American Nuclear Society

verification and validation of non-safety-related scientific and engineering computer programs for the nuclear industry

an American National Standard

REAFFIRMED
June 15, 2021
ANSI/ANS-10.4-2008; R2021
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American National Standard
Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear Industry

Secretariat
American Nuclear Society

Prepared by the
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Standards Committee
Working Group ANS-10.4

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Comments on this standard are encouraged and should be sent to Society Headquarters.

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Foreword

(This Foreword is not a part of American National Standard "Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear Industry," ANSI/ANS-10.4-2008.)

The purpose of this standard is to provide guidelines for the verification and validation (V&V) of non-safety-related scientific and engineering computer programs developed for nuclear industry applications. The standard does not recommend a specific approach to program development but does recommend that V&V activities be carried out in parallel with program development. For a specific project, the project sponsor should determine the level of the V&V effort to be applied. The standard complements the following ANS-10 standards relating to computer program development:

ANSI/ANS-10.3-1995, "Guidelines for the Documentation of Computer Programs" (withdrawn);

ANSI/ANS-10.5-2006, "Accommodating User Needs in Scientific and Engineering Computer Software Development";

ANSI/ANS-10.2-2000, "Portability of Scientific and Engineering Software."

In addition, an effort has been made to maintain consistency in terminology and concepts with various software standards being developed under the sponsorship of the Institute of Electrical and Electronics Engineers, Inc., and to identify areas of disagreement.

Compliance with this standard does not substitute for compliance with regulatory requirements. For example, any analysis that requires a 10 CFR Part 50 Appendix B quality assurance program would still require one whether or not it conforms with this standard.

Charles R. Martin was the working group chair for much of the development of this standard. His contributions are gratefully acknowledged.

This standard has been written by Working Group ANS-10.4 of the American Nuclear Society's Standards Committee. The membership of this group during the preparation of the final drafts consisted of the following:

A. O. Smetana (Chair), *Savannah River National Laboratory*

B. L. Kirk, *Oak Ridge National Laboratory*
J. B. Manneschmidt, *Oak Ridge National Laboratory*
K. A. Morrell, *Savannah River Nuclear Solutions, LLC*
C. R. Martin, *U.S. Defense Nuclear Facilities Safety Board*

Substantial contributions toward the development of the earlier drafts of this standard have also been received from the following:

H. Hunter, *Oak Ridge National Laboratory*
T. M. Lloyd, *BNG Fuel Solutions*
Y. Orechwa, *U.S. Nuclear Regulatory Commission*
D. Peercy, *Sandia National Laboratories*
H. S. Hopkins, *Lawrence Livermore National Laboratory*
K. O'Kula, *Westinghouse Safety Management Solutions*
C. A. Sparrow, *Mississippi State University*
R. G. Quirk, *U.S. Defense Nuclear Facilities Safety Board*
R. C. Singleterry, Jr., *NASA Langley Research Center*
J. Pardo, *Savannah River Nuclear Solutions, LLC*
D. Sparkman, *U.S. Department of Energy*
T. Austin, *Bechtel National*
D. D. Brayton, *Safer Services*
G. Danielson, *U.S. Department of Energy*

J. R. Shultz, *U.S. Department of Energy*
S. S. Seth, *U.S. Department of Energy*
R. C. Schrotke, Jr., *Battelle Northwest National Laboratory*
R. W. Stevens, Jr., *U.S. Department of Energy*

Subcommittee ANS-10, Mathematics and Computation, had the following membership at the time of its approval of this standard:

A. O. Smetana (Chair), *Savannah River National Laboratory*

B. R. Frank, *Westinghouse Electric Company, LLC*
J. B. Manneschmidt, *Oak Ridge National Laboratory*
B. L. Kirk, *Oak Ridge National Laboratory*
R. C. Singleterry, Jr., *NASA Langley Research Center*
C. R. Martin, *U.S. Defense Nuclear Facilities Safety Board*
P. P. H. Wilson, *University of Wisconsin-Madison*
Y. Orechwa, *U.S. Nuclear Regulatory Commission*
C. A. Sparrow, *Mississippi State University*
E. L. Quinn, *Longenecker and Associates*

The American National Standards Committee N17, Research Reactors, Reactor Physics, and Radiation Shielding, had the following membership at the time it reviewed and approved this standard:

T. M. Raby (Chair), *National Institute of Standards and Technology*
A. Weitzberg (Vice Chair), *Individual*

S. Anderson, *Westinghouse Electric Company, LLC*
W. H. Bell, *American Institute of Chemical Engineers*
(Alt. R. D. Zimmerman, *American Institute of Chemical Engineers*)
R. R. Brey, *Health Physics Society*
R. E. Carter, *Individual*
D. M. Cokinos, *Brookhaven National Laboratory*
M. L. Corradini, *National Council on Radiation Protection and Measurements*
E. Ehrlich, *General Electric*
B. K. Grimes, *Individual*
N. E. Hertel, *Georgia Institute of Technology*
C. Heysel, *McMaster University*
W. A. Holt, *Individual*
W. C. Hopkins, *Individual*
M. A. Hutmaker, Jr., *U.S. Department of Energy*
A. C. Kadak, *Massachusetts Institute of Technology*
L. I. Kopp, *Individual*
P. M. Madden, *U.S. Nuclear Regulatory Commission*
(Alt. A. Adams, Jr., *U.S. Nuclear Regulatory Commission*)
J. F. Miller, *Institute of Electrical and Electronics Engineers*
J. E. Olhoeft, *Individual*
R. E. Pevey, *University of Tennessee-Knoxville*
W. J. Richards, *National Institute of Standards and Technology*
C. T. Rombough, *CTR Technical Services, Inc.*
T. R. Schmidt, *Sandia National Laboratories*
S. H. Shepherd, *Individual*
A. O. Smetana, *Savannah River National Laboratory*
R. R. Tsukimura, *Aerotest Operations*
A. R. Veca, *General Atomics*
S. H. Weiss, *National Institute of Standards and Technology*
(Alt. T. J. Myers, *National Institute of Standards and Technology)*

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