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ELECTRIC ENGINEERING  
DEPARTMENT

DOCKET NUMBER  
PROPOSED RULE PR - Misc Notice  
Reg Guide

October 16, 1979



Secretary  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attn: Docketing and Services Branch

Gentlemen:

Attached are our comments on draft Regulatory Guide  
Task RS 705-4 dated August 1979, "Lightning Protection for Nuclear  
Power Plants."

Very truly yours,

R. C. L. Olson  
Senior Engineer

RCLO/smn  
Attachment

Acknowledged by card. *of 10/22*

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Baltimore Gas & Electric Co. Comments on  
Draft Regulatory Guide  
Lightning Protection for Nuclear Power Plants  
NRC Division 1, Task RS 705-4

Since the BG&E Co. has representation on the IEEE Power Engineering Society Surge Protective Devices (SPD) Committee and is therefore involved with the development of the detailed SPD position on the subject guide, please be advised that the BG&E Co. hereby fully endorses said position, which will be submitted to the NRC by the approved extended date of November 23, 1979.

In general, the Regulatory position in the subject guide is unrealistic and not in keeping with sound engineering practice for lightning protection of important facilities, including nuclear power plants. Continued implication that a 200KA lightning stroke will be discharged through a plant arrester indicates a lack of knowledge of lightning phenomenon, shielding design, traveling wave theory, and recent statistical study information. The SPD comments forthcoming will detail these inaccuracies and provide correct replacement information, discussing such items as follow:

1. 200KA stroke to the shielding system and a lower (15-20KA) discharge current through an arrester.
2. Proper use of "lower" rated arresters for effectively grounded systems, which are common to the type facilities in question.
3. Arrester testing, both factory design and conformance testing and field assurance testing.
4. Shielding design for transmission lines, switchyards, and plant facilities.
5. Transmission system design and grounding to minimize backflash occurrence and effect.
6. Applicability of existing ANSI Standards for surge arresters and insulation coordination.
7. Application and location of surge arresters.

The alternative regulatory position is by far the better of the two presented in the draft guide, although it has certain areas which need qualification; these will also be discussed in the ensuing SPD comments.

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