

December 12, 2003

Mr. Tawfik M. Raby  
Chairman, N-17  
National Institute of Standards  
and Technology  
Mailstop 8561  
Building 235, Room A141  
Gaithersburg, MD 20899

Dear Mr. Raby:

SUBJECT: ANS-6.4 and ANS-6.4.2 N-17 COMMITTEE BALLOTS

Enclosed are my ballots for ANS-6.4, "Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants" (Reaffirmation), and ANS-6.4.2, "Specification for Radiation Shielding Materials" (Reaffirmation). I have voted "approved with comments." Furthermore, I have reviewed the Scope of the standards, and have no objections.

If you have any questions concerning these ballots, please contact Al Adams at 301-415-1127 or myself at 301-415-1126.

Sincerely,

**/RA/**

James E. Lyons, Program Director  
New, Research and Test Reactors Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc w/enclosure:  
Please see next page

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U.S. Nuclear Regulatory Commission  
Comments on ANS-6.4  
Nuclear Analysis and Design of Concrete Radiation Shielding for  
Nuclear Power Plants

1. Page 2 of the standard refers to ANSI/ANS 6.4.3 (1991); however, the date of 1993 is given for that standard in the Reference section (item[4] page 27).
2. Appendix A refers to the RSICC at ORNL as the Radiation Shielding Information Center. The name has been changed to the Radiation Safety Information Center.
3. The list of shielding computer codes in Appendix A could be updated.
4. The list of organizations at the end of the reference section should include the organization's web site address.
5. The disclaimers at the top of the Bibliography and Appendices have the wrong date for the standard (1996 vice 1997), making the statements confusing.
6. This standard references secondary documents that can be over 40 years old, that could be a barrier to meeting them. For example, ANS-6.4, section 8.4.3, refers the reader to Rockwell's "Reactor Shielding Design Manual" (1956) and Blizzard's "Reactor Handbook-Shielding," (1962). Although these are classic references, they are out of print and very difficult to find.

U.S. Nuclear Regulatory Commission  
Comments on ANS-6.4.2  
Specification for Radiation Shielding Materials

1. The age of the references is critical for this standard since there have been many advances in materials engineering in the last 20 years. This standard references secondary documents that can be over 40 years old, that could be a barrier to meeting them.