

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

May 4, 1981

HTRD-50-518/81-07

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303



Dear Mr. O'Reilly:

HARTSVILLE NUCLEAR PLANT UNIT A1 - REPORTABLE DEFICIENCY - UNACCEPTABLE WELDS
DOCUMENTED AS ACCEPTABLE - HTRD-50-518/81-07

The subject deficiency was initially reported to NRC-OIE, Region II Inspector, R. W. Wright on February 6, 1981, as NCR HNSA-125. The first interim report was submitted on March 10, 1981. In compliance with paragraph 50.55(e) of 10 CFR Part 50, we are enclosing the final report on the subject deficiency. If you have any questions, please call Jim Damer at FTS 857-2014.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE
HARTSVILLE NUCLEAR PLANT A1
UNACCEPTABLE WELDS DOCUMENTED AS ACCEPTABLE
HTRD-50-518/81-07
10CFR50.55(e) REPORT NO. 2 (FINAL)

Description of Deficiency

Unacceptable welds which required visual inspection have been documented as inspected and accepted. Unacceptable welds were attributed to deficiencies such as arc strikes, overlaps, undercuts, porosity, slag inclusions, low grinds, insufficient fillets, excessive reinforcement, spatter, and omitted welds. This condition was apparently caused by inspectors neglecting to follow acceptance criteria in isolated cases. Inspector negligence was caused by the inspectors striving to accomplish as much work as possible which resulted in overlooking marginal and/or unacceptable conditions.

Safety Implications

Failure of a system or feature due to undetected unacceptable welds could result in degradation of systems required for the safe operation or shutdown of the plant. Therefore, this condition could have jeopardized the safe operation of the plant had it remained uncorrected.

Corrective Action

Welds identified as being unacceptable by this investigation have been documented by QCIR's and will be corrected to bring them into compliance with requirements. Potentially unacceptable welds which are inaccessible will be accepted as is based on final acceptance of pressure testing on pressure-containing welds and on the overall improbability of an occurrence of a defect that would cause a failure.

Reinspection of safety-related welds inspected by a total of 45 inspectors was performed. The reinspection was performed in increments of 20 reinspections for each inspector. Inspectors who had accepted more than two unacceptable welds or weldments in the initial sampling of 20 were identified, and an additional 20 welds or weldments were reinspected. Inspectors identified as having an aggregate reject rate of more than 10 percent for the 40 reinspections were identified and all identifiable, accessible safety-related welds or weldments inspected by them were reinspected.

The complete reinspection program was not conducted for some inspectors due to their status as lead inspectors or due to their brief duration of employment. Lead inspectors seldom perform inspections due to their supervisory responsibilities taking precedence over inspection duties. Some welds which they had inspected were reexamined, but 20 accessible welds could not be identified for reinspection. Other inspectors did not have 20 welds which they had inspected which were available to reinspect.

During the investigation, 1,641 welds or weldments were reinspected. An additional 914 welds were identified as inaccessible, i.e., embedded, covered with leak chase, buried, etc. As a result of the reinspection, 85 rejectable welds were identified; this is an overall rejection rate of 5.2 percent. These rejectable welds were attributed to 15 inspectors who had accepted at least one rejectable weld. Seven of these inspectors had accepted in excess of 10 percent unacceptable welds during the first 40 reinspections. Only one inspector was identified as accepting more than 10 percent rejectable welds for the overall reinspection.

Inspectors still employed by TVA identified as having an aggregate reject rate of 10 percent or less in the first 40 welds but having at least one reject were counselled and shown his/her incorrect work by supervisory personnel. An informal record of the counselling session was prepared and placed in the unit files.

Inspectors still in the employ of TVA and identified as having an aggregate reject of greater than 10 percent in the first 40 welds were removed from the inspection force and were required to attend 40 hours of retraining and were tested for recertification. In addition, each was counselled, shown those welds which had been incorrectly accepted, and a formal written reprimand placed in his/her personal history record.

Welders identified in this reinspection investigation will be required to repeat their attendance of the QA orientation program and the classroom portion of the welder certification training module. Additionally, they will be individually counselled by their specific craft manager or his representative. Evidence of this retraining and counselling shall be documented.

To avoid further occurrences, responsible lead inspectors will, on a surveillance basis, evaluate routine welds accepted by inspectors under their supervision to verify the ability of the inspectors and the condition of the accepted welds. Inspectors who accept unacceptable work will be retrained, counselled, disciplined, and/or removed from their position as warranted by investigation of the particular incident. Welders identified as violating procedural requirements will be counselled, retrained, disciplined, and/or removed from their position as warranted by investigation of the particular incident.

Evaluation of the unacceptable welds, dispositioning, and appropriate corrective action will be complete by July 1, 1981. Identification of the involved inspectors was completed by March 16, 1981. Reprimands have been issued and retraining is in progress with completion scheduled by May 1, 1981. Welders have been identified and appropriate actions will be completed by July 1, 1981.

This condition is unique to the Hartsville site and no other nuclear plants are involved.