

March 13, 2003

Dr. William D. Travers
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Dr. Travers:

SUBJECT: DRAFT FINAL REGULATORY GUIDE DG-1119, "GUIDELINES FOR EVALUATING ELECTROMAGNETIC AND RADIO-FREQUENCY INTERFERENCE IN SAFETY-RELATED INSTRUMENTATION AND CONTROL SYSTEMS"

During the 500th meeting of the Advisory Committee on Reactor Safeguards on March 6-8, 2003, we met with representatives of the NRC's Office of Nuclear Regulatory Research (RES) to discuss draft final Regulatory Guide DG-1119, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems." We also had the benefit of the documents referenced.

RECOMMENDATION

DG-1119 provides appropriate guidance for evaluating the effects of electromagnetic and radio-frequency (EMI/RFI) interference on safety-related instrumentation and control (I&C) systems and should be issued. Public comments have been appropriately dispositioned by the staff.

DISCUSSION

Regulatory Guide 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," which DG-1119 will replace, was issued in January 2000. Since the issuance of Regulatory Guide 1.180, there have been significant changes in the electromagnetic and radio-frequency envelopes in which these instruments and controls operate. The revised regulatory guide provides guidance to address these changes. These revisions include endorsing Military Standard (MIL-STD) 461E and the International Electrotechnical Commission (IEC) 61000 series of EMI/RFI test methods, extending the guidance to cover signal line testing, incorporating frequency ranges where portable communication devices are experiencing an increase in use, and relaxing the operating envelopes (test levels) when experience and confirmatory research warrants.

RES performed two studies to develop the technical bases for guidance on EMI/RFI and power surge withstand capability. RES also documented the research and current knowledge base for electromagnetic compatibility testing along interconnecting signal lines, which had been an

open item in the original version of Regulatory Guide 1.180. This issue is now addressed in the current draft final guide, DG-1119. The recommendations on test criteria, test methods, and operating envelopes were significantly influenced by existing military standards used by the Department of Defense.

Sincerely,

/RA/

Mario V. Bonaca
Chairman

References:

1. U.S. Nuclear Regulatory Commission, Regulatory Guide DG-1119, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," February 2003.
2. U. S. Nuclear Regulatory Commission, NUREG/CR-5609, "Electromagnetic Compatibility Testing for Conducted Susceptibility Along Interconnecting Signal Lines," dated June 2002.
3. U. S. Nuclear Regulatory Commission, NUREG/CR-XXXX, ORNL/TM-2001/140, "Comparison of U.S. Military and International Electromagnetic Compatibility Guidance," June 2002.