

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

November 19, 1979

DOCKET NUMBER
PROPOSED RULE PR - Misc. Notice
Reg. Guide



Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Docketing and Service Branch

Dear Sir:

In accordance with provisions for public review and comment indicated in the Federal Register on January 17, 1979, the Tennessee Valley Authority (TVA) is pleased to provide the enclosed comments on the following draft regulatory guide:

Task RS 705-4 - "Lightning Protection for Nuclear Power Plants"

Since the content and interpretation of regulatory guides have a large impact on TVA's extensive nuclear commitment, we welcome the opportunity for review and comment. TVA comments on additional regulatory guides will be forthcoming as a part of a continuing program.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc (Enclosure):

Executive Secretary
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
1717 H Street, NW
Washington, DC 20555

Mr. Fred Stetson
AIF, Inc.
7101 Wisconsin Avenue
Washington, DC 20555

Acknowledged by [signature] 11/30/79

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ENCLOSURE

Tennessee Valley Authority's Comments on
Task RS 705-4 - "Lightning Protection for
Nuclear Power Plants"

1. General - We believe that the alternative regulatory position presented as Appendix A to the value/impact statement is much preferred to the position offered in the draft regulatory guide. Our objections to the requirements of this regulatory guide are similar to the comments on the draft (1.XX) version dated March 9, 1978, as provided by IEEE.

2. Page 3, Section C.4, Alternative Position - We believe that there is no technical basis for the requirement for surge arresters on both the primary and secondary sides of the startup and unit auxiliary transformers. The position makes no attempt to distinguish between transformers which are connected to overhead lines and those which are not. Depending on specific plant designs, both the startup transformers and the unit auxiliary transformers may have no exposure to lightning and therefore, may not require surge arresters on their primary sides. This can be easily verified from studies that indicate that the transferred surge is of lesser magnitude and of such slope that neither surge arresters or surge capacitors are needed. Surge arresters on the secondary side of these transformers are not required even when the primary side may be connected to overhead lines because:
 - a. The transmission lines and transformer yard structures are shielded; therefore, a direct stroke to the equipment can be safely discounted.
 - b. The primary side surge arrester attenuates the strokes to such a level that neither the secondary windings nor the connected equipment will be damaged.
 - c. The failure mode of the primary side surge arrester is fail safe (i.e., it may fail to seal off, but it will not fail to spark over).
 - d. A transformer high-to-low winding failure would be a secondary effect preceded by winding to ground or turn-to-turn failure. The surge arrester will not afford protection in this case; it will carry line-to-ground current until it is destroyed.

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