

REGULATORY DOCKET FILE COPY

MAY 0 2 1980

Docket Nos. 50-390  
and 50-391

Mr. H. G. Parris  
Manager of Power  
Tennessee Valley Authority  
500A Chestnut Street Tower II  
Chattanooga, Tennessee 37401

Dear Mr. Parris:

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NRC PDR I&E (3) *maly*  
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DEisenhut bcc: NSIC  
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SUBJECT: SEPARATION OF ELECTRICAL EQUIPMENT AND SYSTEMS AT NUCLEAR  
POWER PLANTS

We would like to advise you of a letter (Enclosure 1) dated August 16, 1979 to the Office of Inspection and Enforcement from the Washington Public Power Supply System (WPPSS). In that letter WPPSS advised us that a review of the equipment and systems installed in the control room of the WPPSS Nuclear Project No. 2 uncovered over 150 instances of violations of separation criteria.

In view of the large number of violations cited in the WPPSS letter for the control room, and the apparent ease with which they occur anywhere in the plant, we require that you conduct a plant-wide field audit of your installed electrical equipment and systems to determine conformance with your stated criteria.

Enclosure 2 specifies the procedures to be used for conducting an electrical separation field audit at your facility. In audits performed at other facilities, we noted two major discrepancies: (1) the auditors included personnel who had performed the initial design and installation, and (2) the review concentrated on Class IE circuits to the exclusion of associated circuits. Please pay particular attention to these two areas.

Within fifteen days of receipt of this letter, please advise us of your intent to comply with our requirements as specified in Enclosure 2.

Sincerely,

Hand signed by

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

8005300538 A

Enclosures:  
As stated \*See previous concurrences

OFFICE	See next page	*DPM:LB#2	*DPM:LB#2			
cc:		CStahle:ph	ASchwencer			
SURNAME		05/ 2 /80	05/ 2 /80			
DATE						

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Division of Project Management

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CC: ▶ See next page	CStahle,ph	ASchwencer		
SURNAME ▶	05/2/80	05/2/80		
DATE ▶				

Tennessee Valley Authority

ccs:

Herbert S. Sanger, Jr. Esq.  
General Counsel  
Tennessee Valley Authority  
400 Commerce Avenue  
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Knoxville, Tennessee 37902

Mr. H. N. Culver  
Tennessee Valley Authority  
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Knoxville, Tennessee 37902

Mr. Michael Harding  
Westinghouse Electric Corporation  
P. O. Box 355  
Pittsburgh, Pennsylvania 15230

Mr. David Lambert  
Tennessee Valley Authority  
400 Chestnut Street Tower II  
Chattanooga, Tennessee 37401

Mr. J. F. Cox  
Tennessee Valley Authority  
400 Commerce Avenue, W10C131C  
Knoxville, Tennessee 37902

Resident Inspector/Watts Barr NPS  
c/o U.S. Nuclear Regulatory Commission  
P. O. Box 629  
Spring City, Tennessee 37831

WPPSS NUCLEAR PROJECT NO. 2  
REPORTABLE DEFICIENCY AND CORRECTIVE ACTION  
PLANT ELECTRICAL SEPARATION

WASHINGTON PUBLIC POWER SUPPLY SYSTEM  
DOCKET NO. 50-397  
LICENSE NO. CPPR-93

Description of Deficiency

To date the Plant Main Control Room has been reviewed and approximately 150 instances have been discovered involving violations in the application of WNP-2 Electrical Separation Criteria to safety related cables and panel wiring. In general, the deficiencies involved incorrect labeling, routing, termination, or power source of safety related cabling within PGCC or Control Room Panels. Examples of deficiencies found are as follows:

1. Division 3 HPCS instrumentation powered from a Division 1 source;
2. Division 3 HPCS cables routed in Division 1 PGCC ducts and Division 1 cable trays in the cable spreading room.

Safety Implication

The deficiencies found to date could have resulted, under single failure conditions, in the simultaneous loss of redundant safety related equipment with possible subsequent loss of safety function.

Corrective Action

A task force is currently reviewing the Main Control Room and plant areas for other violations of WNP-2 Separation Criteria in all safety related applications.

The WNP-2 Separation Criteria has been refined and clarified and is being used by the Separation Task force as criteria by which to judge plant separation as designed and installed. This same criteria will be submitted in an FSAR amendment. All instances of deficiencies identified as criteria violations will be evaluated and corrected via Project Engineering Directives (PED's) to the appropriate contractor.

The task force is working to an action plan which to date has resulted in the completion of the Main Control Room review and identification of deficiencies as described above. The remainder of the review which includes such things as MCC's, Local Panels, etc., is scheduled to be complete by October of 1979. Note that ongoing reviews will be conducted as warranted by construction completion.

## SEPARATION FIELD AUDIT

You are requested to perform a detailed field audit of installed electric equipment and systems to determine conformance to the criteria relating to the separation of electric equipment and systems to which you have committed in your FSAR, (e.g., Regulation Guide 1.75 and 1.120)

This audit should include a sample not less than 10% of the installed equipment and cables, and should emphasize, but not necessarily be limited to:

- a) Separation of redundant Class IE equipment (e.g., motors, valve operators, instruments).
- b) Separation of redundant Class IE cables.
- c) Separation of associated circuits.
- d) Identification (marking) of redundant Class IE equipment and cables.
- e) Identification (marking) of associated circuits to a level indicative of the Class IE system with which they are associated.
- f) Separation of redundant wiring, indicators and controls at panels and control boards.

The audit should be performed by engineering and supporting technical personnel who understand the criteria, standards and guides relating to the separation of electrical equipment and systems, and who were not involved in the design and installation of the equipment and systems under audit.

The results of this audit should be reported to NRC, with a discussion of any corrective actions taken and any additional audit to be conducted in the event numerous violations are uncovered.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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May 2, 1980

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Sincerely,

A handwritten signature in cursive script, appearing to read "A. Schwencer".

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosures:  
As stated

cc: See next page

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Tennessee Valley Authority

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