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Utah Associated Municipal Power Systems

SMARTENERGY

June 27, 2017

ATTN: Rulemakings and Adjudications Staff
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

Submitted via Regulations.gov

SUBJECT: **Comments on *Draft Regulatory Basis Document for Rulemaking for Emergency Preparedness for Small Modular Reactors and Other New Technologies* (Rulemaking Docket No. NRC-2015-0225)**

Utah Associated Municipal Power Systems ("UAMPS") offers these comments on the *Draft Regulatory Basis Document for Rulemaking for Emergency Preparedness for Small Modular Reactors and Other New Technologies* ("Draft Regulatory Basis"). The U.S. Nuclear Regulatory Commission ("NRC") has requested comments on the Draft Regulatory Basis for the rulemaking by June 27, 2017.[1]

UAMPS is a political subdivision of the state of Utah that provides comprehensive wholesale electric energy, transmission, and other energy services on a non-profit basis to community-owned power systems throughout the intermountain West. UAMPS serves 46 members, mostly municipalities, in six states, including Utah, California, Idaho, Nevada, New Mexico, and Wyoming. UAMPS provides comprehensive energy services to its members, including planning, financing, developing, acquiring, constructing, operating and maintaining varied projects and transmission for the benefit of members.

UAMPS is a leader in the effort to realize next generation, zero-carbon baseload power generation in the United States. It is investigating the possible submission to the NRC of a combined license ("COL") application for a small modular reactor ("SMR") facility to be located at the U.S. Department of Energy's ("DOE's") Idaho National Laboratory ("INL") near Idaho Falls. UAMPS is working with NuScale Power ("NuScale") as the technology supplier for this SMR project. NuScale submitted a design certification application to the NRC in January 2017.

As an initial matter, we appreciate the NRC's effort to reevaluate and modernize its Emergency Preparedness ("EP") framework in light of the new types of nuclear reactors that are being envisioned. The inherent safety features of SMRs and other next-generation reactors,[2] including below-ground siting and passive cooling capabilities, mean that the consequences of an emergency can in most cases be limited to the site itself or nearby proximity. We agree with the Commission

[1] "Emergency Preparedness for Small Modular Reactors and Other New Technologies, Draft Regulatory Basis; Public Meeting, and Request for Comment," 82 Fed. Reg. 17768 (Apr. 13, 2017).
[2] This rulemaking covers EP requirements for SMRs and "Other New Technologies." We understand "Other New Technologies" to include non-light water (a.k.a. "advanced") reactors and medical isotope reactors. We refer to SMRs and "Other New Technologies" generally as "next-generation reactors."

that this rulemaking will provide more clarity, stakeholder input, and stability on the EP framework for next-generation reactors.[3]

We support the work done to date by the Nuclear Energy Institute ("NEI") to develop a path forward for modernizing the NRC's EP framework, including (i) defining emergency planning zones ("EPZs") using a dose/distance approach based on appropriate protective action guidelines established by Federal agencies, and (ii) eliminating unnecessary EP requirements when an EPZ is determined to be entirely within the plant site. UAMPS also notes that Mayors of communities in Eastern Idaho near the INL site have submitted comments broadly supportive of the NRC's efforts to reform its EP requirements for SMRs. The Mayors' comments demonstrate local government support for the deployment of SMR technology in the area.

In addition to the above, we offer four specific comments from our perspective, particularly in our role as possibly the first COL applicant for a next-generation reactor. These comments are not meant to be prescriptive edits, but are instead designed to raise issues that could help shape a proposed, and eventually final, EP rule.

In brief, we suggest that in revising the Regulatory Basis Document the NRC:

1. Reemphasize the role of "risk-informed" considerations in the EP rulemaking;

2. Further develop regulatory reform options for small EPZs just outside the site boundary;

3. Clarify how co-location of facilities could affect EP development and EPZ size; and

4. Clarify the areas to be considered in the EP rulemaking.

Comment 1: Reemphasize the Role of "Risk-Informed" Considerations in the EP Rulemaking

As commented on by industry at the May 10, 2017 public meeting, the Draft Regulatory Basis excludes serious discussion of "risk-informed" considerations for the EP rulemaking. For example, while the draft document states around fifty times that any future EP rule will be "performance-based," the phrase "risk-informed" appears only twice, in secondary areas.

The development of a risk-informed EP framework is of critical importance to UAMPS. The NuScale SMR design certification application and topical reports demonstrate an extremely low accident risk, and that engineered safety features will further reduce accident consequences. These findings "suggest that the EPZ for a NuScale plant can be significantly smaller while providing the same public protection and safety against radiological accidents."[4]

We understand that the NRC staff at the May 10 public meeting indicated that leaving out "risk-informed" from the Draft Regulatory Basis was unintended, and that the general EP reform effort is

[3] *See* SECY-15-0077, "Voting Record, Options for Emergency Preparedness for Small Modular Reactors and Other New Technologies" (Aug. 4, 2015).
[4] *See* Topical Report TR-0915-17772, "Methodology for Establishing the Technical Basis for Plume Exposure Emergency Planning Zones at NuScale Small Modular Reactor Plant Sites" at 14 (Rev. 0, Dec. 22, 2015) (ADAMS Accession No. ML15356A842); *see also* NuScale NRC Design Certification Application, Chs. 15, 19 (Rev. 0, Dec. 2016).

risk-informed. While reassuring, it is also important that regulatory documents themselves weave this concept into the text and acknowledge its primary role.

As an example, Section 3.2 of the Draft Regulatory Basis states that the NRC staff will consider "a wide spectrum of potential accidents for the facility," including beyond-design basis events—but then leaves out further clarification. It is therefore not clear from the document alone if the NRC staff will incorporate risk-informed concepts into its determination of accident scenarios. The final EP rule should make clear that the NRC will only review those accident scenarios that have a meaningful risk profile, taking advantage of probabilistic risk analyses ("PRAs") wherever possible.[5] The agency in this regard can look not just to the NEI White Papers, but also to NuScale topical report TR-0915-17772, "Methodology for Establishing the Technical Basis for Plume Exposure Emergency Planning Zones at NuScale Small Modular Reactor Plant Sites," for its risk-informed analysis of various accident scenarios.

Comment 2: Further Develop Regulatory Reform Options for Small EPZs Just Outside the Site Boundary

We support the NRC's openness to the possibility that next-generation reactors can have EPZs within the plant site boundary, and we encourage the agency to keep pushing towards this end. However, the Draft Regulatory Basis and comments from the May 10, 2017 public meeting show that there is still more to do in terms of developing an efficient EP regulatory framework for those cases in which the EPZ is slightly beyond the site boundary.

This is best emphasized by examining the rulemaking's cost and impact analysis located in Section 5 of the Draft Regulatory Basis. The analysis makes clear that the majority of savings from the EP rulemaking come from reduced operational costs (siren maintenance; federal, state and local fees; etc.). As shown in Table 5-3, when the EPZ is assumed to be at the site boundary, the savings prescribed by the rulemaking are immense, on the order of $600 million assuming a 3% discount rate. However, when the EPZ is outside of the site boundary, even just slightly, the analysis assumes *all* these operational savings disappear.[6] The Draft Regulatory Basis even concludes that the exemption requests sought to be eliminated by a rulemaking cannot be avoided, "as the rulemaking would not be able to consider all possible plume exposure pathway EPZ size scenarios." In the end, the document essentially takes the position that the primary savings that will come from having a reduced, but not eliminated, offsite EPZ will be in the form of having to install fewer sirens.[7]

We understand that the NRC staff took this approach in its cost and impact analysis in order to be conservative, but we believe more can be done to reimagine an EP framework for very small offsite EPZs. This includes drafting rules that move beyond eliminating requirements when an EPZ is within a site boundary, but also identifying circumstances where a requirement can be made more flexible when an EPZ extends a small distance from a site boundary and into a restricted or unoccupied area. For example, the NRC staff should consider as part of the next phase of the rulemaking:

[5] Elsewhere in the Draft Regulatory Basis, at Section 3.5, the NRC staff endorses the use of PRA to evaluate the true risk of multi-module accidents, rather than prescriptively assuming unrealistic scenarios.
[6] In scenarios where the EPZ extends beyond the site boundary, "to be conservative, the costs listed in Table 5-3 are no longer considered averted costs." Draft Regulatory Basis at pg. 5-4.
[7] *See id.* at pg. 5-4, tbl. 5-8.

- Evaluating whether the full set of notification requirements and analyses outlined in 10 C.F.R. § 50.47 and Part 50 Appendix E are still useful when an EPZ extends a short distance beyond a site border, but covers an area which is restricted or unoccupied (in the case of UAMPS or other reactor projects that choose to site at INL, any offsite EPZ would also likely lie within an access-controlled DOE site in which the public is not allowed to enter); and

- Evaluating whether an emergency operations facility is necessary where there is a small offsite EPZ that protrudes only into a restricted DOE or U.S. Department of Defense area.

These are requirements that would seemingly be dropped if an EPZ is located within a site boundary,[8] but otherwise would be kept in their original form if an EPZ protrudes just beyond the site boundary. This reflects a deterministic approach that is not risk-informed. The public risk does not rise dramatically when an EPZ extends only a short distance beyond a site boundary compared with when it is at the site boundary. Such an approach also fails to provide for transparency and regulatory stability, which were key reasons the Commission endorsed this rulemaking effort.[9]

While some of the above discussion may in the end be best suited for a site-specific application, these themes should also be considered as part of the rulemaking. For example, as previously mentioned, the Draft Regulatory Basis currently envisions that exemption requests will be required by next-generation reactor applicants if an EPZ extends beyond the site boundary.[10] Relying on exemptions for a licensing process is not desirable when there is time to adjust the base requirements. The NRC may be able to obviate much of the need for exemption requests by making the EP regulations less prescriptive, giving applicants more leeway within their site-specific applications to justify a certain EP approach.[11]

Comment 3: Clarify How Co-Location Could Affect EP Development and EPZ Size

The NRC staff recognized back in 2011 "that an EP framework will need to consider the impacts of SMRs of the same type being collocated with large reactors, industrial facilities, different SMR types, or any combination of these."[12] However, the Draft Regulatory Basis does not add significant clarification on this matter. As stated in Section 3.4 of the Draft Regulatory Basis:

> SMRs and ONTs of the same type may be co-located together on the same site or with large reactors, at industrial facilities, with different reactor types, or any combination of the above. The policy issues associated with co-location include the

[8] *See* Nuclear Energy Institute, "White Paper: Proposed Emergency Preparedness Regulations and Guidance for Small Modular Reactor Facilities" (July 2015), Attachs. 2–3.
[9] *See* SECY-15-0077, Voting Record.
[10] Draft Regulatory Basis at pg. 5-4.
[11] Given the number of next-generation reactors that could be sited at DOE facilities, it may be worth exploring as part of this rulemaking how DOE site workers should be treated from an EP perspective. For initial insights, the NRC staff could turn to the license application and safety evaluation report for the Mixed Oxide Fuel Fabrication ("MOX") Facility, which is being constructed at the DOE Savannah River Site. *See* "Mixed Oxide Fuel Fabrication Facility License Application" (Redacted) § 5.2.3 (Jan. 2015 Rev.) (ADAMS Accession No. MI15029A088); NUREG-1821, "Final Safety Evaluation Report on the Construction Authorization Request for the Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina" (Mar. 2005) (ADAMS Accession No. ML050960447).
[12] SECY-11-0152, "Development of an Emergency Planning and Preparedness Framework for Small Modular Reactors," at 6 (Oct. 28, 2011).

> need for guidance on the effect on EP of co-location, on the size of the EPZ, number of control rooms, staffing, training, and interaction with other co-located facilities.

The Draft Regulatory Basis also adds, vaguely, on page 4-3 that the hazards from co-located facilities may affect EP planning for the applicant facility. The NRC staff appears to have deferred further exploration of this question in part because potential applicants have not indicated that co-location will be a significant concern for their future reactor projects.[13]

As a potential COL applicant, UAMPS is concerned with this issue and would benefit from additional clarity in this area. UAMPS was the first organization to sign a site use permit with DOE for building an SMR facility on INL property.[14] Since then, other reactor designers have expressed interest in building at INL, each with different risk profiles and staffing requirements.[15] Co-location issues can arise for developers, for example, if reactor projects are sited adjacent to each other, or if INL facilities are located next to a reactor project.

Apart from INL, NuScale envisions co-location of its SMRs at the sites of retiring coal or gas fired power plants.[16] Co-location at or alongside retired or partially retired power plants carries significant potential, because the site is already brownfield, has an educated worker base, and has pre-developed grid and water connections and communications. How the NRC staff addresses co-location in this rulemaking may set the stage for how co-location is addressed generally as NuScale and other reactor vendors expand to other locations.

Therefore, it is important that the proposed EP rule further develop what the NRC staff means by "co-location," why and how co-location will affect EP requirements or EPZ size, and how any additional requirements on applicants are risk-informed and performance-based. It is also important as part of the proposed rule to explain the dividing line between what is a purely hypothetical project, and what is a project that should be considered for EP purposes. Clarification here will assist potential applicants in future planned license applications to the NRC.

In addressing this comment, we recommend that the NRC steer away from analogies to the National Environmental Policy Act ("NEPA"). In the May 10 public meeting, NRC staff commented that the agency could look to NEPA to answer some of these scoping-type questions. NEPA, however, a *procedural* statute, is not relatable to the current initiative. NEPA requires the consideration of all "reasonably foreseeable" environmental effects of a planned action, including cumulative effects.[17] NEPA is designed to err on the side of being overly broad in scope, because it is a procedural statute whose purpose is to make sure an agency decision maker has everything he or she could need to act on a project.[18] NEPA's scoping provisions are not intended to extend beyond the

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[13] *Id.*

[14] Press Release, "DOE Office of Nuclear Energy, Department of Energy Continues Commitment to the Development of Innovative Small Modular Reactors" (Feb. 18, 2016), https://www.energy.gov/ne/articles/department-energy-continues-commitment-development-innovative-small-modular-reactors.

[15] "Small Modular Reactor Possibilities Expand," POST REGISTER (May 4, 2017), http://www.postregister.com/articles/featured-news-daily-email/2017/05/04/small-modular-reactor-possibilities-expand.

[16] *The Changing Role of Coal in Electrical Generation*, NUSCALE POWER, http://www.nuscalepower.com/why-smr/coal-plant-replacement (last visited June 23, 2017) (noting that "SMRs are ideally suited to replace retiring coal plants").

[17] *See* 40 C.F.R. § 1508.8.

[18] *Grunewald v. Jarvis*, 776 F.3d 893, 903 (D.C. Cir. 2015); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

information-collecting realm—NEPA is "not intended to resolve fundamental policy disputes" or set substantive requirements.[19]

Instead, keeping in mind the risk-informed framework that is to govern the EP rulemaking, any final rule should only require consideration of co-located projects that have a realistic chance of being sited in proximity to the applicant's reactor project, for example where they have indicated such intent in a license application to the NRC. Moreover, any final rule should only add requirements if they are shown to produce a meaningful safety benefit. If co-location does not create any real hazard from a risk-informed, performance-based standpoint, new requirements would not be warranted.

Comment 4: Clarify the Areas To Be Considered in the EP Rulemaking

The NRC staff in the April 13 *Federal Register* notice[20] requested comments from responders as to the scope of the Draft Regulatory Basis. To this end, we believe it would be useful to clarify the second half of Section 3.6 of the Draft Regulatory Basis. This section lists aspects of the EP framework that "are expected to remain unchanged or revised appropriately from the current approach." It is not clear what this sentence means. This statement may benefit from further clarification because the Draft Regulatory Basis then proceeds to list a number of general topics, including "[n]otification requirements to Federal, State, and local authorities," "[d]rills and exercises demonstrating EP performance," and "[a]ppropriate public alert and notification methods."

These may be appropriate areas for improvements as part of this rulemaking. For example, NEI has proposed changes to the public notification requirements located in 10 C.F.R. Section 50.47 and Appendix E, Section IV, particularly for those cases where a reactor has an EPZ within a site boundary.[21] For Appendix E, Section IV.B, which concerns "*emergency action levels* that are to be used as criteria for determining the *need for notification* and participation of local and State agencies, the Commission, and other Federal agencies," NEI has proposed a new footnote be added stating that "[e]mergency action levels based on offsite monitoring are not required if the licensee's plume exposure Emergency Planning Zone boundary does not include any offsite area."[22] In line with NEI's comment, the Draft Regulatory Basis should recognize that changes in the current notification requirements and other areas could be appropriate as part of this rulemaking.

Therefore, Section 3.6 of the Draft Regulatory Basis may benefit from further clarification as to what is within the scope of the EP rulemaking.

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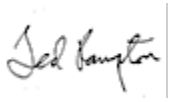
[19] *See Grunewald v. Jarvis*, 776 F.3d at 903 *(quoting Found. on Econ. Trends v. Lyng*, 817 F.2d 882, 886 (D.C. Cir.1987)) (internal quotation marks omitted).
[20] 82 Fed. Reg. at 17,769.
[21] *See* Nuclear Energy Institute, "White Paper: Proposed Emergency Preparedness Regulations and Guidance for Small Modular Reactor Facilities" (July 2015), Attachs. 2–3.
[22] *See id.*, Attach. 3 (emphasis added).

Thank you for the opportunity to provide comments on this important NRC initiative to help improve the licensing process for SMRs and other new technologies. Please do not hesitate to contact us or our outside nuclear counsel, Daniel F. Stenger at Hogan Lovells, using the contact information below if you have any questions.

Very truly yours,



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