

September 16, 2025

Mr. Garrett Smith
Director, Office of Nuclear Safety
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874

Subject: Letter of notification of ANSI approved standards for DOE adoption or awareness

Dear Garrett:

The American Nuclear Society (ANS), a standards development organization accredited by the American National Standards Institute (ANSI), is pleased to provide you with electronic copies of recently approved standards. We request that this standard be reviewed by the DOE staff and adopted for use in regulatory applications. Accordingly, please feel free to distribute the electronic copies to your staff as necessary. If any of these standards are found to merit application in the regulatory framework, we would very much appreciate you informing us so we can update our records.

We believe that ANS has contributed significantly to the modernization of nuclear safety standards that contribute to modernization of nuclear safety in a wide variety of areas. These standards may not employ risk-informed, performance-based methods in the same way or to the same extent. Details of the recently published standard are provided below. Appropriate regulatory guidance documents for adoption have been proposed when possible.

ANSI/ANS-8.20-2025, *Nuclear Criticality Safety Training for Fissionable Material Operations Outside Reactors*, (revision of ANSI-8.20-1991; R2021) received ANSI approval March 26, 2025. This standard provides a framework for the training of personnel associated with fissionable material operations outside reactors where a sufficient quantity of fissionable material is present such that controls for nuclear criticality safety are needed to prevent a criticality hazard. This standard does not apply to training and qualification of nuclear criticality safety engineers. ANSI/ANS-8.19-2014 (R2024), *Administrative Practice for Nuclear Criticality Safety*, requires management to establish a training and qualification program for nuclear criticality safety engineers. Guidance for establishing that program may be obtained from ANSI/ANS-8.26-2024, *Nuclear Criticality Safety Engineer Training and Qualification Program*.

Suggested vehicle for adoption:

- DOE Order 420.1C, "Facility Safety" (soon to be 420.1D)

DOE representatives on the working group:

- Kelsey M. Amundson, Los Alamos National Laboratory
- Theresa Cutler, Los Alamos National Laboratory
- Thomas J. Marenchin, U.S. Department of Energy
- Catherine G. Percher, Lawrence Livermore National Laboratory

DOE representatives on the consensus committee when approved:

- Larry J. Berg, U.S. Department of Energy
 - Douglas G. Bowen, Oak Ridge National Laboratory
 - Kermit. A. Bunde, U.S. Department of Energy
 - James A. Miller, Sandia National Laboratories
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ANSI/ANS-19.10-2025, *Methods for Determining Neutron Fluence in BWR and PWR Pressure Vessel and Reactor Internals*, (revision of ANS-19.10-2009; R2021) received ANSI approval January 21, 2025. This standard provides a procedure for the evaluation, qualification, and reporting of (1) the best-estimate fast neutron fluence ($E > 1.0$ MeV); (2) the displacements per atom (dpa); and/or (3) the isotopic reaction rates at various regions surrounding the reactor from the core baffle/shroud to the inside surface of the vessel, through the RPV and the reactor cavity. The fast neutron fluence at elevations above and below the active fuel (e.g., grid plates, nozzles) is also addressed in this standard. This evaluation employs both fast neutron flux computations and measurement data from in-vessel and cavity dosimetry, as appropriate. This standard applies to both pressurized water reactors and boiling water reactors.

Suggested vehicles for adoption:

- None

DOE representatives on the working group:

- F. Arzu Alpan, Oak Ridge National Laboratory
- Robert C. Little, Los Alamos National Laboratory
- Joel M. Risner, Oak Ridge National Laboratory

DOE representatives on the consensus committee when approved:

- F. Arzu Alpan, Oak Ridge National Laboratory
 - Donald J. Dudziak, Los Alamos National Laboratory
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ANSI/ANS-54.8-2025, *Liquid Metal Fire Protection in LMR Plants*, (new standard/resurrection of ANS-54.8-1988) received ANSI approval September 2, 2025. The purpose of this standard is to establish guidelines and requirements to ensure that the functional performance of the liquid metal fire detection, alarm, suppression, control, and structural protection systems is adequate to protect the health and safety of the public and plant personnel, and to minimize or limit the economic loss in the event of a sodium/NaK leak.

Suggested vehicles for adoption:

- None

DOE representatives on the working group:

- Matthew D. Bucknor (Chair), Argonne National Laboratory
- Derek Kultgen, Argonne National Laboratory
- Anton Moiseyev, Argonne National Laboratory

DOE representatives on the consensus committee when approved:

- Gale E. Hauck (Chair), Oak Ridge National Laboratory
 - Jason P. Andrus (Vice Chair), Idaho National Laboratory
 - Bruce B. Bevard, Oak Ridge National Laboratory
 - Matthew D. Bucknor, Argonne National Laboratory
 - David R. Lawson, U.S. Department of Energy
 - D. Sean O'Kelly, Idaho National Laboratory
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Sixteen American National Standards were reviewed and found to remain sufficiently current for reaffirmation (reapproval without change) since our last letter. A list of recently reaffirmed standards is provided as Attachment 1 to this letter. Electronic copies of recently reaffirmed standards are available upon request.

We are available to discuss and resolve any questions the staff may have during the review process. Please feel free to contact me or Pat Schroeder, ANS standards manager, by e-mail at pschroeder@ans.org or by telephone at 708-579-8269.

Sincerely,



Andrew Sowder, Ph.D., CHP
ANS Standards Board Chair

Attachments:

1. List of Recently Reaffirmed Standards (page 5 of letter)
2. ANSI/ANS-8.20-2025
3. ANSI/ANS-19.10-2025
4. ANSI/ANS-54.8-2025

Cc: Todd Anselmi, Idaho National Laboratory, ANS Standards Board Vice-Chair
Larry Perkins, U.S. Department of Energy
Gale Hauck, Oak Ridge National Laboratory, RARCC Chair
Andrew Smetana, Individual, SRACC Chair
Larry Wetzel, Consultant, NCSCC Chair
Jason Andrus, Idaho National Laboratory, Advanced Reactor Subcommittee Chair
Douglas Bowen, Oak Ridge National Laboratory, ANS-8 Subcommittee Chair
Dimitrios Cokinos, Individual, ANS-19 Subcommittee Chair
Deborah Hill, UK National Nuclear Laboratory, ANS-8.20 Chair
Kelsey M. Amundson, Los Alamos National Laboratory, ANS-8.20 member
Theresa Cutler, Los Alamos National Laboratory, ANS-8.20 member
Thomas J. Marenchin, U.S. Department of Energy, ANS-8.20 member
Catherine G. Percher, Lawrence Livermore National Laboratory, ANS-8.20 member
Larry J. Berg, U.S. Department of Energy, NCSCC member
Kermit A. Bunde, U.S. Department of Energy, NCSCC member
James A. Miller, Sandia National Laboratories, NCSCC member
Alireza Haghighat, Virginia Tech, ANS-19.10 Chair
F. Arzu Alpan, Oak Ridge National Laboratory, ANS-19.10 member & SRACC member

Robert C. Little, Los Alamos National Laboratory, ANS-19.10 member
Joel M. Risner, Oak Ridge National Laboratory, ANS-19.10 member
Donald J. Dudziak, Los Alamos National Laboratory, SRACC member
Matthew Bucknor, Argonne National Laboratory, ANS-54.8 Chair & RARCC member
Derek Kultgen, Argonne National Laboratory, ANS-54.8 member
Anton Moiseyev, Argonne National Laboratory, ANS-54.8 member
Bruce B. Bevard, Oak Ridge National Laboratory, RARCC member
David R. Lawson, U.S. Department of Energy, RARCC member
D. Sean O'Kelly, Idaho National Laboratory, RARCC member

ATTACHMENT 1 – List of Recently Reaffirmed Standards*

1. ANSI/ANS-2.2-2016 (R2025), *Earthquake Instrumentation Criteria for Nuclear Power Plants* (reaffirmed June 2, 2025)
2. ANSI/ANS-2.23-2016 (R2025), *Nuclear Power Plant Response to an Earthquake* (reaffirmed June 2, 2025)
3. ANSI/ANS-2.27-2020 (R2025), *Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments* (reaffirmed April 15, 2025)
4. ANSI/ANS-2.29-2020 (R2025), *Probabilistic Seismic Hazard Analysis* (reaffirmed March 25, 2025)
5. ANSI/ANS-6.1.1-2020 (R2025), *Photon and Neutron Fluence-to-Dose Conversion Coefficients* (reaffirmed August 7, 2025)
6. ANSI/ANS-6.3.1-1987 (R2025), *Program for Testing Radiation Shields in Light Water Reactors* (reaffirmed August 7, 2025)
7. ANSI/ANS-6.6.1-2015 (R2025), *Calculation and Measurement of Direct and Scattered Radiation from LWR Nuclear Power Plants* (reaffirmed March 11, 2025)
8. ANSI/ANS-10.8-2015 (R2025), *Non-Real Time, High Integrity Software for the Nuclear Industry—User Requirements* (reaffirmed July 29, 2025)
9. ANSI/ANS-8.27-2015 (R2025), *Burnup Credit for LWR Fuel* (reaffirmed September 15, 2025)
10. ANSI/ANS-18.1-2020 (R2025), *Radioactive Source Term for Normal Operation of Light Water Reactors* (reaffirmed September 2, 2025)
11. ANSI/ANS-54.1-2020 (R2025), *Nuclear Safety Criteria and Design Process for Sodium Fast Reactor Nuclear Power Plants* (reaffirmed April 15, 2025)
12. ANSI/ANS-57.8-2020 (R2025), *Fuel Assembly Identification* (reaffirmed June 30, 2025)
13. ANSI/ANS-58.16-2014 (R2025), *Safety Categorization and Design Criteria for Nonreactor Nuclear Facilities* (reaffirmed May 5, 2025)
14. ANSI/ANS-58.9-2002 (R2025), *Single Failure Criteria for Light Water Reactor Safety-Related Fluid Systems* (reaffirmed July 29, 2025)
15. ANSI/ANS-59.51-1997 (R2025), *Fuel Oil Systems for Safety-Related Emergency Diesel Generators* (reaffirmed June 12, 2025)
16. ANSI/ANS-59.52-1998 (R2025), *Lubricating Oil Systems for Safety-Related Emergency Diesel Generators* (reaffirmed June 12, 2025)

**Electronic copies of recently reaffirmed standards available upon request.*