

December 15, 2005

MEMORANDUM TO: James E. Dyer, Director  
Office of Nuclear Reactor Regulation

FROM: Carl J. Paperiello, Director **/RA/**  
Office of Nuclear Regulatory Research

SUBJECT: IMPENDING PUBLICATION OF FINAL NUREG/CR-6866,  
"TECHNICAL BASIS FOR REGULATORY GUIDANCE ON  
LIGHTNING PROTECTION IN NUCLEAR POWER PLANTS"

I am forwarding for your information the enclosed final NUREG/CR-6866, "Technical Basis for Regulatory Guidance on Lightning Protection in Nuclear Power Plants." The Office of Nuclear Regulatory Research (RES) plans to submit this manuscript for publication in 2 weeks.

The RES staff initiated this study in response to User Need Request, NRR-2002-017, to develop a regulatory guide on lightning protection for nuclear power plants. Toward that end, the goal of this contractor-prepared NUREG-series report is to establish the technical basis for the guidance presented in Regulatory Guide 1.204, "Guidelines for Lightning Protection of Nuclear Power Plants," as it relates to protecting nuclear power structures and systems from direct lightning strikes and the resulting secondary effects. Regulatory Guide 1.204 is applicable to future reactors and operating plants that voluntarily commit to it, while implementing digital upgrades. The breadth of the technical basis includes protecting the power plant, plant switchyard, electrical distribution system, safety-related instrumentation and control (I&C) systems, plant communications, and other important equipment in remote ancillary facilities that could impact safety. In addition, this report provides recommendations for guidance on designing and implementing lightning protection systems, as well as guidance on the related testing and maintenance practices, which has been incorporated into Regulatory Guide 1.204.

The Office of Nuclear Reactor Regulation (NRR), Division of Engineering (DE) previously reviewed a draft of this report, and the enclosed final report reflects the resultant feedback. Please feel free to contact me or Ms. Christina E. Antonescu of my staff (at 301-415-6792 or [CEA1@nrc.gov](mailto:CEA1@nrc.gov)) if you have any questions concerning the impending issuance of this report.

Enclosure:  
As stated

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