TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

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February 6, 1985

WBRD-50-390/81-66
WBRD-50-391/81-62

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Mr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT (NUREG-0588) - WBRD-50-390/81-66, WBRD-50-391/81-62 - EIGHTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector John McDonald on July 29, 1981 in accordance with 10 CFR 50.55(e) as NCR WBN MEB 8107. Interim reports were submitted on August 31 and December 2, 1981; February 26 and August 3, 1982; and March 8, 1983. Supplemental information was submitted on April 7, 1983, followed by our final report dated December 15, 1983.

Upon further consideration, TVA has decided to re-open this NCR. Enclosed is our eighth interim report.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. W. Hufham by AH

J. W. Hufham, Manager
Licensing and Regulations

Enclosure
cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT(NUREG-0588)
10 CFR 50.55(e)
WBRD-50-390/81-66 AND WBRD-50-391/81-62
NCR WBN MEB 8107 (AND OTHERS)
EIGHTH INTERIM REPORT

Description of Deficiency

During TVA's environmental qualification program initiated per NUREG-0588 guidelines, components which lacked sufficient documentation to verify their environmental qualification were identified through nonconformance reports (NCRs) as potentially deficient. The NCRs which identify these components are listed in Table 1 along with the specific equipment involved. As identified in NCR GEN QAB 8204, this lack of adequate documentation was caused by TVA's failure to develop a controlled system to ensure that adequate environmental qualification of safety-related electrical equipment would be accomplished.

During the course of its investigation, TVA has determined that a number of NCRs (see Table 2) identified equipment which is in a mild environment, which has qualification documentation, or for which it has been determined that the equipment identified is not required for the safe shutdown of the plant or for the mitigation of a design basis event (category C of NUREG-0588, Appendix E). Because there are no safety concerns related to these NCRs, 10 CFR 50.55(e) no longer applies, and TVA will discontinue reporting on them.

Interim Progress

TVA has initiated a program for meeting the requirements of NUREG-0588. Through this program, a systematic method of determining the qualifiction status for each safety-related electrical component was established and a report entitled "Electrical Equipment Environmental Qualification Report" (EEEQR), describing this program and including a summary of the qualification for safety-related components was submitted to the NRC-NRR on August 19, 1983, and revised on July 24, 1984. Also, as this program is ongoing, additional equipment which is found to be in noncompliance with NUREG-0588 is documented by means of an NCR and is tracked through TVA's quality assurance program until the qualification problem is resolved. Table 3 gives a summary of the specific corrective action needed to establish environmental qualification for each nonconforming item identified to date.

TVA has taken steps to ensure future procurements of class 1E equipment will have necessary qualification documentation by developing an environmental design criteria which requires the evaluation and documentation of environmental parameters for all plant areas and conditions (normal, abnormal, and accident). Also, TVA has established guidelines which require applicable environmental conditions be identified and then included in the equipment specifications issued to prospective vendors.

Since this issue is being resolved primarily under the provisions of 10 CFR 50.49, environmental qualification of specific components may be deferred until after fuel loading. The final rule allows the licensee to complete its environmental qualification program after plant licensing provided that adequate justification is given for interim operation in accordance with the provisions of 10 CFR 50.49. This justification was submitted in the EEEQR referenced above.

TABLE 1

NONCONFORMANCES IDENTIFYING EQUIPMENT REQUIRING CORRECTIVE ACTION TO ASSURE NUREG-0588 QUALIFICATION OR FOR WHICH QUALIFICATION IS STILL INCONCLUSIVE

NCR	Item Type	Unique Identifier*
WBNMEB8115**	Valve operator	FCV-3-33, -100, -47, -87 2-FCV-1-15, 1-6, -17, -18 2-FCV-70-89-B, -87-B
	Valves	FSV-30-5, -2, -61, -62 PSV-65-83-B, -81-A 1-FSV-65-47A, -47B, -51 1-FSV-65-8, -28A, -28B, -24, -30, -52, -53, -10, -26, -27 1-FSV-30-28, -29, -60, -69 2-FSV-65-45, -46, -50 2-PSV-1-13A, -13B, -24A-, -24B, -31A, -6A, -6B, -31B 2-FSV-30-8-B, -10-A, -15-B, -40-B, -50-B, -52-A, -56-A, -58-B, -17-A, -20-A, -19-B, -14-A, -16-B, -37-B, -59-A, -57-B, -53-B, -51-A, -9-B, -7-A, -12A, -54A, -109, -157A, -157B, -22
	Heater controls	0-HTR-30-147A, -156B
	Limit switches	2-ZS-30-10-A, -19-B, -14-A, -59-A, -57-B, -53-B, -51-A, -7-A, -9-B
	Limit swithces on valves	2-PCV-1-12, -23 2-FSV-30-17A, -16-B, -37B 2-FCV-31, -327-B 2-PCV-1-30 2-FCO-30-22, -109 2-PCV-1-5
	Temperature switches	0-TS-65-16, -36

*The TVA unique identifier (i.e., 1-FCV-62-69) is standardized so that the first numeral represents the affected unit, the letter set designates the type or device, the first numerical group represents the system the device is in, and the second numerical group is the device's unique number in the system (if no numeral is listed before the letter group, the device is present in both units 1 and 2 systems).

**All other equipment previously reported on under this NCR was found to be qualified, in a mild environment, or did not represent a safety concern after failure.

NCR	Item Type	Unique Identifier
	Motors	Containment spray (CCS) pump rooms 1A-A, 1B-B, 2A-A, and 2B-B fan motors Residual heat removal (RHR) pump rooms 1A-A, 1B-B, 2A-A, and 2B-B cooler fan motors Safety injection system (SIS) pump room cooler fans 1A-A, 1B-B, 2A-A, and 2B-B motors 1-MTR-30-190, -191 2-MT-30-184, -185 Common - CCS booster and spent fuel pit cooler fan motors A-A and B-B - El. 737' penetration room coolers 1A-A and 1B-B fan motors Common - Emergency gas treatment system (EGTS) room cooler fans A-A and B-B motors Pipe chase C/R fans 1A-A, 1B-B, 2A-A, and 2B-B motors Centrifugal charging pump room coolers 1A-A, 1B-B, 2A-A, and 2B-B fan motors
WBNNEB8118	Limit switches on valves	FCV-62-69, -70
WBNNEB8123	Thermal elements	TE-68-1, -18, -24, -41, -43, -60, -65, -83
WBNNEB8127	Valves	FSV-62-76
WBNNEB8128	Valves	FSV-62-77 FSV-81-12 FSV-63-23, -38, -41, -42, -64, -84 FSV-77-10, -17, -19, -20 FSV-68-305 2-FSV-61-69, -110 2-FSV-68-301
WBNNEB8130*	Transmitters	PT-68-68, -69 LT-68-320, -335, -339
WBNNEB8132	Transmitters	PT-1-9A&B, -20A&B, -12, -23

*Transmitters LT-3-38, -55, -93, -94, -106, and -107 which were initially identified by this NCR are now being reported on under NCR WBN NEB 3411.

NCR	Item Type	Unique Identifier
WBNNEB8135*	Limit switches on valve	FCV-87-7, -8 FCV-62-76
	Transmitters	PT-68-322
WBNNEB8410	Incore thermocouples	WTE-94-1 through -65
WBNNEB8411	Transmitters	LT-3-38, -42, -51, -55, -56, -93, -94, -106, -107, -111
WBNNEB8415	Transmitters	PDT-30-42 through -45
WBNEEB8113	Transmitters	PDT-65-80, -82, -90, -97
WBNEEB8114	Pressure modifiers	PM-3-122, -132
WBNEEB8115	Pressure switches	PS-3-139A, -139B, -139D, -144A, -144B, -144D, -140A, -150A
WBNEEB8116	Electropneumatic converters	PDM-65-82-B, -80-A
WBNEEB8117	Switches	PDIS-1-17, -18 0-FS-65-25A/B, B/A; -31A/B, B/A; -55A/B, B/A; -44A/B, B/A
WBNEEB8120	Transmitters	FT-3-147A, -147B, -155A, -155B, -163A, -163B, -170A, -170B
WBNEEB8121	Positioners on valves	LCV-3-148, -156, -164, -171, -172, -173
WBNEEB8122	Hydrogen monitors	Loops 200-A and 210B on the sampling and water quality system (2 per unit)
WBNEEB8123	Valves	FSV-67-344, -346, -348, -352, -342, -354, -168, -170, -176, -182, -184, -186, -188, -190, -356 LSV-3-148, -156, -164, -171, -172, -173 1-FSV-67-162, -164, -213, -215 2-FSV-67-219, -217
WBNEEB8124	Valves	FSV-77-128
WBNEEB8125	Valves	LSV-3-148A, -156A, -164A, -171A
WBNEEB8126	Valves	FSV-90-107-A, -113-A, -117-A, -111-A

*Transmitters previously identified by this NCR are now being reported on under NCR WBN NEB 8411 with the exception of transmitters 1,2-PT-68-322.

NCR	Item Type	Unique Identifier
WBNEEB8128	Valves	1-FSV-32-80B-A, -102B-B, -110B-A 2-FSV-32-81B-A, -103B-B, -111B-B
WBNEEB8130	Limit switches	2-ZS-30-8-B, -15-B, -20-A
	Limit switches on components	2-FCV-30-40-A 2-ZS-30-52-A, -56-A ZS-30-58-B
WBNEEB8132	Valves	FSV-1-7, -14, -25, -32, -147, -148, -149, -150 LSV-3-174, -175
WBNEEB8133*	Valves	0-FSV-12-179, -82
WBNEEB8134**	Limit switches on valves	FCV-1-148, -147, -150, -149
WBNEEB8135	Valves	FSV-1-181-A, -182-B, -183-A, -184-B FSV-90-108-B, -109-B, -110B, -114B, -115B, -116-B FSV-77-127-B FSV-31-306-A 2-FSV-31-327-B
WBNEEB8138	Valves	FSV-70-85
WBNEEB8139	Limit switches on valves	FCV-70-85
WBNEEB8140	Switches	TS-12-91A through -99A TS-12-91B through -99B
WBNEEB8141	Transmitters	FT-3-142
WBNEEB8142	Switches	PS-3-138A, -138B, -148, -156, -164, -171 0-PS-70-209, -210

*On valves 0-FSV-31-116, -146, -173, and -198 which were previously included under this NCR, TVA has determined that operability is not required during or after a design basis accident (NUREG-0588, category C). As such, TVA will discontinue reporting on these items as 10 CFR 50.55(e) no longer applies.

**For limit switches on valves FCV-1-14, -32, -7, -25 which were previously included under this NCR, TVA has determined that failure of these switches is acceptable in any mode and for any accident (NUREG-0588 cateogry C). As such, TVA will discontinue reporting on these items as 10 CFR 50.55(e) no longer applies.

NCR	Item Type	Unique Identifier
WBNEEB8143*	Switches	FS-30-196, -197
WBNEEB8144	Switches	PS-3-140B, -150B, -160A, -160B, -165A, -165B
WBNEEB8146	Valves	2-FSV-67-336, -338
WBNEEB8147	Valves	FSV-43-3, -12, -23, -54 FSV-61-97, -122, -192, -194 FSV-62-69, -70, -72, -73, -74 FSV-63-71 FSV-68-308 FSV-77-9, -16, -18 FSV-87-7, -8
WBNEEB8148	Switches	TS-1-17A, -17B, -18A, -18B
WBNEEB8150**		
WBNEEB8152	Switches	FS-30-194, -195
WBNEEB8160	Transmitters	LT-3-172-A, -173-B, -174-B, -175-A
WBNEEB8165	Switches	SW-46-DC SW-46-AC
WBNEEB8166	Motor starters	STR-46-56A
WBNEEB8167	Limit switches	FSV-31-306-A, -308-A, -329-B
WBNEEB8202	Both limit switches on each valve	FCV-77-9, -16, -18 FCV-68-308 FCV-31-306, -308, -327, -329 FCV-62-72, -73, -74 FCV-63-71 FCV-87-7, -8
	Spare limit switches	ZS-00-1, -03 through -12
WBNEEB8203	Switches	ZS-1-181-A, -182-B, -183-A, -184-B

*For switches FS-30-186, -187, -201, -202, 1-FS-30-192, -193, 2-FS-30-184, -185, and 0-FS-30-192, -193 which were previously included under this NCR, TVA has determined that these components are not in a harsh environment and therefore requirements of NUREG-0588 do not apply. As such, TVA will discontinue reporting on these items.

**All items identified in this NCR are already being reported on under NCR WBN EEB 8140. TVA will discontinue reporting on this NCR.

NCR	Item Type	Unique Identifier
WBNEEB8204*	Limit switches	FCV-43-2-B, -11-B, -22-B, -34-B, -75-B, -3-A, -12-A, -23-A, -35-A, -77-A
WBNEEB8208**		
WBNEEB8210	Positioners on valves	LCV-3-174, -175
WBNEEB8211	Limit switches on valves	FCV-62-72-A, -73-A, -74-A
WBNEEB8302	Switches	HS-1-15B, -16B, -17B, -18B
WBNEEB8304	Transmitters	FT-70-159A, -165A 0-PT-70-24A 2-PT-70-17A
WBNEEB8305	Switches	PS-3-121A, -121B, -121D
WBNEEB8307	Switches	TS-30-194, -195, -196, -197
WBNEEB8308	Transmitters	TM-70-161A 0-TM-70-162A
WBNEEB8311	Switches	HS-62-61B, -295B, -296B, -297B, -298B, -332B-A, -333B-A
WBNEEB8315	Switches	0-TS-30-192, -193
WBNEEB8403	Valves	LSV-3-174, -175
WBNEEB8413	Valves	FSV-43-11-B, -22-B, -34-B -35-B, -55-A, -56D-B, -58-A, -59D-B, -61-A, -63D-A, -64-A, -75-B, -77-A, -201-A, -202-A, -207-B, -208-B
WBNEEB8417	Limit switches on valves	FCV-12-79 FCV-31-305-B, -309-B, -326-A, -330-A FCV-90-107-A, -111-A, -113-A, -117-A 2-FCV-63-72, -73

*TVA has determined that the switches on valves FCV-43-201-A, -202-A, -207-B, -208-B which were previously included under this NCR, are NUREG-0588, category C, devices. As such, 10 CFR 50.55(e) no longer applies, and TVA will discontinue to report on these items.

**Equipiment identified by this NCR were separately reported on under NCR WBN EEB 8104. TVA is removing the NCR from this report.

TABLE 2

NONCONFORMANCES FOR WHICH ALL ITEMS WERE FOUND TO BE IN A MILD ENVIRONMENT; QUALIFIED TO NUREG-0588; OR ARE CONSIDERED NUREG-0588, APPENDIX E, CATEGORY C, DEVICES

NCR	Comments
WBNMEB8107	Equipment is in a mild environment
WBNMEB8108	Qualification documentation is available
WBNMEB8109	Equipment is in a mild environment
WBNNEB8119	Qualification documentation is available
WBNNEB8124	Valves are either category C or have sufficient qualification documentation
WBNNEB8312	Equipment is in a mild environment
WBNEEB8112	Equipment is category C
WBNEEB8118	Equipment is category C
WBNEEB8119	Equipment is qualified to current environmental conditions
WBNEEB8127	Equipment is qualified to current environmental conditions
WBNEEB8129	Equipment is category C
WBNEEB8131	Equipment is category C
WBNEEB8136	Equipment is qualified to current environmental conditions
WBNEEB8137	Equipment is in a mild environment
WBNEEB8145	Equipment is category C
WBNEEB8149	Equipment is category C
WBNEEB8151	Equipment is in a mild environment
WBNEEB8153	Qualification documentation is available
WBNEEB8154	Equipment is in a mild environment
WBNEEB8156	Equipment is category C
WBNEEB8157	Equipment is qualified to current environmental conditions
WBNEEB8158	Equipment is qualified to current environmental conditions
WBNEEB8159	Equipment is category C
WBNEEB8161	Equipment is in a mild environment
WBNEEB8162	Equipment is in a mild enironment
WBNEEB8163	Equipment is category C
WBNEEB8164	Equipment is category C
WBNEEB8303	Equipment is qualified
WBNEEB8306	Equipment is category C

TABLE 3

TVA has reviewed the available qualification documentation for the equipment identified in the nonconformance reports (NCRs) listed below and had determined that the devices could not be qualified in their originally intended locations. As such, the equipment has been or will be relocated. The implementing engineering change notices (ECNs) and the status of the work is given beside each NCR.

NCR	Unit 1 ECN	Unit 1 Status	Unit 2 ECN	Unit 2 Status
WBNEEB8113	3595 & 4266	Work complete	3595 & 4267	Ongoing
WBNEEB8116	3117	Work complete	3177	Ongoing
WBNEEB8122	4026	Work complete	4695	Ongoing
WBNEEB8160	3443	Work complete	3443	Ongoing
WBNEEB8304	4268	Work scheduled to be complete by 3/1/85	4269	Ongoing
WBNEEB8308	4270	Work scheduled to be complete by 3/1/85	4271	Ongoing
WBNNEB8411	5066	Work scheduled to be complete by 3/1/85	5067	Ongoing

TVA has reviewed the available qualification documentation for the devices identified in the following NCRs and has determined that these devices are not qualified for use in their intended environment. TVA intends to replace or already has replaced this equipment with ones that are environmentally qualified. The implementating ECNs and the current status of the replacement activity is given beside each NCR.

NCR	Unit 1 ECN	Unit 1 Status	Unit 2 ECN	Unit 2 Status
WBNNEB8118	3993	Work complete	3994	Ongoing
WBNNEB8127	4000	Work complete	4001	Ongoing
WBNNEB8132	4362	Work complete	4363	Ongoing
WBNEEB8114	4335	Work complete	NYD*	Ongoing
WBNEEB8117	3596 & 2458	Work complete	3604	Ongoing
WBNEEB8123	3593	Work complete	3593	Ongoing
WBNEEB8124	3592	Work complete	3592	Ongoing
WBNEEB8125	3593	Work complete	3593	Ongoing
WBNEEB8126	3593	Work complete	3593	Ongoing
WBNEEB8128	3592	Work complete	3592	Ongoing
WBNEEB8130	3597	Work complete	3599	Ongoing
WBNEEB8132	3592	Work complete	3592	Ongoing
WBNEEB8133	3593	Work complete	3593	Ongoing
WBNEEB8134	3599	Work complete	3599	Ongoing
WBNEEB8135	3592	Work complete	3592	Ongoing
WBNEEB8138	3592	Work complete	3592	Ongoing
WBNEEB8143	3602	Work complete	3800	Ongoing
WBNEEB8144	3600/4354	Work complete	3600/4354	Ongoing

*Not yet designated (NYD)

NCR	Unit 1 ECN	Unit 1 Status	Unit 2 ECN	Unit 2 Status
WBNEEB8146	NA	Work complete	3592	Ongoing
WBNEEB8152	3602	Work complete	3800	Ongoing
WBNEEB8165	3354	Work complete	3354	Ongoing
WBNEEB8166	3354	Work complete	3354	Ongoing
WBNEEB8167	3599	Work complete	3599	Ongoing
WBNEEB8202	NA	Work complete	NA	Ongoing
WBNEEB8203	3371	Work complete	3371	Ongoing
WBNEEB8204	4139	Work complete	4140	Ongoing
WBNEEB8208	4160	Work complete	4161	Ongoing
WBNEEB8211	3353	Work complete	3562	Ongoing
WBNEEB8307	4063	Work complete	4063	Ongoing
WBNEEB8413	4943	Work complete	4944	Ongoing

The following NCRs represent work that is in progress for unit 1. The scheduled completion date is given with each NCR.

NCR	Unit 1 ECN	Scheduled Completion	Unit 2 ECN	Unit 2 Status
WBNMEB8115	4212/4125/4529 4909/4967/5122	3/1/85	4126/4213 4214/4968	Ongoing
WBNNEB8123	5215	3/1/85	NYD	Ongoing
WBNNEB8128	5122	3/1/85	5123	Ongoing
WBNNEB8130	NA	3/1/85	NA	Ongoing
WBNEEB8115	3601	3/1/85	3601	Ongoing
WBNEEB8120	3597	3/1/85	3597	Ongoing
WBNEEB8139	3598	3/1/85	3598	Ongoing
WBNEEB8141	3597	3/1/85	3597	Ongoing
WBNEEB8142	3601	3/1/85	3601	Ongoing
WBNEEB8147	4441	3/1/85	4441	Ongoing
WBNEEB8305	3951	3/1/85	3952	Ongoing
WBNEEB8315	4654	3/1/85	4654	Ongoing
WBNEEB8403	4602	3/1/85	4603	Ongoing
WBNEEB8417	3598	3/1/85	3598	Ongoing

For the Masoneilan positioners in NCRs WB NEEB 8121 and WBN EEB 8210, TVA is still in the process of having these devices type tested. Initial testing of the positioners to accident conditions (done without preaging) was successfully completed and full type testing is expected to be complete by March 1, 1985. TVA will provide additional information in our next report.

NCR WBN EEB 8148 R1 identifies Fenwal model 17323-0 temperatuare switches which did not have adequate documentation to confirm their environmental qualification. These switches have been type tested and have been found to be acceptable once the taped splice connections of the switches have been replaced with a screw-head bolt, washer and nut, and then covered with type WCSF-N Raychem heat-shrink tubing. TVA has completed these modifications for the unit 1 devices.

The limit switches identified in NCR WBN NEB 8135 were found to be unqualified when submerged. As this equipment was located inside containment and below the post-LOCA flood level, TVA superseded the seal-in function of these switches by use of relay logic. These changes were implemented through ECN 3553 for unit 1 and are being implemented through ECN 3562 for unit 2. The limit switches no longer have a safety function. Transmitters 1,2-PT-68-322 were found to be unqualified to submergence, and they were relocated to an area above the post-LOCA flood level.

Westinghouse is in the process of providing the necessary documentation for the devices listed in NCR WBN NEB 8410. For those devices that cannot be qualified, replacements will be installed. Also, Westinghouse was unable to qualify the reference junction box and a qualified replacement is being installed for unit 1 per ECN 5319. This installation will be complete by March 1, 1985. TVA will provide additional information on this item in our next report.

NCR WBN NEB 8415 identifies eight transmitters provided by Westinghouse which cannot support the ± 4-percent accuracy requirement committed to by TVA in the Watts Bar FSAR (Table 7.5-1). TVA is in the process of investigating this deficiency and will provide additional information in our next report.

The temperature switches identified in NCR WBN EEB 8140 are used to detect a break in the auxiliary boiler steamlines by monitoring surrounding ambient temperature and initiating isolation of the high temperature set point. Due to a slow time response, these switches did not detect rapid temperature changes and isolate the steamlines as fast as required. The unit 1 switches have now been replaced with qualified ones and the unit 1 steamline isolation valve controls have been modified to speed valve closure time to five seconds or less. Unit 2 work is still in progress (see ECN 3594 for unit 1 and ECN 3899 for unit 2).

The switches identified in NCRs WBN EEB 8302 and WBN EEB 8311 serve as local control stations. The unit 1 switches have been disconnected through ECNs 4186 and 4420. The unit 2 work is ongoing and is being accomplished through ECNs 4187 and 4421.

The limit switches identified in NCR WBN NEB 8135 were found to be unqualified when submerged. As this equipment was located inside containment and below the post-LOCA flood level, TVA superseded the seal-in function of these switches by use of relay logic. These changes were implemented through ECN 3553 for unit 1 and are being implemented through ECN 3562 for unit 2. The limit switches no longer have a safety function. Transmitters 1,2-PT-68-322 were found to be unqualified to submergence, and they were relocated to an area above the post-LOCA flood level.

Westinghouse is in the process of providing the necessary documentation for the devices listed in NCR WBN NEB 8410. For those devices that cannot be qualified, replacements will be installed. Also, Westinghouse was unable to qualify the reference junction box and a qualified replacement is being installed for unit 1 per ECN 5319. This installation will be complete by March 1, 1985. TVA will provide additional information on this item in our next report.

NCR WBN NEB 8415 identifies eight transmitters provided by Westinghouse which cannot support the ± 4-percent accuracy requirement committed to by TVA in the Watts Bar FSAR (Table 7.5-1). TVA is in the process of investigating this deficiency and will provide additional information in our next report.

The temperature switches identiifed in NCR WBN EEB 8140 are used to detect a break in the auxiliary boiler steamlines by monitoring surrounding ambient temperature and initiating isolation of the high temperature set point. Due to a slow time response, these switches did not detect rapid temperature changes and isolate the steamlines as fast as required. The unit 1 switches have now been replaced with qualified ones and the unit 1 steamline isolation valve controls have been modified to speed valve closure time to five seconds or less. Unit 2 work is still in progress (see ECN 3594 for unit 1 and ECN 3899 for unit 2).

The switches identified in NCRs WBN EEB 8302 and WBN EEB 8311 serve as local control stations. The unit 1 switches have been disconnected through ECNs 4186 and 4420. The unit 2 work is ongoing and is being accomplished through ECNs 4187 and 4421.