

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

August 24, 1983

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

83 AUG 26 10:56

USNRC REGION II
ATLANTA, GEORGIA

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - RESPONSE TO VIOLATIONS
50-438/83-15-01, 50-439/83-15-01 - ERCW INTAKE SWITCHGEAR PANEL WELDS -
50-438/83-15-04, SWITCHGEAR FRAME WELDED ASSEMBLIES - 50-438/83-15-05,
BONNET TO BODY VALVE CONNECTION LOOSE DURING PERFORMANCE DHR FLUSH

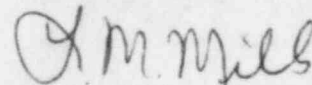
This is in response to D. M. Verrelli's letter dated July 19, 1983, report numbers 50-438/83-15, 50-439/83-15 concerning activities at the Bellefonte Nuclear Plant which appeared to have been in violation of NRC regulations. Please note that a two-day delay of our submittal was discussed with Morris Branch of your staff on August 18, 1983, and an additional day was negotiated with Linda Watson on August 22, 1983.

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

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, 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

8401240583 831215
PDR ADOCK 05000438
G PDR

1983-TVA 50TH ANNIVERSARY

An Equal Opportunity Employer

ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO SEVERITY LEVEL V VIOLATION
50-438/83-15-01, 50-439/83-15-01
ERCW INTAKE SWITCHGEAR PANEL WELDS

Description of Deficiency

10 CFR 50, Appendix B, Criterion V and the accepted QA Program (TVA-TR75-1A, Revision 5) Section 17.1A.5 require that activities affecting quality be accomplished in accordance with drawings. TVA Drawing #9 KW 0810-RV-01, Rev. 10 and ITE Drawing #33-51014-E specifies the size and type of welds required to support the 6.9 K.V. medium voltage switchgear at the ERCW intake pumping station.

Contrary to the above, on May 24, 1983, activities affecting quality were not accomplished in accordance with approved drawings in that forty plug welds which support the 6.9 K.V. medium voltage switchgear at the ERCW intake pumping station had insufficient welds.

Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

Reason for the Violation

The cause of this violation was poor craft workmanship. In addition, there was an isolated failure to apply the site-imposed engineering inspection requirement to these welds.

Corrective Steps Taken and Results Achieved

TVA generated Quality Control Inspection Report (QCIR) 33,710 to perform an inspection of all safety-related 6.9 kV medium voltage switchgear panels. Approximately 7.9% of the welds were considered unacceptable. TVA generated work releases 44,041, 44,040, 44,906, and 44,201 to rework the unacceptable welds. Correction of the welds is in progress.

Corrective Steps Taken to Avoid Further Violation

TVA considers the poor workmanship involved with these panel plug welds to be of a random nature based on the percentage of the welds that were determined to be unacceptable. Subsequent to the performance of these welds and before the identification of this violation, TVA instituted a controlled surveillance program to sample inspect all structural welds.

Date When Full Compliance Will be Achieved

All corrective action will be complete by November 1, 1983.

BELLEFONTE NUCLEAR PLANT UNIT 1
RESPONSE TO SEVERITY LEVEL V VIOLATION
50-438/83-15-05
BONNET TO BODY TO VALVE CONNECTION
LOOSE DURING PERFORMANCE OF DHR FLUSH

Description of Deficiency

10 CFR 50, Appendix B, Criterion V and the accepted QA program (TVA-TR75-1A, Rev. 5) Section 17.1A.5 requires that activities affecting quality be accomplished in accordance with procedures.

ANSI N45.2.8, paragraph 3.1 states the following: Prior to the actual installation of mechanical items, there are certain preliminary inspection, checks and similar activities that shall be completed to verify that the item and the installation area conform to specified requirements and the necessary resources are available to assure that the quality of the mechanical item will be maintained as the installation proceeds.

Contrary to the above, activities affecting quality were found not to be in accordance with procedures and drawings in that a Decay Heat Removal valve had a loose body to bonnet joint. This became a generic problem in that approximately 464 valves were involved.

Admission or Denial of the Alleged Violation

TVA denies the alleged violation.

TVA denies the violation as stated based upon the position that a program deficiency does not exist. TVA maintains that its program which ensures proper mechanical joint integrity adequately addresses this concern. The criteria established by ANSI N45.2.8 referenced in report 50-438/83-15, 50-439/83-15 addresses only five conditions for pre-installation verification, one of them being section 3.1 "General," referenced in the report. The requirements covering pre-installation have been implemented through site-generated Quality Control Procedure 1.1 "Receiving Inspection." The remaining paragraph referenced in the report from ANSI N45.2.8 is 4.4, "Inspection," which identifies controls that are to be established during installation processes. These activities are implemented through Quality Control Procedure 6.9, "Valves," and Construction Test Procedure 7.6, "Hydro-static Testing." Based on the requirements established by these documents, no violation of criteria in ANSI N45.2.8 was found.

TVA agrees that a technical problem did exist, as identified by NCR 1686, and investigation revealed that the manufacturer had in part used inadequate torque values for assembly of body to bonnet valve connections. New values were established by the manufacturer, and TVA committed to increase torque values of these connections for all affected valves. This completed corrective actions necessary and any concern associated with the manufacturer's requirement to ensure the mechanical joint integrity.

BELLEFONTE NUCLEAR PLANT UNIT 1
RESPONSE TO SEVERITY LEVEL V VIOLATION
50-438/83-15-04
SWITCHGEAR FRAME WELDED ASSEMBLIES

Description of Deficiency

10 CFR 50, Appendix B, Criterion IX and VII and the accepted QA program (TVA-TR-75-1A, Rev. 5) Sections 17.1A.9 and 17.1A.7 respectively require that measures shall be established to assure that welding is controlled and accomplished in accordance with applicable codes and specifications. In addition, measures shall be established to assure that purchased services conform to the procurement documents.

Contrary to the above, on May 24, 1983, activities affecting quality were not accomplished in accordance with vendor's specifications in that numerous vendor made welds used to assemble the 6.9kV medium voltage switchgear were deficient. (Unit 1)

Admission or Denial of the Alleged Violation

TVA denies the violation occurred as stated.

Codes

At the time the contract was awarded, there was no applicable welding code. The contract was awarded December 18, 1974. ANSI/AWS Standard D1.3 was first issued in 1978 as "Specification for Welding Sheet Steel in Structures."

Specifications

It is charged that welding as a special process must satisfy Criterion IX of 10 CFR 50, Appendix B, which requires that measures be established to assure that special processes are performed by qualified personnel using qualified procedures in accordance with applicable codes and specifications, and Criterion VII which requires that measures be established to assure that purchased equipment conform to the procurement documents.

It was not TVA's intention to define special processes or to prescribe manufacturing methods or processes for this type equipment which has seen many years of proven reliable service and in many cases thousands of operations, often in high vibration locations such as coal handling facilities in fossil generating stations. Rather, TVA specifies the required performance (including seismic qualification) and conformance to industry standards (requiring proof testing of functional performance and mechanical life as bases for rating) for this type equipment. To require a vendor to deviate from his proven manufacturing methods would tend to introduce unknown effects in the quality of the equipment. Further, for equipment of this type, TVA requires as a basis of bid that a prospective vendor provide experience data relative to equipment of similar type, scope, and complexity in operation in similar applications, and places high value on this documentation (which is confirmed). The welding of the basic structure has not been considered by TVA to be a special process unless the vendor so identifies it on the basis of the criteria of Section 9, Control of Special

Processes, of IEEE Standard 467-1980, Quality Assurance Program Requirements for the Design of Class 1E Instrumentation and Electric Equipment for Nuclear Power Generating Station (NPGS). Switchgear welding is defined on standard manufacturing drawings used exclusively in shop fabrication. The type of sales order (SO) drawings which are furnished to TVA normally do not show welding symbols. The majority of switchgear welds (95 percent) are spotwelds. The ITE factory procedures require that spotweld "set ups" are checked by spotwelding two samples of the same gauge metal as in the switchgear and performing a tensile pull test to prove the acceptability of the actual switchgear production spotwelds. Records of these tests/inspections are maintained. Section 3.9.4.1 of the vendor's QA manual points out that since the welding machine and operator are qualified by a sample demonstration test at time of any change of shift or change of set up, neither criterion for identification as a special process is met because (1) quality is not then dependent on operator skill and (2) the end quality (of the weld) can be readily determined by inspection and by the pretest. The vendor's QA manual, furnished to and approved by TVA as a condition for contract award, discusses only spotwelding.

The arc welds used in the switchgear cubicle are for modifications such as adding special brackets or to make equivalent welds in locations where spotwelding cannot be made because of equipment limitations. It was the shop practice at the time this equipment was manufactured to have arc welds inspected by the mechanical inspection supervisor. Unacceptable deficiencies would be corrected by means of an inspectors report (IR). If the arc welds were found to be acceptable, no records were maintained.

At the time the switchgear for this contract was manufactured the welding procedures and welding personnel were qualified. Similar equipment constructed by the same production facilities has been subjected to seismic testing at levels substantially higher than that of the Bellefonte Plant without any weld failures. Both the vendor and TVA continue to maintain that this equipment is acceptable for Class 1E use as is and is fully qualified for the life of the plant.