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Rich Porco, Chair
ASME Board on Nuclear Codes and Standards (BNCS)
Two Park Avenue
New York, NY 10016-5990

Steven Arndt, Chair
ANS Standards Board
American Nuclear Society
555 N. Kensington Avenue, La Grange Park, IL 60526

Dear Mr. Porco and Mr. Arndt,

The U.S. Nuclear Regulatory Commission (NRC) values the productive relationship we have established with the American Society of Mechanical Engineers (ASME) and American Nuclear Society (ANS) over the last 20 years. The Probabilistic Risk Assessment (PRA) standards developed under the auspices of the ASME/ANS Joint Committee on Nuclear Risk Management (JCNRM) have been a key enabler to the success of the NRC's licensing and risk-informed regulatory programs and have resulted in improvements to safety and increased the efficiency of our regulatory programs. Currently, several PRA standards are being developed and maintained by the ASME/ANS JCNRM that are of great interest to the NRC.

These standards include:

- ASME/ANS RA-S-1.1: The new edition for the Level 1/Large Early Release Frequency (LERF) PRA standard addresses at-power conditions and all hazards for operating light water reactors (LWRs). This new edition is scheduled to be finalized in 2020 and issued as an American National Standard Institute (ANSI) standard. The NRC considers the completion of this standard to be a high priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2020 would be most useful to the agency.
- ASME ANS RA-S-1.2: The Level 2 PRA standard addresses all operating modes and hazards for operating LWRs. This standard has been issued for trial use, has undergone pilot applications (one pilot being the NRC Level 3 PRA project) and is being finalized in the next year to be issued as an ANSI standard. The NRC considers the completion of this standard to be a high priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2020 would be most useful to the agency.

- ASME/ANS RA-S-1.3: The Level 3 PRA standard addresses all operating modes and hazards for operating LWRs. This standard has been issued for trial use and is currently being piloted (one pilot being the NRC Level 3 PRA project). The NRC considers the completion of this standard to be a medium priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2021 would be most useful to the agency.
- Appendix to ASME/ANS RA-S-1.1: The Level 1/LERF PRA standard addresses low power and shutdown conditions for both internal and external hazards for operating LWRs. This standard has been issued for trial use, has undergone pilot applications and is being finalized to be issued in the next year as an ANSI standard. The NRC considers the completion of this standard to be a lower priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2021 would be most useful to the agency.
- Appendix to ASME/ANS RA-S-1.1: The Level 1/Level 2 PRA standard addresses advanced LWRs during the design certification (DC), combined license (COL), and preconstruction stages. This standard is being prepared to be issued for trial use this year. The NRC considers the completion of this standard to be a low priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2021 would be most useful to the agency.
- ASME/ANS RA-S-1.4: The Level 1/Level 2/Level 3 PRA standard addresses all operating modes and hazards for non-LWRs for design, preconstruction, preoperation, and operating stages. This standard has been issued for trial use, has undergone pilot applications and being finalized to be issued in the next year as an ANSI standard. The NRC considers the completion of this standard to be a high priority. To better support ongoing regulatory guidance development, issuance of the final standard by 2020 would be most useful to the agency.

These standards are important to both the NRC, industry and other stakeholders since they facilitate risk-informed activities and give the needed confidence that the results from a PRA can be used in the associated activity. Therefore, the timeliness of these standards is an important issue and helps the NRC better develop guidance that can provide timely endorsement of these standards.

With regard to risk-informed activities, for operating reactors, numerous activities are ongoing and their number is anticipated to increase. The new edition (i.e., RA-S-1.1) will ensure an expeditious path for these activities. Similarly, for advanced LWRs, the appendix to RA-S-1.1 is instrumental. These standards also serve as input to the non-LWR standard. Moreover, Congress recently passed the Nuclear Energy Innovation and Modernization Act, where under Title 1, Advanced Nuclear Reactor and User Fees, in Sec.103. Advanced Nuclear Reactor Program, it states

(iii) collaboration with standards-setting organizations to identify specific technical areas for which new or updated standards are needed and providing assistance if appropriate to ensure the new or updated standards are developed and finalized in a timely fashion;

(iv) the incorporation of consensus-based codes and standards developed under clause (iii) into the regulatory framework—

- (I) to provide predictability for the regulatory processes of the Commission; and*
- (II) to ensure timely completion of specific licensing actions*

The Act identifies the need for a standard and that they be developed and finalized in a timely fashion. NRC plans to start the non-LWR standard review and development of its regulatory guide in early 2020 to support near-future non-LWR license applications. To facilitate this process “to ensure timely completion of specific licensing actions,” a PRA standard is needed. Therefore, it is imperative that the trial use non-LWR PRA standard be finalized and issued as quickly as possible. The LWR Level 1/LERF and Level 2 PRA standards are also identified as high priority because they provide significant input to the non-LWR PRA standard. The Level 3 and low power shutdown PRA standards provide less significant input to the non-LWR PRA standard (Level 3 and low power shutdown), so these are ranked with medium or lower priority.

These standards play a key role in the success of regulatory risk-informed activities. As such, the NRC has and will continue to support JCNRM to help ensure an expeditious path forward in issuing the above standards.

If you have any questions, please contact Mary Drouin who is the NRC representative on the JCNRM, or her alternate, Anders Gilbertson. You can reach them at, 301-415-2091 (mary.drouin@nrc.gov) and 301-415-1541 (anders.gilbertson@nrc.gov), respectively.

Sincerely,

/RA/

Brian E. Thomas
NRC Standards Executive
Office of Nuclear Regulatory Research

cc:

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SUBJECT: This letter is to communicate to the American Society of Mechanical Engineers (ASME) and the American Nuclear Society (ANS) the U.S. Nuclear Regulatory Commission (NRC) views with regard to the Probabilistic Risk Assessment (PRA) standards that are being developed and maintained by the ASME/ANS Joint Committee on Nuclear Risk Management (JCNRM).

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