

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

August 29, 1980

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

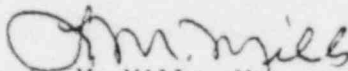
Dear Mr. O'Reilly:

HARTSVILLE NUCLEAR PLANT ALL UNITS - REPORTABLE DEFICIENCY - WIRING  
DISCREPANCIES ON HIGH PRESSURE CORE SPRAY COMPONENTS (NCR HNP-A-084,  
HNP-A-085, HNP-A-086)

Initial report of the subject deficiency was made to F. S. Cantrell  
and R. W. Wright on February 8, 1980. The first interim report  
of the subject deficiency was submitted on March 7, 1980. In  
compliance with paragraph 50.55(e) of 10 CFR Part 50, enclosed is  
the final report of the subject deficiency. If you have any  
questions concerning this subject, please call Jim Domer 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) ✓  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Washington, DC 20555

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ENCLOSURE

HARTSVILLE NUCLEAR PLANT - ALL UNITS  
WIRING DISCREPANCIES ON HIGH PRESSURE CORE SPRAY COMPONENTS  
10CFR50.55(e) REPORT NO. 2 (FINAL)  
NCR'S HNP-A-084, HNP-A-085, AND HNP-A-086

On February 8, 1980, TVA informed NRC-OIE Region II, Inspectors F. S. Cantrell and R. W. Wright, of a reportable deficiency under 10CFR50.55(e) involving wiring discrepancies in the high pressure core spray (HPCS) diesel generator (DG) control switchgear, HPCS motor control centers, and HPCS DG air compressor skid assembly. The HPCS DG control switchgear deficiencies were reported separately under 10CFR21 to your office by Morrison-Knudson in a letter dated April 7, 1980. This is our final report on these deficiencies.

Description of Deficiencies

Wiring checks by Hartsville site personnel disclosed wiring discrepancies in the HPCS DG control switchgear (HNP-A-084), HPCS motor control centers (HNP-A-085), and the HPCS DG air compressor skid assembly (HNP-A-086). These discrepancies involve wiring terminations which do not match the wiring diagrams, errors on the wiring diagrams, missing wires, mislabeling or nonlabeling of parts or terminations, and numerous examples of discrepancies between bill of materials and installed components.

The DG control switchgear was fabricated by International Controls and Switchgear, Rocky Mt., North Carolina (ICS), for Power Systems Division of Morrison-Knudson Company (Morrison-Knudson), Incorporated, Rocky Mt., North Carolina, under subcontract to GE who supplied these components to TVA as part of the NSSS package for both Hartsville and Phipps Bend Nuclear Plants. The DG air compressor skid units were fabricated by Morrison-Knudson as part of the GE NSSS package. The HPCS motor control centers were fabricated by Powell Electrical Manufacturing Company (Powell), Houston, Texas, as part of the GE NSSS package.

Safety Implications

The list of wiring discrepancies on each of the subject NCR's contain one or more items which could potentially prevent the components from functioning as intended. These conditions could have degraded the performance of the safety function of the HPCS system if the discrepancies had remained uncorrected and could have adversely affected the safety of operation of the facility.

Corrective Actions

TVA performed an extensive wiring check on each item of equipment identified by the subject NCR's and have identified all those discrepancies which would affect the operation of the components involved. GE has evaluated these discrepancies and has approved the appropriate documentation for rework of these components to meet the specifications and correct discrepancies in drawings or bills of

material. In all cases the subject components will be reworked so that the wiring for each type of component is identical and the wiring matches the final as-built drawings for each.

GE and Morrison-Knudson came to the site in late March and corrected hardware problems with the DG control switchgear for which parts were available. However, some replacement parts were not available at that time and will be installed as indicated below. Necessary drawing changes were marked at that time for revision later by Morrison-Knudson and/or ICS, as applicable.

Hardware corrections on all components are now being scheduled (although none of this work is critical to plant schedule because the components will not be installed for one or more years). The hardware corrections including rewiring, replacement of damaged components, proper labeling of parts or terminations, etc., will be completed by January 30, 1981. Software changes including drawing corrections and corrections to the bills of material necessary to resolve these discrepancies will be completed by June 30, 1981. Since all wiring discrepancies have been identified, no further testing of these components will be performed at this time other than that associated with the RIS & PM program.

As a result of these deficiencies, Morrison-Knudson has removed ICS from their authorized supplier list. In addition they have revamped two comprehensive internal procedures involving switchgear manufacturing and inspection. These procedures stress workmanship and acceptance criteria and cover general electrical work.

Powell has indicated to TVA that since these components were fabricated (about four years ago), their QA system has undergone extensive revision and upgrading. Revision to their QA manual, most of their QA procedures, production standards, inspection standards, and special process procedures have been implemented in this period. Also personnel involved have been given additional training in the QA/QC program.