minutes to manually switch the letdown flow back to the VCT or open suction to the RWST. Revisions to the errant FSAR sections were submitted to the NRC by letter dated July 30
6.032 SER Section 6.3.4, page 6-33	"The applicant has described his shutdown procedures to close and lock out power to accumulator isolation valves while shut- ting down as follows:	NRC	by supplement to the SER. No reference can be found in the FSAR, FSAR questions, or Technical Specification to mai taining RCS pressure until the temperature of 425 degrees F or less. Reference is made to
	<ol> <li>At 1000 psig, the operator will maintain pressure &amp; cool down the RCS to less than 425 degrees F.</li> <li>At 1000 psig &amp; less than 425 degrees F, the operator will close &amp; lock out the preservation in the preservation of the pre</li></ol>		TVA response to FSAR Question 212.25 (6.3.2. TVA intends to use the cooldown curve in the Technical Specification to control the RCS pressure/temperature relationship. The NRC should revise this statement by supplement t

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Page D-3

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TVA Commitment #	SER_Reference	SER Statement	Responsible <u>Organization</u>	Action Needed
7.015	SER Section 7.7.6, page 7-24	"Unresolved Safety Issue A-47, "Safety Implications of Control Systems," will address control system designs and the need for any control system design modifications. The applicant will be required to address staff guidance which may result from the resolution of the unresolved safety issue."	NRC	TVA understands that resolution of this issue is scheduled for April 1986. Until such time, no action is required.
8.032	SER Section 8.3.3.5.1, page 8-21	"The applicant, by letter dated October 16, 1981, has documented that the FSAR will be revised to indicate full compliance to Reg Guide 1.118 ("Periodic Testing of Electric Power and Protection Systems"). The staff finds this acceptable."	NRC	TVA commitment to comply fully with Reg Guide 1.118 has been revised with FSAR Amendment 52. The NRC should appropriately revise this state- ment by supplement to the SER.
8.036	SER Section 8.3.3.6, page 8-24	"In regard to testability of fuses In addition, the staff will require, and include as part of its Technical Specification, a periodic measure- ment of the fuses and terminal connec- tion resistance."	NRC	TVA and NRC met on 2/6/85 regarding periodic fuse resistance measurement Technical Specifi- cations. TVA revised the FSAR in Amendment 55 with regard to Reg Guide 1.63 for testability. The final draft Technical Specifications have removed fuse testability requirements. The NRC should revise this statement by supplement to the SER.
8.038	SSER 2, Section 8.2.2.2, page 8-1	"Testing requirements for the automatic transfers and the design, which prevents a faulted or overloaded bus from being automatically transferred, will be reviewed with the Technical Specifications.	NRC	TVA has decided to rack out the alternate feeder breaker in lieu of testing the lock-out feature. The NRC has accepted this position and should revise this statement by supplement to the SER. Reference TVA letter from R.H. Shell to E. Adensam, dated April 17, 1985.
9.016	SER Section 9.3.2, page 9-18	"The staff will require that the applicant submit data supporting the applicability of each selected analytical chemistry procedure or online instrument, along with documentation demonstrating compliance with the licensing condition 4 months before the facility exceeds 5 percent power operation, but review and approval of these procedures will not be a condition for full power operation."	NRC	The NRC has not made this request of TVA. Resultantly, this information has not been provided. It is TVA's understanding that the referenced data and documentation is not needed by the NRC. The NRC should revise this statement by supplement to the SER.
9.019	SER Section 9.3.3, page 9-19	"Level indicators and alarms are provided in the control room for monitoring all sump operating modes. Water level moni- toring at the lowest auxiliary building elevation is provided by redundant seismic Category I, Class lE switches mounted on the floor; alarm in the control room when the water reaches a depth of 3 inches."	NRC	This statement is unclear and does not accura- tely reflect FSAR section 6.3.2.11.2. To satisfy Post Accident Monitoring requirements, there are two Category I, Class lE level swit- ches in the passive sump beneath the pump rooms with indicators and recorders in the main con- trol room. There are also non-qualified level sensors in the pump rooms with alarms in the main control rooms. The NRC should revise this statement by supplement to the SER.
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TVA Commitment #	SER Reference	SER Statement	Responsible <u>Organization</u>	Action Needed
9.020	SER Section 9.4.1, page 9-21	"The control building outside air intakes are provided withchlorine detectors"	NRC	The chlorine detectors have been deleted. A main control room habitability analysis deter- mined that there is no threat due to chlorine. The NRC was notified by letter from TVA dated April 26, 1985, which identified Technical Specification and FSAR revisions needed. The NRC should revise this statement by supplement to the SER.
9.028	SER Section 9.5.1.2, page 9-30	"A manually operated total flooding CO2 system, with a 2-min. delay, is also provided for the cable spreading room, which will be used only as a backup system to the automatic sprinkler system.	NRC	TVA revised this commitment by letter to the NRC dated January 25, 1985. In that letter, TVA stated that the total flooding CO2 system for the cable spreading room has been deleted. The NRC should revise this statement by supple- ment to the SER.
9.035	SER Section 9.5.1.5, page 9-38	"The applicant verbally agreed on August 27, 1981, to provide an analysis which shows that the Askarel-insulated trans- formers cannot explode. This will be documented in a future FSAR amendment, and the staff will report on this item in a supplement to this SER."	NRC	The analysis has been submitted to the NRC in a letter dated June 23, 1982. However, no FSAR revision is necessary since TVA's analysis resulted in no design change. The NRC should revise this statement by supplement to the SER.
9.037	SER Section 9.5.2.1, page 9-41	"The administrative telephone system switching equipment will be located in the office building and will function without the PAX for those trunks which are not PAX trunks."	NRC	FSAR Amendment 52 addressed the as-built con- figuration of the administrative telephone system. This system switching equipment will be located within the PAX and will not function without PAX. The NRC should revise this state- ment by supplement to the SER.
9.039	SER Section 9.5.2.2, page 9-46	"The staff requires that the communication systems be preoperationally tested in accordance with Regulatory Guide 1.68 to demonstrate that the system will function properly & provide adequate communication with the maximum potential background noise levels."	NRC	TVA's position on this issue was provided by TVA letters from J.W. Hufham to E. Adensam, dated February 13, 1985, and J.A. Domer to E. Adensam, dated March 18, 1985. The NRC has accepted our position & should revise this statement by supple- ment to the SER.
9.053	SSER 3, Section 9.3.2, page 9-3	"The applicant has stated that a undiluted containment atmosphere grab sample will be obtained for analysis ofoxygenin the containment atmosphere."	NRC	TVA does not plan to sample for oxygen in the containment atmosphere because WBN does not have an inert atmosphere. TVA provided its last response to the NRC on this issue in a TVA letter from L. Mills to E. Adensam dated September 20, 1983. The NRC should revise this statement in a supplement to the SER.

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TVA Commitment #	SER Reference	SER Statement	Responsible Organization	Action Needed
10.001	SER Section 10.2.1, page 10-2	"The staff requires the following in- service inspection program: (1) dis- mantling and inspection of all turbine steam valves, at approximately 3-1/3- year intervals during refueling or maintenance shutdowns coinciding with the inservice inspection schedule, and (2) exercising and observing of the main steam stop and control, reheat stop, and intercept valves at least once a week."	NRC	In a letter to the NRC dated March 25, 1985, TVA committed to implement a Turbine Integrity Program with Turbine Overspeed Protection (TIPTOP). This program includes frequencies for value disassembly and exercising different than stated in the SER. The turbine vendor and the NRC have concurred with TIPTOP. The Tehcnical Specifications have been revised and accepted by the NRC to reflect this change. The NRC should revise this statement by supple- ment to the SER.
10.007	SER Section 10.4.4, page 10-9	"The staff requires, as a maximum, the stroking of the valve on a periodic basis (at least once a quarter)."	NRC	In a letter to the NRC dated April 9, 1985, TVA documented that quarterly stroking of the steam dump valves is not practical or desir- able. We understand that the NRC now agrees with TVA's position. The NRC should revise this statement by supplement to the SER.
10.010	SER Section 10.4.9, page 10-14	"The applicant has provided verification (through analysis) that the AFW pumps can survive the transition to the back- up water source in the event the pre- ferred source is unavailable. The staff will require that the vendor of the pumps concur with the results of the analysis that verify the pump surviv- ability or that the applicant perform a suitable test (such as preoperational) which demonstrates that the pumps can survive the transfer."	NRC	TVA's analysis (calculation), documented on August 29, 1984, has established that the AFW pumps will survive the transition to the back- up water source. The vendor specified NPSH requirements were used in this calculation rather than coordinating directly with the vendor. TVA contends that no further vendor coordinating is needed. TVA also contends that a test is impractable and undesirable. This information and the TVA position was submitted to the NRC by letter dated January 16, 1985.
				The NRC should revise this statement by supple- ment to the SER.
11.004	SER Section 11.3, page 11-5	"the staff will provide a Technical Specification which will require sampl- ing & analysis every 4 hours during gas monitor outages & will require that the reactor be shut down if the gas monitor outage exceeds 7 days."	NRC	TVA made several requests to the NRC to revise its position. Subsequently, the NRC approved our request which is reflected in the final draft Technical Specification, Action 40, page 3/4.3-85. The NRC should revise this statement in a supplement to the SER.
11.005	SER Section 11.4, page 11-6	"During the baling operation, the air flow in the vicinity of the baler is exhausted by a fan through a HEPA filter to the auxiliary building venti- lation system to reduce the potential for airborne."	NRC	The baler described in the SER statement has been relocated as described in FSAR 11.5.4.1 (Amendment 52). The NRC should revise this statement in a supplement to the SER.

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TVA Commitment_#	SER Reference	SER Statement	Responsible Organization	Action Needed
13.001	All of Section 13	All of Section 13.	NRC	Numerous and extensive changes have occurred in TVA since this section of the SER was written. Refer to the latest amendments to Chapters 13 and 17 of the FSAR, the Radio- logical Emergency Plan, and the Physical Security Plan.
				The NRC should revise appropriate portions of this section in a supplement to the SER.
17.001	All of Section 17	All of Section 17	NRC	The TVA Topical Report (TVA-TR75-1A), "Quality Assurance Program Description for the Design, Construction, and Operation of TVA Nuclear Power Plants," keeps the NRC apprised of our QA program. The NRC should review the content of SER Section 17 against the NRC approved Topical Report and supplement the SER accordingly.
				FSAR Chapter 17 will receive minor revisions in Amendment 56.
C-005	SER Appendix C, A-3, page C-9 & 10	"Special attention during preoperational testing will be given to tube vibration and potential wear as a result of move- ment in the tube support sheets and anti- vibration bars."	NRC	This statement is no longer valid as a result of modifications implemented for the steam generators. Refer to SSER 4, Section 5.4.2.2 which states in part that, "the staffcon- cludes that the modification of the Model D3 steam generator at Watts Bar is acceptable The applicant need not perform an early steam generator inspection" The NRC should revise the statement from Appendix C by supplement to the SER to reflect their position identified above.
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