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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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U.S. Nuclear Regulatory Commission
Region II

Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3 - NRC-OIE REGION II INSPECTION
REPORT 50-259/86-22, -260/86-22, -296/86-22 - RESPONSE TO VIOLATION

Enclosed is our response to G. G. Zech's July 28 and August 8, 1986 letters to
S. A. White transmitting IE Inspection Report Nos. 50-259/86-22, -260/86-22,
and -296/86-22 for our Browns Ferry Nuclear Plant which cited TVA with one
Severity Level IV Violation.

This response was due September 8, 1986. An extension to September 22, 1986
was discussed between M. J. May and Flöyd Cantrell of your staff on
September 4, 1986. If you have any questions, please get in touch with
M. J. May at (205) 729-3566.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. Gridley, Director
Nuclear Safety and Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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RESPONSE
NRC INSPECTION REPORT NOS.
50-259/86-22, 50-260/86-22, AND 50-296/86-22
GARY G. ZECH'S LETTERS TO S. A. WHITE
DATED JULY 28 AND AUGUST 8, 1986

Item 1

10 CFR 50, Appendix B, Criterion III requires that measures shall be established to assure applicable regulatory requirements and the design basis are met. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled.

Contrary to the above, this requirement was not met from January 15 - June 16, 1986, in that newly implemented standards for control of installation of insulated cables (TVA General Specification 38) were not specified for use on facility design modifications in progress prior to January 15, 1986. The TVA Office of Engineering implemented the new cable installation criteria of General Specification 38, revision 7, at all TVA facilities with the exception of Browns Ferry (BFN) as of January 15, 1986. General Specification 38 was issued for all TVA sites to have insulated cable installations done consistently at all TVA nuclear plants and to bring TVA's cable installation practices up to a level consistent with current industry practice. General Specification 38, revision 7, was issued on January 15, 1986 to June 16, 1986 (inspection date) the licensee did not implement the cable installation specification G-38 at BFN although this corrective action was deemed necessary at all other TVA facilities to meet cable installation standards.

This is a Severity Level IV violation (Supplement I).

1. Admission or Denial of the Alleged Violation

We admit that the violation occurred as stated.

2. Reasons for the Violation

All insulated cables installed at BFN before January 15, 1986, were installed to Construction Specification G-4, Cable Installation. TVA management decided that some modifications in process would be finished under Specifications G-3, Conduit Installation, and G-4, Cable Installation, instead of using the new Specifications G-38, Cable Installation, and G-40, Conduit Installation.



The use of G-38 cable installation often requires the use of its companion specification for conduit installation, G-40. Many modifications in progress for unit 2 would have to be redesigned and/or reconstructed in accordance with G-40 in order for a successful G-38 installation to proceed. Since the G-38 terminology, "future modifications," was subject to interpretation, it was decided that certain modifications in process would be finished under the old specification.

Therefore, the following implementation strategy for the orderly transition to the G-38 and G-40 specifications at BFN was chosen:

- a. Utilize G-3 and G-4 to complete remaining unit 2 outage work for which designs had been issued before January 15, 1986.
- b. Incorporate G-38 and G-40 requirements into unit 2 outage work for which designs had been issued on or after January 15, 1986.
- c. G-38 and G-40 would be utilized for the unit 2 cable replacement activities in the drywell.
- d. G-38 and G-40 would be used for the future modification activities on units 1 and 3 when work resumed.

3. Corrective Steps Which Have Been Taken and Results Achieved

On June 18, 1986 TVA placed a hold on all cable pulling at BFN. The order stated that the hold would be lifted for each applicable section when the following conditions were met:

- a. Site instructions associated with cable pulling activities must be revised or new procedures written to incorporate the requirements set forth in Specifications G-38 and G-40.
- b. Site personnel involved in cable pulling activities must receive documented training in the revised site instructions.

Quality Assurance verified compliance with the hold order through the surveillance process.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

We will implement standards G-38 and G-40 for new cable installation. However, both modification and maintenance personnel have requested numerous engineering interpretations in applying all the requirements of G-38 and G-40 to restoration of existing cable/conduit installations. Therefore, our Division of Nuclear Engineering is performing an evaluation



to determine the appropriate application of G-38 and G-40 to maintenance and modification routine restoration work, in order that we may continue activities without unnecessary documentation and replacement of existing cable and conduit installations. The evaluation will take into account the necessary installation and inspection controls. Until that evaluation is complete and appropriate procedural controls are in place, any maintenance or modification restoration activity deviating from G-38 or G-40 will be justified and documented before the work being performed. A status report will be submitted to the NRC by October 30, 1986.

Several technical integrity verification programs are presently underway at BFN to demonstrate the integrity of cable installed under G-3 and G-4. These are scheduled to be completed in the coming months. Preliminary results indicate that the installed cable is capable of reliable operation at several times the sidewall pressure and at lesser minimum bend radius than specified by the cable suppliers. If any of the programs should indicate cases of inadequate cable conditions, new cable will be installed using the G-38 and G-40 revised installation instructions.

5. Date When Full Compliance Will Be Achieved

Our integrity verification programs will be complete before restart of unit 2 at BFN.

