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November 26, 2019

Ms. Louise Lund
NRC Standards Executive
US Nuclear Regulatory Commission
Washington DC 20555

Dear Ms. Lund,

The purpose of this letter is to inform you of a situation relative to the proposed NRC endorsement of the current ASME/ANS non-LWR Standard. The undersigned are the co-chairs of the Joint Committee on Nuclear Risk Management (JCNRM), the ANS-ASME (American Nuclear Society and American Society of Mechanical Engineers) standards consensus committee that develops and maintains standards for probabilistic risk assessment (PRA). As background, the NRC has endorsed our Level 1 LWR PRA standard in Regulatory Guide 1.200 and has indicated that they wish to endorse the current version of the non-LWR PRA standard entitled “Probabilistic Risk Assessment Standard for Advanced Non-LWR Nuclear Power Plants.” However, the current version of that standard is designated as a trial-use, pilot application (TUPA) standard, published in 2013 as Standard RA-S-1.4-2013. This means that the non-LWR standard is being piloted with a trial-use designation to identify issues or concerns relative to its clarity, intent, and use, prior to issuance as an American National Standards Institute (ANSI) approved standard.

The JCNRM met in Bethesda recently, on 26 September 2019, preceded by three days of meetings of each of the JCNRM’s subcommittees and working groups. During those meetings, the JCNRM had the benefit of discussions with several members of the NRC staff about the JCNRM’s current work to develop and publish a final version of the non-LWR PRA standard.

In the intervening years since the JCNRM published this standard for trial use in 2013, there have been several trial uses of parts of it, some domestic and some abroad, and those trial-use efforts were performed on several quite different non-LWR reactor technologies. Insights gained from those trials have been very valuable as foundations for the next steps that are necessary to finalize this standard. Other important insights to support the finalization work have been identified based on experience with several of the JCNRM’s other PRA standards.

Building on that experience, the JCNRM has been working on preparing a version of this standard that is intended to be the “final” standard, meaning an “American National Standard,” issued by ASME and ANS under ANSI’s procedures.

In response to requests by both industry and NRC stakeholders, the JCNRM has recently given urgent priority to finalizing this standard. Although our schedule cannot be predicted precisely because the balloting and finalization process is always subject to uncertainty due to the need to resolve all comments, the JCNRM tentatively expects to ballot this standard in March 2020, with the aim to have it ready for pre-final-editing release to the NRC for its review by December 2020. This date, although uncertain for

the reasons just noted, represents our best expectation of when a version will exist that has been approved under all ASME, ANS, and ANSI procedures and that is technically not going to change, although it would still need to go through a final editing process that would not introduce any substantive changes.

The JCNRM has recently agreed to decouple the schedule for the non-LWR standard from the schedule for the next edition of the LWR standard because sufficient (although not complete) alignment and consistency between these standards has recently been achieved. This decision makes it possible to achieve the above tentative dates and thus support the NRC's PRA standard priorities.

During our recent JCNRM meeting, and again during an NRC staff briefing on October 2 for the ACRS's Subcommittee on Future Plant Designs, we learned that the NRC staff has been contemplating an endorsement in a new Regulatory Guide of the 2013 trial-use version of the non-LWR standard. The JCNRM is pleased that NRC is giving high priority to endorsing the non-LWR standard so that its use to support licensing of advanced non-LWRs can move forward. However, for reasons explained below, we oppose this plan to endorse the trial-use version of the standard and recommend instead that NRC should change its plan to endorse the projected 2020 version, which is to be balloted as an ANSI standard. This issue was fully discussed among all available stakeholders during our JCNRM meeting on 26 September, and a motion was made and passed, without dissent, directing the two JCNRM co-chairs to write this letter to you, explaining the rationale for this position and setting out the JCNRM's schedule for the non-LWR standard's finalization.

There are at least two different reasons why the JCNRM opposes the NRC's proposed endorsement of our 2013 non-LWR PRA trial-use standard.

First, when the JCNRM balloted and then issued the 2013 version, it was explicitly for trial use. At that time there was insufficient experience to justify issuing an ANSI standard. This was because that version of the standard was only supported by PRAs on high-temperature gas reactors and sodium-cooled fast reactors and the scope of requirements covered in the standard extended beyond industry practice. That version of the non-LWR standard would not have passed the JCNRM balloting process if it were not for the fact that it was a trial-use standard. It was broadly recognized that additional learning and pilot testing were necessary in order to get essential feedback to improve the standard.

Second, the requirements developed for low power and shutdown states, mechanistic source terms and radiological consequences included in that 2013 non-LWR standard were issued before the LWR supporting standards on LPSD PRA, Level 2 PRA, and Level 3 PRA had even been issued for trial use. The decision to issue the non-LWR standard for trial use was based on our judgment that although the standard was not yet "ready for prime time," it was an excellent start on the long task of preparing a fully acceptable standard and was sufficient for trial-use applications. Each of these other TUPA standards is being finalized over the next two years, but each will have significant changes from the original drafts used by the non-LWR standard. In summary, the judgment of the JCNRM was that the non-LWR trial-use standard, when issued in 2013, was technically ready for trial use but was far from mature enough to be considered ready for routine use or for regulatory endorsement.

Indeed, if somebody in 2013 had told the JCNRM that the trial-use non-LWR standard would be endorsed some day in the future by the NRC, the two of us (Budnitz and Grantom) believe that a strong majority of the JCNRM would not have voted to issue it for trial use. For the NRC to endorse it now would be to disregard our original concerns and agreements with the JCNRM, including its regulatory representatives. Also, an NRC endorsement of any of our trial-use standards would likely produce a strong chilling effect on our JCNRM's willingness to issue any future standard in preliminary form for trial use. It should be noted that trial-use publication is highly desirable because important feedback and lessons learned result from each trial-use effort.

For the above reasons, we, writing for the JCNRM, believe that NRC's plan to endorse this trial-use standard in a Regulatory Guide should be reconsidered. As noted, (i) it would be a significant and possibly irrecoverable deviation from our JCNRM process, which resulted in issuing the 2013 trial-use version with an explicit recognition that it was not yet technically mature. (ii) It would also be an important disservice to the vendors who are now developing advanced non-LWR designs seeking NRC regulatory approval. This is because NRC endorsement carries not only prestige, but in the past has been seen by many in the industry as an imperative to use the endorsed standard in various NRC regulatory applications. And (iii) NRC endorsement would also send a strong signal to the PRA community that would almost surely result in that community's opposing the approval of any future JCNRM standard for trial use. This is because of the concern that the NRC could end up endorsing that trial-use standard at some future time – a chilling effect if there ever was one.

As an alternative to endorsing the 2013 non-LWR standard, the JCNRM recommends that the NRC alter its plan and prepare to endorse the 2020 version of the non-LWR standard. As noted above, it is anticipated that this version will be available in December 2020 for NRC technical review, although non-technical editing will occur soon thereafter. The steps that the JCNRM recently took to expedite the non-LWR standard's schedule were taken to support this recommendation.

We hope that this letter explains the situation clearly; however, if there are any questions or if further discussion is needed, then please feel free to contact either co-chair or the JCNRM's ASME or ANS secretaries.

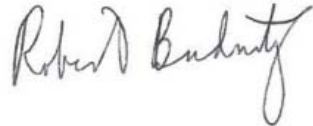
Sincerely,



Oliver Martinez
ASME Secretary, JCNRM



C. Rick Grantom, P.E.
ASME Co-Chair, JCNRM



Robert J. Budnitz
ANS Co-Chair, JCNRM

CC: *John Monninger, Director, Division of Advanced Reactors,
NRC Office of Nuclear Reactor Regulation
Michael Cheok, Director, Division of Risk Analysis,
NRC Office of Nuclear Regulatory Research
Michael Franovich, Director, Division of Risk Assessment,
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