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FEB 21 1989

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	)	50-391

WATTS BAR NUCLEAR PLANT (WBN) - PHASE I REPORT

In accordance with TVA's welding review program, enclosed for your review is the WBN Phase I Weld Report. Phase I was conducted by TVA to ensure that the TVA program, design documents, policies, and procedures correctly reflect commitments to regulatory requirements. In addition to identifying commitments, it would also identify concerns or deficiencies in the welding program.

This review included welding and inspection activities associated with field fabrication and installations performed by TVA at WBN. It is a programmatic assessment of the TVA welding program as it applies to the welding and inspection activities at WBN. Included in this assessment were quality indicators, such as nonconformance reports, deviation reports, and employee concerns. The results, as described in the Phase I report, support the conclusion that the TVA welding program used at WBN is in compliance with commitments.

Although the Phase I Weld Report found the welding program in compliance with commitments, it provided recommendations for enhancing the existing program. The majority of these improvements have already been implemented.

Enclosure 1 lists the commitments found in the WBN Phase I Weld Report.

TVA is available at your earliest convenience should you believe additional discussion on this report is necessary. Please refer any specific questions to G. R. Ashley at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley, Manager
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Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

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ENCLOSURE 1

LIST OF COMMITMENTS

1. A1-1 Assess the applicable TVA employee concerns and quality problems with the TVA-performed, safety-related welds. Evaluate TVA's as-constructed plant weld status by conducting an examination of the plant welds, evaluating the results, and when deviations were determined to be unacceptable, analyzing and concurring with TVA's corrective action proposals for these deviations. Provide TVA with a statement of the compliance of the plant welds with applicable construction welding codes. These objectives will be addressed in the WP Phase II for WBN.

2. A1-2 One minor discrepancy was identified which has been corrected by issue of P.S.3.M.3.1 revision 3, Addendum 2, on March 3, 1986.

3. A1-3 Recommendations are made as a result of the Phase I work and will be reevaluated at the conclusion of Phase II.

4. A1-3A The standardized procedure system is being implemented by NC. These new procedures will be implemented by all construction and modifications activities under NC control.

5. A1-4 The General Construction Specification G-29 process specifications and the Division of Nuclear Power Procedure Manual DPM N73M2 are being reviewed by NE. These two sets of welding specifications will be combined into one set of NE master specifications for use throughout the welding program.

6. A1-5 The WBN site director has mandated that the two separate welding programs currently being implemented by the operations and construction organizations will be consolidated into one program. The site Welding Engineering Unit is responsible to review the pertinent site procedures and effect the changes necessary to implement the program consolidation.

7. A1-6 A general construction procedure has been issued by NC which establishes responsibilities at the sites to assess all welding activities for compliance with the procedures and specifications. The Welding Engineering Unit supervisor is responsible to schedule and perform the assessment of activities and to notify site construction and modifications management of the results. Management is made responsible to ensure that crafts are performing in accordance with the procedures and specifications and to provide educational and other corrective actions as necessary.

8. A1-7 NQAM, Part II, Section 6.1, does not address checks of contractor welder qualifications before work onsite. Site instructions will be revised when the NQAM procedure revision incorporating this requirement is issued.

9. A1-8 The structural welding requirements of Process Specification O.C.1.1 of DPM N73M2 were not included in implementing procedures until March 1986. The possible effect of this procedural deficiency on plant hardware will be addressed in the Welding Project Phase II efforts.

10. A1-9 WBN is in the process of preparing a new construction engineering procedure which will address all of the applicable general welding requirements.

11. A1-10 The WP assessment of the NE review, NC review, NO review, and the DOE/WEP review resulted in several programmatic recommendations. These welding-related recommendations are listed here and will be further evaluated during the Phase II work.

12. A1-10A WBN is in the process of adding the requirements for sequencing and peening of welds to WBN CEP-4.03.

13. A1-11 WP Phase II Specific, Special, and General plant examinations included the subject hardware. Phase II will establish that the hardware is suitable for service, or will be upon completion of committed corrective actions.

14. A2-1 A separate and independent programmatic review of welding activities was performed by the United States Department of Energy (DOE) as part of its Weld Evaluation Project (WEP) at Watts Bar Nuclear Plant Unit 1.

15. A2-2 The TVA WP Phase I activities for WBN were accomplished as planned in the Tennessee Valley Authority Welding Project Program Description which was submitted to NRC in January 1986. The specific review activities were conducted in accordance with the approved project procedures issued as part of the Welding Project - Project Manual.

16. A2-3 The specific objectives of the DOE/WEP were to: 1) Assess compliance of TVA's documented weld program to the requirements in the WBN FSAR and amendments through February 1, 1986. The results of Objectives 1 were provided to TVA in December 1986 in report number DOE/ID-10152, "Weld Program Review, Department of Energy Weld Evaluation Project, TVA Watts Bar Plant Unit 1." This report was submitted to NRC.

17. A2-5 The extension of the DOE/WEP conclusions to unit 2 and the extension of the timeframe under study from February 1, 1986 to November 30, 1987, is documented by reference 6.2.

18. A2-6 Adequate requirements were not provided by NE in the design output for welding ductwork for seismic purposes. This matter is discussed in detail in the Welding Project Employee Concern Evaluation Report WP-05-WBN and corrective action is being tracked by NCR WBN 7077 and Significant Condition Reports WBN MEB 8714, WBN MEB 8721, and WBN MEB 8722.

19. A2-6A Once identified, the welder qualification continuity problem was reported to NRC and documented and corrected through the quality assurance program. Action to prevent recurrence was effectively implemented.

20. A2-7 Office of Nuclear Power Directive 7.1 establishes a requirement that orientation training for new employees include their duties and responsibilities, orientation to work related regulations, procedures, and instructions, and their role in quality and the Nuclear Quality Assurance Program. This directive also makes NE, NC, NO managers, and site directors responsible to assess organizational and individual performance against established standards to identify needs for training.

21. A2-8 TVA has committed through its Nuclear Performance Plan to improve communication at all levels of the Office of Nuclear Power organizations.

22. A2-9 The requirements have been incorporated into WBN-QCP-4.13-FU&VC, attachment A, section 2.1.

23. A2-10 Construction Engineering Procedure CEP-4.09 references the process specification, and includes the specification requirements in the procedure body and attachments. WBN-QCP-4.09 requires inspection for compliance with CEP-4.09.

24. A2-11 The requirement is generally outlined by WBN-QCI-1.40 and specific implementation details are defined by WBN-CEP-1.40-5.

25. A2-12 The P.S. 1.C.1.2 requirements for tack and temporary attachment welding are incorporated into WBN-QCP-4.13-FU&VC, attachment A.

26. A2-13 WBN-QCP-2.04 lists N3G-881 as a reference at 3.1.4.

27. A2-14 The requirements of Specification G-63 are implemented through WBN-QCP-1.47.

28. A2-15 WBN-QCP-VTC has been superseded. The requirements of P.S. 1.C.1.2, section 7.0, are incorporated into WBN-QCP-4.13-FU&VC, attachment A, section 2.2.

29. A2-16 WBN-CEP-1.07 requires that all permanent QA material and engineering controlled items be issued from the construction warehouse. WBN-CEP-4.01 provides the details for issue of welding filler material.

30. A2-17 The NCM, revision 28, section 5.1, provides for welders helpers to withdraw welding material at Bellefonte only.

31. A2-18 The NCM, revision 28, section 5.1, defines the personnel authorized to sign the verification statement as the craft foreman, the assistant general construction superintendent, and weld test shop personnel. WBN-QCI-4.02 required a verification statement signed by the welder and by the foreman or supervisor. The site procedure did not, however, address the requirement of NCM, section 5.1, that the WEU establish a list of the personnel authorized to sign the verification statement. Welder performance qualification is now controlled by WBN-CEP-4.02. All of the NCM requirements are detailed in the procedure.

32. A2-19 Welder performance qualification is now controlled by WBN-CEP-4.02. This procedure requires at 6.4.2 that welders who are reclassified to foreman shall have their certifications rescinded.

33. A2-20 Welder and welding operator training is now controlled by WBN-CEP-1.11. WEU is responsible for the training of welders and welding machine operators. Provision of the necessary facilities and equipment is implicit in the requirement to conduct the training.

34. A2-21 WBN-QCP-4.03-1 is the applicable site procedure. The details necessary to implement P.S. O.C.1.1, section 6.0, are defined by WBN-QCP-4.03-1 and Quality Methods Instruction (QMI)-810.8.

35. A2-22 WBN-QCI-4.03 has been superseded by WBN-CEP-4.03. The NCM requirement is addressed by WBN-CEP-4.03, section 6.1.

36. A2-23 The requirement is defined in WBN-CEP-4.03 at section 6.1.

37. A2-24 The requirement is defined in WBN-CEP-4.03 at section 6.1.

38. A2-25 The welding inspectors are certified using the rules of SNT-TC-1A, 1980 Edition. This standard does not specify a maximum one-year period of inactivity. For unit 1, the limit is placed at one year by QMI-802.6. For unit 2, the limit is placed at 18 months by Quality Methods Procedure (QMP)-198.

39. A2-26 the requirements have been incorporated into WBN-QCP-4.13-FU&VC, attachment A, paragraph 2.3, except that the requirement of 8.9, arc strikes, has not been included. Arc strikes are addressed in WBN-QCP-4.13-FU&VM.

40. A2-27 The requirement to establish and maintain the specified preheat has been incorporated into WBN-QCP-4.13-FU&VC, attachment A.

41. A2-28 The requirements of P.S. O.C.1.1, section 4.7, repairs, have been incorporated into WBN-QCP-4.13-FU&VC, attachment F.

42. A2-29 The requirements for temporary attachment welds are now in section 11.0 of the process specification. For requirement 11.5, the necessary instructions have been incorporated into WBN-CEP-4.09, for postweld heat treatment thermocouples only.

43. A2-30 WBN-QCP-4.13-FU&VC, attachment F (P.S. O.C.1.1 attached in its entirety), directly implements P.S. 1.C.1.2, which these techniques are required. Attachment F is only applicable when P.S. O.C.1.1 is specified by the engineer. Unless otherwise specified, P.S. 3.C.5.4, which does not address prewelding requirements, is the controlling document.

44. A2-31 A sampling of drawing revisions issued subsequent to the NE review indicates that the essentials of that recommendation have already been implemented.

45. A2-31A WBN-QCI-4.03 has been superseded by WBN-CEP-4.03. WBN is in the process of revising CEP-4.03 to clarify non-ASME detail weld procedure assignments and add details related to ASME weld procedure assignments.

46. A2-32 The effectiveness of this and other applicable communication improvement programs will be included in the Phase II report.

47. A2-33 This situation was resolved by incorporating the welding technical requirements of Division of Nuclear Power Production Manual (DPM) N73M2, "Process Specification for Welding, Heat Treatment and Allied Field Operations," into General Construction Specification G-29, "Process Specifications for Welding, Heat Treatment, Non-destructive Examination, and Allied Field Fabrication Operations," thus establishing one source corporate document controlled by NE.

48. A2-33A The current TVA specification improvement program will resolve any problem of ambiquity by including a specific section on welding of ductwork in the Master Specification MS-NEB-007, "General Welding, Brazing, and Soldering Requirements for Installation, Modification, and Maintenance."

49. A2-34 These supports were identified, the primer was removed from the welds, and the supports were properly inspected.

50. A2-35 The NO review revealed 15 specific areas for procedure improvement. All of these have been resolved.