

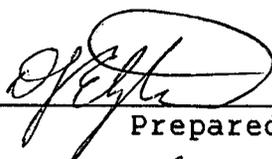
VOLUME 6

TVA WELDING PROJECT

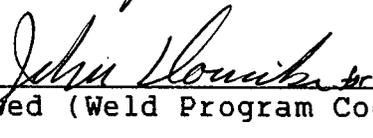
WATTS BAR NUCLEAR PLANT

PHASE I REPORT

REVISION 1



Prepared



Reviewed (Weld Program Coordination Team)
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*7/20/85
FAL*



Approved (Department Manager)



Submitted (Manager of Engineering, *New Projects*)



Approved (Site Program Manager)



Concurred (Watts Bar Program Team)

were shown by engineering calculations to be acceptable as is. This discrepancy and other minor discrepancies are detailed in attachment 7.9. Actions planned, underway, or completed are also given in attachment 7.9.

6. At WBN, NC uses a computerized weld monitoring program to status and assimilate data on critical piping welds made in the primary fluid systems of the plant. The program was initiated in 1975 with prior weld histories incorporated into the data base. The weld monitoring program contains pertinent summary information on each weld and a complete history of all weld repair activities. Data extracted from the weld monitoring program may be used as one indicator of the effectiveness of the welding program at WBN. Data extracted from the weld monitoring system for the welds statused up to January 10, 1986, was reviewed. This review revealed that the piping welds requiring cut out or repair for workmanship (improper implementation of the welding program) represent one and one-half percent of the total installed as of January 10, 1986.
7. The quality indicator analysis data base was comprised of 2,235 quality indicators for the three line organizations involved. These included employee concerns which comprise 21 percent of the total. The analysis revealed the following breakdown:
 - a. Procedural Violation - 57 percent (1273)
 - b. Program Concerns - 19 percent (432)
 - c. Hardware - 8 percent (172)
 - d. Welding Materials - 6 percent (141)
 - e. Personnel Qualification - 6 percent (136)
 - f. Design Deficiencies - 4 percent (81)
8. The NO procedures which provided the technical requirements for welding were derived from the specifications controlled by NE but were not reviewed or approved by NE. This situation was resolved by incorporating the welding technical requirements of Division of Nuclear Power Procedure 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, Nondestructive Examination, and Allied Field Fabrication Operations," thus establishing one source corporate document controlled by NE; hereafter, General Construction Specification G-29 will be referred to as G-29. No follow up or additional action is required in this matter.
9. The review of design output consistency for the FSAR commitment to the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) code identified the need for NE to specifically delineate the technical requirements for welding fabrication of seismically designed ductwork. The SMACNA code allows welding and other fabrication techniques based on the constructor's skill and technology. The TVA construction specification N3M-914, "Quality Assurance Requirements for Construction, Construction Testing, and Inspection of Safety-Related HVAC Systems," was revised to resolve any problem of ambiguity by including a specific section on welding of ductwork.

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When procedure revisions or other changes create departures from past practices, the affected employees must be made aware of the reason and intent, as well as the letter of the changes.

4.9 Actions Planned, Underway, or Completed

Actions have been taken to correct some of the specific procedure discrepancies discussed in section 4.4. These actions are identified in attachment 7.9. The remaining uncorrected items are under review at WBN to determine the necessary corrective action.

The standardized procedure system is being implemented by NC. The NC general construction procedures and construction process procedures currently under development will clearly define the construction requirements, define the lines of responsibility for implementing these requirements, and provide the level of detail necessary for individuals to correctly and uniformly implement the requirements. These new procedures will be implemented by all construction and modifications activities under NC control.

The G-29 process specifications and the Division of Nuclear Power Procedure Manual DPM N73M2 have been reviewed by NE. These two sets of welding specifications have been combined into one specification for use throughout the welding program. This is an important step, in that, it leads to one uniform welding specification for use by construction, modifications, and maintenance welding personnel.

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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. This mandate specifically includes welder qualification, welding materials, process control, preparation and control of weld maps, heat treatment, surveillance, and documentation. Responsibility to implement and operate the consolidated welding program has been tasked to NC. The site Welding Engineering Unit is responsible to review the pertinent site procedures and effect the changes necessary to implement the program consolidation.

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 the NE, NC, NO managers, and the site directors responsible to assess organizational and individual performance against established standards to identify needs for training.

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. Under this procedure, the Welding Engineering Unit supervisor is responsible to schedule and perform the assessment activities and to notify site construction and modifications management of the results of the activity verifications for use in making improvements or correcting problems. Management is made