



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

JUL 14 1991

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

Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - AMERICAN SOCIETY OF MECHANICAL
ENGINEERS (ASME) SECTION III REQUIREMENTS FOR WELDING ACTIVITIES

- References:
1. TVA submittal, dated October 13, 1988, responding to the NRC position on welding activities at WBN documented in a letter dated July 2, 1987.
 2. TVA submittal, dated May 10, 1991, supplementing TVA's letter dated October 13, 1988, identifying additional examples of welding activities performed by a nonstamp holder and changes to the original submittal.

The enclosed information is being provided to revise TVA's earlier submittal (Reference 1) documenting the results of the review conducted of ASME repair and modification activities involving welding completed after closure of the N-5 data reports for the system or by a nonstamp holder. Enclosure 1 describes the specific changes including justifications. Enclosure 2 incorporates the subject changes to update Enclosure 3 of the October 13, 1988, submittal. The changes described in TVA's submittal dated May 10, 1991, (Reference 2) have also been incorporated.

This submittal contains no new commitments.

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If you should have any questions, contact P. L. Pace at (615)-365-1824.

Sincerely,



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Vice President
New Plant Completion
Watts Bar Nuclear Plant

Enclosures

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ENCLOSURE 1
WATTS BAR NUCLEAR PLANT (WBN)
REVISIONS TO THE OCTOBER 13, 1988, SUBMITTAL

The following maintenance requests (MRs) and work plans (WPs) have been deleted from Enclosure 3 of the Reference 1 submittal, Groups 3, 6, 7, and Enclosure 1 of the Reference 2 submittal:

<u>GROUP NO.</u>	<u>DOCUMENT</u>	<u>REASON FOR REMOVAL</u>
3	MR A-400810	MR listed in 1991 memo, listed as a deletion because actual work was completed by WP 4459.
3	MR A-408919	No welding was performed by this document.
3	WP 4459	WP contains instructions for re-tubing Component Cooling System Heat Exchanger O-HTX-70-1C. Hydrostatic testing of the replacement tubing (Section XI) is not required. Additional welding activities listed in the WP that required hydrostatic testing are listed on MR A-408902 (Group 3).
3	WP 4863	Non-ASME piping.
6	MR A-408928	Non-ASME piping.
6	MR A-477794	Work performed by WP E5798-1.
6	MR A-484127	Welds reworked by WO 940527100.
6	MR A-500591	Reworked by WO 920168900
6	MR A-507177	No welding, Non-ASME threaded caps.
6	MR A-535576	Welds deleted by Revision 13 to the weld map.
6	MR A-570530	Weld replaced, reference WP M5712-1.
6	WP 2941	Included in the original N-5 code data report.
6	WP 3548	Non-ASME piping.
6	WP 4148	Included in the original N-5 code data report.
6	WP 4301	Non-ASME piping.
6	WP 4408	No welding related activities.
6	WP 4479	Non-ASME piping.

<u>GROUP NO.</u>	<u>DOCUMENT</u>	<u>REASON FOR REMOVAL</u>
6	WP 4788	Non-ASME piping.
6	WP 5190	Non-ASME piping.
6	WP E6429-1	Work completed by E6429-12.
6	WP N6547-1	Unit 2 welds.
7	MR A-006038	Work completed by WO 930579300 and WO 921070900.
7	MR A-222072	Fabricated retainer ring, non-pressure boundary.
7	MR A-400253	Work completed by WO 930428800.
7	MR A-400964	Work completed by WO 921070900.
7	MR A-408989	Non-pressure boundary component, baffle plates.
7	MR A-485972	No welding related activities.
7	MR A-538209	Valve being reworked by WR C182892.
7	MR A-567874	Welding activities reviewed for pressure testing requirements per Group 7 justification. Note: this weld was a liner weld which is not included in the N5 process.
7	MR A-573352	Work completed by WO 921078400.
7	MR A-573377	Work completed by WP M5805-1.
7	MR A-573378	Weld has been deleted.
7	MR A-573385	Weld has been deleted.
7	MR A-574301	Welding activities reviewed for pressure testing requirements per Group 7 justification. Note: this weld was a liner weld which is not included in the N5 process.
7	MR A-574303	Welding activities reviewed for pressure testing requirements per Group 7 justification. Note: this weld was a liner weld which is not included in the N5 process.
7	MR A-574441	Work completed by WO 921116000.

<u>GROUP NO.</u>	<u>DOCUMENT</u>	<u>REASON FOR REMOVAL</u>
7	MR A-574442	Welding activities reviewed for pressure testing requirements per Group 7 justification. Note: this weld was a liner weld which is not included in the N5 process.
7	MR A-604803	Written to cut pipe.
7	WP 3590	Included in the original N5 code data report.
7	WP 3592	Included in the original N5 code data report.
7	WP 8132	No welding related activities.

The following WPs, MRs, and notice of indications (NOIs) have been added to Enclosure 3 of Reference 1, Groups 3, 6, or 7:

<u>GROUP NO.</u>	<u>DOCUMENT</u>	<u>REASON FOR ADDITION</u>
6	WP 2090	1991 Submittal to NRC, Enclosure 1.
4	WP 9716	1991 Submittal to NRC, Enclosure 1.
6	MR A-481297	1991 Submittal to NRC, Enclosure 1.
6	MR A-410419	1991 Submittal to NRC, Enclosure 1.
7	NOIs 66, 69, 71 187, 194, 195,196	1991 Submittal to NRC, Enclosure 1

The following documents have been deleted from Enclosure 1 of TVA's 1991 submittal.

<u>DOCUMENT</u>	<u>REASON FOR DELETION</u>
WP 2915	Upper Head Injection System was deleted.
WP 4139	Upper Head Injection System was deleted.
WP 8099	Upper Head Injection System was deleted.
WP 8249	Upper Head Injection System was deleted.
WP 2144	Work activities were controlled by MR A-407144 and MR A-481297.
WP 2498	Cleanliness inspection, (swipe test).
WP 2523	Cleanliness inspection, (swipe test).

DOCUMENT REASON FOR DELETION

WP 2716 Cleanliness inspection, (swipe test).
MR A-224938 Section XI activity associated with vendor stamped valve
2-FCV-67-22.
MR A-226555 Section XI activity associated with repair of a vendor weld.

The following documents have been relocated per Enclosure 2 of TVA's submittal dated May 10, 1991, (Reference 2):

<u>DOCUMENT</u>	<u>FROM GROUP NO.</u>	<u>TO GROUP NO.</u>
WP 4000	1	6
WP 4047	1	6
WP 4019	1	5
MR A-537002	2	6
MR A-537003	2	6
MR A-598650	2	6
WP E6697-1	6	1
MR A-272465	5	6

These changes result in a modification to the total WPs/MRs listed.

Group 1 WPs from 76 to 74.
Group 2 MRs from 202 to 199.
Group 3 WPs from 10 to 8, and MRs from 2 to 1.
Group 4 "and 1 workplan" added to the first sentence of the
 paragraph;
Group 5 WPs from 3 to 4, and MRs from 44 to 43.
Group 6 WPs from 49 to 41, and MRs from 15 to 14.
Group 7 WPs from 15 to 12, and MRs from 30 to 13.

ENCLOSURE 2
 WATTS BAR NUCLEAR PLANT (WBN)
 REVISIONS TO THE OCTOBER 13, 1988, SUBMITTAL (REFERENCE 1)
 (Enclosure 3)

The TVA review examined repair, replacement, and modification work activities that had been performed on ASME code systems since the completion of the system N-5 data report forms. This review originally identified 215 workplans and 313 maintenance requests that represent exceptions to the Construction Code of Record. This review of activities was initially documented on ASME review sheets developed specifically for this task. The activities were sorted into eight groups by the type exception and reviewed against the requirements of the Construction Code of Record. Subsequent reviews have refined the eight groups as detailed below along with TVA's justification for exception to the Code of Record or corrective action for each group:

1. Includes the 74 workplans completed in accordance with ASME Section XI by the WBN Construction Organization that possesses the TVA corporate ASME NA/NPT stamp (stamp holder). These workplans met the ASME Section III technical and programmatic requirements except for documentation.

WP	2546	2560	2581	2589	2592	2428R1	2838
	2882	2886	2937	2966	2985	2986RO,R1	3378
	3003	3074	3112	3120	3224	3236	3379
	3263	3271	3365RO,R1	3429RO,R1	3466RO,R1	3539	4170
	3624	3631	3724	3741	3749RO,R1	3816	3829
	3848	3857	3866	3867	3919	3930	4485
	E6697-1	4007	4013	4797	4691	4064	4991
	4074	4116	4138	4188R1	4192	4214	4298
	4309	4317	4348	4371	4374	4376	4389
	4397	4437	4460	4462	4481	4516	

Justification: The applicable ASME Section III technical requirements for the work were met, and as described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III with respect to quality and safety.

2. Includes the 61 workplans and 199 maintenance requests performed in accordance with ASME Section XI by the WBN Construction (stamp holder), Maintenance, and Modifications Organizations (nonstamp holders) that met the technical requirements of ASME Section III.

WP	1956	2080	2089	2256	2490RO,R1	3089
	2513	2728	2789	2792	2490R2	3119
	3182	3220	3569	4351	2119	4553
	4574	4720	4732	5014	5114	5213
	8005	8068	8072	8077	8080	8103
	8126	8133	8167	E5828-1	E5908-3	E6184-1
	2738	2759	3127	3331	8201	8078
	W10758-1	E6259-2	E6259-3	E6381-1	E6424-1	W10297-1
	E-6429-5	E-5841-1	M5619-1	3594	8120	W10771-1
	1554RO	1554R1	1403	3727	4706	
	2194					

MR	A-003023	A-074395	A-076382	A-076443	A-077959	A-078214
	A-186461	A-187066	A-221403	A-224242	A-224359	A-224840
	A-226089	A-227396	A-228722	A-230724	A-275574	A-275602
	A-280230	A-400269	A-402232	A-403236	A-403983	A-405723
	A-405744	A-406051	A-406332	A-406982	A-406985	A-407076
	A-407077	A-407120	A-407178	A-407183	A-407188	A-407194
	A-407273	A-407657	A-408294	A-408558	A-408874	A-408940
	A-408960	A-408965	A-408990	A-409017	A-409154	A-409320
	A-409614	A-409628	A-411078	A-412403	A-412681	A-412741
	A-414599	A-415662	A-415821	A-416566	A-477835	A-478075
	A-479418	A-479516	A-480017	A-480105	A-480155	A-480171
	A-480172	A-480174	A-481135	A-481398	A-481498	A-481887
	A-482460	A-482835	A-483477	A-483701	A-484130	A-484324
	A-485744	A-488050	A-489575	A-491709	A-492293	A-492645
	A-493241	A-493903	A-494282	A-494638	A-494709	A-494725
	A-494726	A-503516	A-504053	A-504983	A-505318	A-508558
	A-509620	A-509973	A-510017	A-511116	A-513865	A-515004
	A-515148	A-520268	A-522355	A-522667	A-523616	A-523717
	A-526515	A-527378	A-528446	A-528940	A-529234	A-529259
	A-533087	A-533334	A-533886	A-533892	A-535846	A-535847
	A-536224	A-574313	A-574312	A-537101	A-537109	A-537110
	A-537152	A-538409	A-539146	A-571056	A-572221	A-572248
	A-572255	A-572713	A-572714	A-572740	A-572746	A-572748
	A-572758	A-572760	A-572761	A-572762	A-572763	A-572767
	A-572768	A-572773	A-572774	A-572777	A-572778	A-572779
	A-572780	A-572781	A-572783	A-572784	A-572785	A-572787
	A-573247	A-573263	A-573269	A-573296	A-573345	A-573351
	A-573355	A-573451	A-574302	A-574426	A-577086	A-578090
	A-580359	A-580735	A-582375	A-583263	A-583810	A-584933
	A-585306	A-595811	A-597113	A-572769	A-601971	A-602124
	A-602733	A-572715	A-572765	A-573250	A-572770	A-572771
	A-572772	A-572782	A-572788	A-572789	A-572724	A-572725
	A-572727	A-572750	A-573344	A-573384	A-573388	A-574311
	A-572756					

Justification: The applicable ASME Section III technical requirements for the work were met including the pressure test performed to the ASME Section III criteria for those activities requiring one. As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI, with respect to quality and safety, are comparable to ASME Section III.

- Includes the 8 workplans and 1 maintenance request performed in accordance with ASME Section XI by the WBN Construction, Modifications, and Maintenance Organizations that met the applicable ASME Section III technical requirements except for the pressure test.

WP	3437	3654	5186	5210	E4845-1
	N6477-1	2403	2597		

MR A-408902

Justification: For these activities, the pressure test was performed to the ASME Section XI criteria of 1.1 times the system design pressure. The components included in these pressure tests were in the Auxiliary Feedwater, Essential Raw Cooling Water, Component Cooling Water, and Crud Sampling (water sampling) Systems. The maximum difference between the ASME Section III test pressure and the ASME Section XI test pressure is 24 psi, based on the maximum design pressure of 160 psi for the affected portions of these systems. TVA will retest these items to 1.25 times the design pressure to meet the ASME Section III technical requirements. As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III requirements.

4. Includes 1 workplan and 20 maintenance requests performed in accordance with ASME Section XI by a nonstamp holder (WBN Modifications and Maintenance Organizations), that met the applicable ASME Section III technical and programmatic requirements except for the provision for the authorized nuclear inspector (ANI) review of the work document as required by ASME Section III NCA-5261.

WP 9716

MR	A-274819	A-400955	A-404602	A-404647	A-409172	A-477762
	A-484113	A-484114	A-484115	A-485986	A-490616	A-495093
	A-520332	A-525070	A-525327	A-526555	A-585495	A-585770
	A-573450	A-573452				

Justification: As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III requirements. These maintenance requests have been reviewed by the ANI.

5. Includes the 4 workplans and 43 maintenance requests performed in accordance with ASME Section XI by a nonstamp holder (WBN Modifications and Maintenance Organizations), involving the replacement of pressure boundary components or parts by mechanical means (nonwelding-related).

WP	4352	2900	3094	4019		
MR	A-037455	A-072173	A-074492	A-222515	A-226219	A-228760
	A-591735	A-275945	A-400485	A-402353	A-404153	A-404246
	A-405144	A-406959	A-407109	A-407110	A-407115	A-407137
	A-408868	A-408871	A-409157	A-414193	A-414595	A-414750
	A-480858	A-480893	A-481229	A-481488	A-485867	A-488830
	A-505400	A-513881	A-520163	A-526514	A-527210	A-529394
	A-533342	A-534124	A-534350	A-535189	A-536228	A-539132
	A-571227					

Justification: As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III requirements. In accordance with NX-6114.2 of ASME Section III, replacement of external pressure boundary items requires that a pressure test be performed either by the installer or the part manufacturer. According to NCA-5261, the ANI shall have the opportunity to be assured that material used complies with the requirements of ASME Section III.

The following actions have been taken to comply with the applicable ASME Section III programmatic and technical requirements for these workplans and maintenance requests: (1) The procurement document for the replaced item has been reviewed for a manufacturer pressure test. If a pressure test was not performed (MR A-529394), an appropriate pressure test according to ASME Section III will be performed. (2) The workplans and maintenance requests have been made available to the ANI and authorized nuclear in-service inspector (ANII) as applicable for review. Any identified discrepancies will be resolved before Unit 1 fuel load.

6. Includes the 41 workplans and 14 maintenance requests performed to ASME Section XI requirements by the WBN Construction, Modifications, and Maintenance Organizations that met the applicable ASME Section III technical requirements with the exception of the pressure test requirements. The pressure test requirements were not met on these workplans and maintenance requests because either (1) the testing was placed on hold pending resolution of this review, (2) the ASME Section XI pressure text exemption for 1-inch diameter and smaller pipe diameter was taken, (3) Code Case N-416 was used for the deferral of the pressure test, or (4) a pressure test was performed to ASME Section XI requirements, but with a differential pressure greater than 24 psi described in group 3 above.

WP	2924	4047	5312	E5753-2	E6429-3	3819
	2090	4886	4136	E6607-2**	N6218-1	
	5320	E3614-2	4936	E5798-1	E5846-3	
	E5974-1	E6251-1	E6259-1	E6284-1	E5944-1	
	E6476-1	E6591-1	E6682-1	E6838-1	M5590-1	
	4000	N6907-1	E5944-2	E6591-2	3531	
	1623	4871	E6103-2	E6792-2	4355	
	2843	5081*	E6272-3	E6792-3	4879	
MR	A-407144	A-410419	A-414446	A-481297	A-537003	A-598650
	A-272465	A-521219	A-534268	A-537002	A-535581	
	A-573243	A-573244	A-580747			

Justification: As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III requirements. TVA will pressure test these items to ASME Section III technical requirements.

* Non-welded pressure tubing to be tested by Work Order 94-04636-02.

** Non-welded pressure tubing to be tested per 0-030-PNEU-001

7. Includes the 12 workplans, 14 maintenance requests, and 7 notice of indications performed in accordance with ASME Section XI by the WBN Construction, Modifications, and Maintenance Organizations that involve defect removal from the base and weld metal.

WP	1756	2407	2729	3257	3476	3419
	3593	NW438P-1	N6276-1	8155	2876	
	3587					
MR	A-524516	A-074761	A-572764	A-575337	A-585775	A-519786
	A-573268	A-186870	A-477846	A-573387	A-222073	A-599092
	A-523623					
NOI	66	69	71	187	194	195
						196

Justification: As described in Enclosure 2 of Reference 1, the programmatic requirements of ASME Section XI are comparable to ASME Section III requirements. The only deviation from ASME Section III technical requirements was the pressure test requirement. The following actions will be taken to comply with the applicable ASME Section III technical requirements for these workplans and maintenance requests: Each workplan and maintenance request has been reviewed to the ASME Section III criteria for base and weld metal repair pressure testing. An appropriate ASME Section III pressure test will be performed for those workplans and maintenance requests which would require one.

8. Includes one workplan performed in accordance with ASME Section XI by the WBN Construction Organization that met the applicable ASME Section III technical requirements with the exception of the pressure test requirements.

WP 1649

Justification: The work performed on Workplan 1649 involved cutting the Essential Raw Cooling Water (ERCW) System to allow the placement of a mortar lining as outlined in the WBN Final Safety Analysis Report (FSAR), Section 9.2.1.4.

As described in Enclosure 2 of Reference 1, the programmatic requirements for ASME Section XI provides a level of quality assurance comparable to ASME Section III requirements. TVA provided the details of the additional testing for the ERCW mortar lined piping as a supplement to this letter on March 21, 1989.

TVA has reviewed the documentation for the welding-related work activities identified in Groups 1 through 8 that were performed in accordance with ASME Section XI after completion of the N-5 reports. TVA developed Site Standard Practice (SSP)-2.53, "ASME Section III N-5 Code Data Reports and Supplements," to describe the method for preparing and processing the necessary N-5 supplement reports.

As the work activities are evaluated to perform the compensatory actions described above, if it is determined that any additional hardships or unusual difficulties exist in order to comply with the specified dispositions in Groups 1 through 7, exceptions would be requested on a case-by-case basis as prescribed by 10 CFR 50.55a(a)(3). This review has been completed and necessary exemption requests have been sent to NRC. Exemption requests have been reviewed and accepted by NRC. Actual work activities and documentation will be completed before Unit 1 fuel load.