UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-259-LA
TENNESSEE VALLEY AUTHORITY	)	50-260-LA
(Browns Ferry Nuclear Plant Units 1, 2, 3)	)	50-296-LA
	)	

TENNESSEE VALLEY AUTHORITY'S ANSWER OPPOSING PETITION FOR LEAVE TO INTERVENE AND REQUEST FOR HEARING

Pursuant to 10 C.F.R. § 2.309(i), the Tennessee Valley Authority ("TVA") respectfully submits its answer in opposition to the request for hearing and petition to intervene ("Petition") in the above-captioned matter, filed by the Bellefonte Efficiency and Sustainability Team and Mothers Against Tennessee River Radiation ("BEST/MATRR" or "Petitioner") on September 9, 2016.

For the reasons set forth below, BEST/MATRR has failed to proffer an admissible contention as required by 10 C.F.R. § 2.309(f). Specifically, the proposed contentions are outside the scope of this proceeding, do not raise issues material to the license amendment application, and constitute an impermissible challenge to a Commission rule or regulation in contravention of 10 C.F.R. § 2.335. For these reasons, the Petition should be rejected.

ARGUMENT

I. Background

In September 2015, TVA submitted its License Amendment Request ("LAR") seeking the approval of an extended power uprate for Browns Ferry Nuclear Plant, Units 1, 2, and 3. If approved, the license amendment would permit TVA to operate each of the three units at a new, steady-state reactor power level of 3,952 megawatts-thermal (MWt), approximately 14.3 percent above the current licensed power level of 3,458 MWt.

On July 5, 2016, the NRC published in the *Federal Register* a notice of opportunity to comment, request a hearing, and petition for leave to intervene for the Browns Ferry LAR, among others. *See* Applications and Amendment title, 81 Fed. Reg. 43661 (July 5, 2016) ("Hearing Notice"). The Hearing Notice set a deadline of September 6, 2016, for parties interested in filing requests for hearing. *See id.* The NRC's Office of the Secretary granted a filing extension to BEST/MATRR on September 6, 2016. Subsequently, on September 9, BEST/MATRR filed its Petition. *See generally* Petition at 1.

II. Legal Standards

A. Contention Admissibility

A contention must meet the admissibility requirements set forth in 10 C.F.R. § 2.309(f)(1). Specifically, each contention must (i) provide a specific statement of the legal or factual issue sought to be raised; (ii) provide a brief explanation of the basis for the contention; (iii) demonstrate that the issue raised is within the scope of the proceeding; (iv) demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding; (v) provide a concise statement of the alleged facts or expert opinions, including references to specific sources and documents that support the petitioner's

position and upon which the petitioner intends to rely; and (vi) provide sufficient information to show that a genuine dispute exists with regard to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1).

The Commission's rules on contention admissibility are "strict." *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-08, 75 NRC 393, 416 (2012); *see also Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsideration denied*, CLI-02-01, 55 NRC 1 (2002) (characterizing the contention admissibility rules as "strict by design"). Failure to comply with any one of the six admissibility criteria will result in a contention's rejection. *See, e.g.*, *Davis-Besse*, CLI-12-08, 75 NRC at 395. The Commission has consistently held that "the initial burden of showing whether the contention meets our admissibility standards" lies with the petitioner. *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-09-08, 69 NRC 317, 325 (2009). The failure of a petitioner to do so requires the Board to reject the proposed contention. *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 262 (1996). *See* 10 C.F.R. § 2.309(f)(1)(v).

The petitioner must explain the significance of any factual information upon which it relies. *See Fansteel, Inc.* (Muskogee, Okla., Site), CLI-03-13, 58 NRC 195, 204-05 (2003) (rejecting a contention regarding decommissioning funding assurance where petitioner relied on its brief reference to applicant's "Disclosure Statement and Reorganization" without explaining how that document undermined the applicant's assurance of funding). With respect to factual information or expert opinion proffered in support of a contention, "the Board is not to accept uncritically the assertion that a document or other factual information or an expert opinion

supplies the basis for a contention." *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181, *aff'd* CLI-98-13, 48 NRC 26 (1998).

The Commission's notice of opportunity for hearing establishes the scope of a proceeding. For a license amendment application, the scope is limited to "the amendment under consideration." Hearing Notice, 81 Fed. Reg. at 43663; *see also Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981). Any contention that falls outside the scope of the proceeding must be rejected. *See, e.g., Pacific Gas and Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-15-21, 82 NRC ___, ___ (Nov. 9, 2015) (slip op. at 12) ("A contention outside the scope of a proceeding is not admissible for hearing in that proceeding.").

The Commission has stated that the petitioner must "read the pertinent portions of the license application . . . state the applicant's position and the petitioner's opposing view," and explain why it disagrees with the applicant. *See Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001). If a petitioner believes the license application fails to adequately address a relevant issue, then the petitioner is to "explain why the application is deficient." *See Ariz. Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3), CLI-91-12, 34 NRC 149, 156 (1991). A contention that does not directly controvert a position taken by the applicant in the application is subject to dismissal. *See Tex. Utils. Elec. Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992), *vacated as moot*, CLI-93-10, 37 NRC 192 (1993). In order to raise a genuine dispute with an applicant's analysis, a petitioner must make at least a "minimal demonstration" that the "analysis fails to meet a statutory or regulatory requirement." *See*

Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 & 3), LBP-08-13, 68 NRC 43, 187 (2008).

An intervenor must either allege with particularity that an applicant is not complying with a specified regulation, or allege with particularity the existence and detail of a substantial safety issue on which the regulations are silent. In the absence of a "regulatory gap," the failure to allege a violation of the regulations or an attempt to advocate stricter requirements than those imposed by the regulations will result in a rejection of the contention, the latter as an impermissible collateral attack on the Commission's rules. *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), LBP-82-106, 16 NRC 1649, 1656 (1982), *citing* 10 C.F.R. § 2.335 (formerly § 2.758); PPL Susquehanna LLC (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 22 (2007).

A contention challenging the validity of an NRC regulation is generally inadmissible. *See* 10 C.F.R. § 2.335(a). *See also Exelon Gen. Co., LLC* (Limerick Generating Station, Units 1 and 2), CLI-13-07, 78 NRC 199, 206 (2013). Section 2.335(b) provides a limited exception to this prohibition, provided that a petitioner meets the four-part *Millstone* test. A § 2.335 waiver request must demonstrate that:

> (i) the rule's strict application would not serve the purposes for which it was adopted;
> (ii) special circumstances exist that were not considered, either explicitly or by necessary implication, in the rulemaking proceeding leading to the rule sought to be waived;
> (iii) those circumstances are unique to the facility rather than common to a large class of facilities; and
> (iv) waiver of the regulation is necessary to reach a significant safety problem.

Limerick, CLI-13-07, 78 NRC at 207–08. This standard is "stringent by design"; waiver can only be obtained if all four factors are met. *Id.* at 207.

III. BEST/MATRR's Proposed Contentions Do Not Meet the Contention Admissibility Requirements

A. Overview of BEST/MATRR's Contentions and Their Supporting Bases

BEST/MATRR offers three statements that it frames as "contentions":

> (1) "The EPUs for BFN Units 1, 2, and 3 must not be granted because the EXEM BWR-2000 Evaluation Model's LOCA calculations for "qualifying" the EPUs for BFN Units 1, 2, and 3 are scientifically indefensible."
>
> (2) "TVA has not scientifically demonstrated that at higher power levels (3,952 MWt) that in the event of a LOCA, at any of the BFN units, the PCT [peak cladding temperature] would not exceed the 10 C.F.R. § 50.46(b)(1) PCT limit of 2200°F."
>
> (3) "The health and safety of BEST/MATRR's members, as well as that of the general public, must not be threatened by scientifically indefensible EPUs for BFN Units 1, 2, and 3."

Petition at 29–30. The Petition and its supporting Declaration of Mark Leyse ("Declaration") provide a discussion of the various bases BEST/MATRR believes should be considered in support of these proposed contentions.

First, the Petition references three loss of coolant accident ("LOCA") analysis reports for AREVA ATRIUM 10XM and ATRIUM 10 fuel, prepared by AREVA to support the LAR. *See* Petition at 5–6. The Petition then recites information contained within those reports, including the peak cladding temperatures for AREVA fuels. *See id.* at 6. The Petition references the model used by AREVA for the analyses—EXEM BWR-2000—and the fact that the model has been approved by the NRC for use in reactor licensing. *See id.* at 7. The Petition then cites AREVA's statement that the model calculations were in accordance with 10 C.F.R. Part 50, Appendix K, including the use of the Baker–Just correlation, and satisfy the peak cladding temperature limits of 10 C.F.R. § 50.46. *See id.* at 8.

Next, the Petition provides a brief summary of the development of the Baker–Just correlation. *See id.* at 8. The Petition discusses experiments performed in connection with that correlation, and references a dialogue between the Petitioner's expert and an NRC official concerning the relationship between an NRC code (which apparently relies on the Baker–Just correlation) and an experiment conducted by Westinghouse. *See id.* at 9.

From here, the Petition introduces an extended discussion of earlier challenges to the Baker–Just correlation, offered by members of the Union of Concerned Scientists in the course of licensing Indian Point Unit 2. *See id.* at 10–19. The discussion mentions a range of historical topics, including additional experiments performed at the time of Indian Point Unit 2 licensing (circa 1971) and an allegation that a Westinghouse expert lied to the NRC in that proceeding. *See, e.g., id.* at 12–17. The Petition then reviews additional Westinghouse analyses before returning to the present day and providing brief narrative of the BEST/MATRR's expert's involvement in challenging the Baker–Just correlation through a series of petitions for rulemaking. *See, e.g., id.* at 23–24, 32.

The ultimate purpose of this wide-ranging discussion, repeated throughout the Petition, is to support the Petitioner's position that the Baker–Just correlation may not be appropriate for use in models such as AREVA's EXEM BWR-2000 model. *See, e.g., id.* at 9, 28. Thus, according to the Petition, the Appendix K requirement is itself "non-conservative." *Id.* at 28. Finally, the Petition asserts that this non-conservatism, on which the AREVA model is based, could result in the release of "large quantities of harmful radioactive material" if the Browns Ferry power levels are "set too high." Petition at 31.

B. The First Contention is Inadmissible

BEST/MATRR's first proposed contention states, "The EPUs for BFN Units 1, 2, and 3 must not be granted because the EXEM BWR-2000 Evaluation Model's LOCA calculations for "qualifying" the EPUs for BFN Units 1, 2, and 3 are scientifically indefensible." Petition at 29. This contention is inadmissible because it raises an issue that is outside the scope of this license amendment proceeding, fails to raise a genuine issue of material fact or law, and does not demonstrate that the issue raised is material to the findings the NRC must make to approve the license amendment request.

The entirety of BEST/MATRR's argument is built around the assertion that use of the Baker–Just correlation is "non-conservative." *See* Petition at 7. BEST/MATRR questions, for example, the validity of the experiments underlying the development of the required correlation, and states that this questionable validity "is evidence that the Baker–Just correlation is *likely* inadequate for use in computer safety models like AREVA's EXEM BWR-2000 Evaluation Model." *Id.* at 9. Likewise, the Petition discusses testimony given in the 1971 Indian Point license proceeding at length, reiterating the position taken by the Union of Concerned Scientists at the time that the Baker–Just correlation "is inadequate for use in computer safety models that simulate LOCAs." *Id.* at 12; *see generally id.* at 10–19. The Petition's discussion of NRC's TRACE code and a series of Westinghouse "FLECHT" experiments are also intended to convey that the Baker–Just correlation is "inadequate." *See id.* at 27, 28.

This represents, on its face, a challenge to the 10 C.F.R. Part 50 Appendix K *requirement* that models used in support of the LAR rely on the Baker–Just correlation. Indeed, the Petition itself recognizes that the use of this correlation is "required by Appendix K to Part 50 I.A.5." *Id.* at 9 (emphasis added). As such, any challenge to the use of the correlation in the

LAR is outside the scope of this proceeding. BEST/MATRR has not sought a waiver for this impermissible challenge to an NRC regulation as required by 10 C.F.R. § 2.335(b), or addressed the four *Millstone* factors that must be met for a waiver to be granted.

This contention does not raise a genuine issue of material fact or law with the license amendment request. The Petition barely makes mention of the LAR; it briefly summarizes the LOCA analyses submitted in support of the request, *see* Petition at 5–7, and later makes the unsupported claim that the peak cladding temperature "would exceed" the acceptance criteria in the event of a LOCA. *Id.* at 31. In summarizing TVA's LOCA analyses, however, the Petition does nothing more than restate the determination that these analyses were consistent with applicable regulatory requirements, in that the analyses conformed to 10 C.F.R. Part 50 Appendix K requirements and satisfy the emergency core cooling system requirements of 10 C.F.R. § 50.46. *See id.* at 7.

The Petition does not challenge or otherwise controvert the claims that the supplied analyses were performed in accordance with applicable regulatory requirements. Rather, the Petition spends the subsequent 20-odd pages attempting to challenge the 10 C.F.R. Part 50 Appendix K requirements themselves. Indeed, one could reasonably conclude that the Petition *agrees* that the analyses were conducted in conformance with the Appendix K I.A.5 requirement. In any case, at no point does the Petition "include references to specific portions of the application" in dispute, as required by 10 C.F.R. § 2.309(f)(1)(vi). Thus, the contention does not raise a genuine issue of material fact or law.

C. The Second Proposed Contention Is Inadmissible

BEST/MATRR's second proposed contention states, "TVA has not scientifically demonstrated that at higher power levels (3,952 MWt) that in the event of a LOCA, at any of the

BFN units, the PCT would not exceed the 10 C.F.R. § 50.46(b)(1) PCT limit of 2200°F." Petition at 30. This proposed contention is inadmissible because it fails to raise a genuine issue of material fact or law and lacks adequate factual or expert support.

First, the proposed contention fails to raise a genuine issue of material fact or law. In support of Contention 2, Petitioner does nothing more than reiterate the statements made by AREVA that the analyses were performed in accordance with the 10 C.F.R. Part 50 Appendix K requirements and satisfied (that is, would not exceed) the peak cladding temperature limit of 10 C.F.R. § 50.46(b). *See, e.g., id.* at 7.

The Petition does not controvert these statements. In order to raise a genuine dispute with an applicant's analysis, a petitioner must make at least a "minimal demonstration" that the "analysis fails to meet a statutory or regulatory requirement." *See Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 & 3), LBP-08-13, 68 NRC 43, 187 (2008). The Petition provides no such demonstration, no expert opinion or analyses to support its assertion that TVA has not "scientifically demonstrated" compliance with the PCT limits of 10 C.F.R. § 50.46(b). Again, Contention 2 is simply a generic challenge to the regulatory requirements in Appendix K, as discussed in Section III.B. Such a challenge is inadmissible.

Although the Petition includes a lengthy discussion of Petitioner's expert's view of the regulatory requirements found in 10 C.F.R. Part 50 Appendix K, nowhere in the Petition or the supporting Declaration does the Petition provide factual or expert support for Contention 2. TVA performed the analyses required by regulation and determined, using the AREVA EXEM BWR-2000 evaluation model, that the 10 C.F.R. § 50.46(b) acceptance criteria would be met. The Petition does not even attempt to demonstrate any deficiencies in these analyses.

The Petition's challenge to the 10 C.F.R. Part 50 Appendix K requirement culminates in the claim that the analyses TVA supplied "under-predict the PCTs that would occur" in the event of a LOCA. *See* Petition at 31. The Petition claims that, in the event of a LOCA, "PCT would exceed the 10 C.F.R. § 50.46(b)(1) limit" of 2200°F if the reactor power were set "too high," and then alleges a series of consequences that "would" follow. *Id.* Again, these bald assertions lack any factual or expert support: The Petition does not discuss or demonstrate how TVA's LAR-specific analyses under-predict peak cladding temperature, how this translates into Petitioner's certainty that these temperatures would exceed the regulatory limit, or indeed what power level Petitioner considers to be "too high." The claims amount to nothing more than speculation, and lack the requisite factual or expert support. Thus, the proposed contention is inadmissible.

D. The Third Proposed Contention is Inadmissible

BEST/MATRR's third proposed contention states, "The health and safety of BEST/MATRR's members, as well as that of the general public, must not be threatened by scientifically indefensible EPUs for BFN Units 1, 2, and 3." Petition at 30. This proposed contention is inadmissible because it lacks necessary specificity, fails to raise a genuine dispute of material fact or law, and lacks sufficient factual or expert support.

The bases for this proposed contention are essentially identical to the bases for Contention 1 and constitute an impermissible challenge to the NRC's 10 C.F.R. Part 50 Appendix K I.A.5 requirements. The Petition does not provide any basis for its assertion that the LAR is "scientifically indefensible," other than it disagrees with the requirements of Appendix K. The use of the term "scientifically indefensible" is a broad assertion that lacks any specificity, much less the specificity required for admissibility. Because it lacks such specificity and fails to controvert any part of the LAR, it also fails to raise a genuine dispute of material fact

or law.

This proposed contention likewise lacks factual or expert support. As discussed elsewhere, while the Petitioner's expert offers extensive commentary on the history of the 10 C.F.R. Part 50 Appendix K I.A.5 requirement to use the Baker–Just correlation, at no point does the Petition or the Declaration provide any discussion which might lend support to the proposed contention that the license amendment request is "scientifically indefensible."

Accordingly, this proposed contention should not be admitted.

CONCLUSION

As explained above, BEST/MATRR fails to propose a contention that is admissible under 10 C.F.R. § 2.309(f). Therefore, the Motion should be denied.

Respectfully submitted,

/signed (electronically) by/
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October 4, 2016

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CERTIFICATE OF SERVICE

I certify that, on October 4, 2016, a copy of "Tennessee Valley Authority's Answer Opposing Petition for Leave to Intervene and Request for Hearing" was served electronically through the E-Filing system on the participants in the above-captioned proceeding.

/signed electronically by/
Christopher C. Chandler