October 20, 2017

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 52-047-ESP
Tennessee Valley Authority	)	
	)	
(Clinch River Nuclear Site)	)	
	)	

INTERVENORS' MOTION FOR PARTIAL RECONSIDERATION OF LBP-17-08

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.323(e), Intervenors Southern Alliance for Clean Energy and Tennessee Environmental Council hereby request the Atomic Safety and Licensing Board ("ASLB") to reconsider their ruling in LBP-17-08 (Oct. 10, 2017) rejecting Intervenors' Contention 1 (Inadequate Emergency Plan). Reconsideration is warranted because the ASLB's ruling is based on a "clear and material error" that "could not have reasonably been anticipated" by Intervenors. 10 C.F.R. § 2.323(e).

Intervenors ask the ASLB to reconsider a key portion of its ruling that attempts to resolve admitted "confusion" about the purpose of TVA's emergency planning-related exemption application. LBP-17-08, slip op. at 19. In LBP-17-08, the Board characterized the questions to be resolved as follows:

> Was TVA applying for an exemption to the methodology for establishing an emergency planning zone? Or was TVA explicitly requesting an emergency planning zone at either the site boundary or at a two-mile radius?

Id. The answer to these questions will determine whether Intervenors get a hearing now, in this proceeding, regarding their challenge to TVA's exemption request, or whether they must wait

until the combined license ("COL") proceeding for application of the methodology to TVA's chosen small modular reactor ("SMR") design.

Intervenors respectfully submit the ASLB clearly erred by deciding that TVA had applied only for an exemption for its methodology. As clearly demonstrated by both the ESP application and TVA's August 24, 2017 response to a Request for Additional Information ("RAI"),[1] TVA seeks exemptions both for (a) two alternative reduced-size emergency planning zones ("EPZs") at the early site permit ("ESP") stage; and (b) a set of criteria for evaluating the adequacy of a reduced EPZ size to protect public health and safety. As demonstrated by the RAI Response, TVA is now in the process of applying the criteria to a "surrogate" design at the ESP stage, and intends to establish the size of the EPZs in this proceeding. In the COL proceeding, TVA will apply the criteria to the specific design chosen at that point, revising the size of the EPZs only if it proves necessary.

Reconsideration is warranted because the ASLB's error is clear and material, as well as prejudicial to the Intervenors. Intervenors' inability to mount a challenge to TVA's proposal in this proceeding as a result of the Board's ruling in LBP-17-08 is likely to prejudice their ability to revive the issues at the COL stage, when the size of the EPZ will be considered *res judicata*.

II. FACTUAL BACKGROUND

As permitted by 10 C.F.R. § 52.17(b)(2)(i), ESP applicants may propose "major features" of emergency plans, including "the exact size and configuration of the emergency planning zones," for "review and approval by the NRC, in consultation with the Federal Emergency Management

[1] Letter from J.W. Shea, TVA, to NRC Document Control Desk, re: Response to Request for Additional Information Related to Emergency Planning Exemption Requests in Support of Early Site Permit application for Clinch River Nuclear Site (Aug. 24, 2017) (ML17237A175) ("RAI Response"). The RAI Response was posted on NRC's Agency Data Access and Management System ("ADAMS") on September 11, 2017. A copy is attached to Intervenors' Motion for Leave to File Motion for Partial Reconsideration of LBP-17-08.

Agency." Pursuant to that regulation, TVA has submitted two Emergency Plans that describe emergency planning measures for two different sized EPZs -- one at the site boundary and the other at a two-mile radius. ESP Application at 13.3-1. In support of its proposed reduced EPZ size, TVA has also submitted a waiver application in Section 6 of the ESP application.

Intervenors' Contention 1 asserts that TVA's Emergency Plan "is inadequate to satisfy 10 C.F.R. § 52.17(b)(2) because the size of the proposed plume exposure Emergency Planning Zone ('EPZ') for each submitted emergency plan is less than the minimum ten-mile radius required by 10 C.F.R. § 50.47(c)(2)." Hearing Request at 5. Contention 1 also disputes TVA's claim, in Part 6 of the ESP application, that the ten-mile EPZ required by NRC regulations is not necessary and therefore an exemption should be granted because "there are no offsite consequences from any credible event in excess of the [U.S. Environmental Protection Agency Protective Action Guidelines]." *Id.* at 6 (quoting ESP Application, Part 6, Table 1-1). Intervenors contend that TVA's claim is faulty because TVA "completely fails to discuss any SMR design features that would decrease the potential for spent fuel pool fires to result in significant off-site radiological releases." Hearing Request at 6-7.

TVA responded that the contention should not be admitted because TVA's only purpose in submitting the exemption application was to obtain NRC approval for application, at the combined license ("COL") stage, of a methodology to reduce the EPZ size. Tennessee Valley Authority's Answer Opposing Petitions for Intervention, Etc. at 15 (July 7, 2017).

On August 24, 2017, TVA submitted its RAI Response. The RAI Response was posted on ADAMS on September 11, 2017, a day before the oral argument before the ASLB on the admissibility of Contention 1, and Intervenors were unaware of it at the time. Enclosure 1 of the RAI Response contains a detailed evaluation of whether the emergency plans submitted by TVA

in this proceeding, including their reduced-size EPZs, meet TVA's criteria for assuring safe operation. At page E1-9, the RAI Response discusses the potential for spent fuel pool fires, the issue raised in Intervenors' contention.

On September 12, 2017, the ASLB held oral argument on the admissibility of Intervenors' contentions and other matters.

On October 10, 2017, the ASLB issued LBP-17-08, rejecting admission of Contention 1. *Id.,* slip op. at 15-23. In its opinion, the ASLB acknowledged that Part 6 of TVA's ESP application is internally inconsistent with respect to the question of "what TVA is requesting" with its waiver application. *Id.,* slip op. at 19 and that TVA's inconsistent statements "led to possible confusion:"

> Was TVA applying for an exemption to the methodology for establishing an emergency planning zone? Or was TVA explicitly requesting an emergency planning zone at either the site boundary or at a two-mile radius?

Id.[2] To resolve the confusion, the ASLB looked to Chapter 13 of the Site Safety Analysis Report ("SSAR"), a portion of the ESP application that is separate from the parts that are the subject of Intervenors' contention (Parts 5A and 5B (Emergency Plans) and Part 6 (Exemptions and Departures)). Observing that Chapter 13 "sets out the explicit methodology by which TVA proposes to determine the emergency planning zone size at the COL stage," the ASLB cited the "three possible results" of using the methodology:

> (1) a site-boundary emergency planning zone; (2) an emergency planning zone having a radius of two miles; or (3) an emergency planning zone with a radius greater than two miles.

[2] The extreme degree of confusion created by TVA's exemption request is illustrated by the fact that even at the oral argument, the NRC Staff was unable to state a position on the purpose of the exemption request. Tr. at 78 (Roach).

Id. (footnote omitted) (citing SSAR, Rev. 0, at 13.3-13 to 13.3-14). The ASLB found that this language makes it "clear that the application is only requesting permission to use an alternative methodology to select the emergency planning zone size at the COL stage," and that "[t]he two sets of explicit exemptions for site boundary and two-mile emergency planning zones are provided only as examples of potential results of using this methodology" at the COL stage. *Id.*, slip op. at 19-20. Accordingly, the ASLB determined that Contention 1 was inadmissible because it "incorrectly assumes that TVA is seeking an absolute reduction in the size of the emergency planning zone." *Id.*, slip op. at 20.

III. ARGUMENT

Intervenors respectfully submit that in concluding that SSAR Chapter 13 clarifies that the only purpose of TVA's exemption application is to use an "alternative methodology" for determining EPZ size at the COL stage, the ASLB overlooks critical language in SSAR Chapter 13 contradicting that conclusion. SSAR Chapter 13 actually shows that TVA is seeking approval, in this ESP proceeding under 10 C.F.R. § 52.17(b)(2), of substantially-reduced EPZ sizes as a "major feature" of the proposed SMR's Emergency Plan. In addition, the Board's conclusion is contradicted by TVA's own actions with respect to its ESP application and waiver request, as demonstrated in its RAI Request. The Board's error is not only clear, but it is material and indeed prejudicial: because TVA has asked the NRC to "review and approve" the proposed reduced EPZ sizes, it is unlikely that Intervenors will be able to challenge the outcome of a review at the COL stage if the information and analyses are largely the same. *See* Final Rule, Licenses, Certifications, and Approvals for Nuclear Power Plants, 72 Fed. Reg. 49,352, 49,373 (August 28, 2007).

A. The ASLB Clearly Erred in Concluding the Only Purpose of TVA's Waiver Petition Is to Obtain Approval of an Alternative Methodology for Use at the COL Stage.

1. The ASLB overlooked key language in SSAR Chapter 13.

Intervenors respectfully submit that the ASLB overlooked key language in SSAR Chapter 13 showing that TVA does, indeed, seek a reduced EPZ size -- for a "surrogate" design that it believes will encompass the specific design chosen at the COL stage, *i.e.,* falls within the "Site Plant Parameter Envelope (PPE)." *Id.* at 13.3-1. According to TVA:

> The surrogate design is reasonable for SMR designs because it has been informed by preliminary information from vendors of SMRs that have begun pre-application discussions (for design certifications) with the NRC.

Id. TVA unequivocally asserts that an exemption for the surrogate design is justified *now,* in the present tense:

> A PEP [plume exposure pathway] EPZ less than the "about 10 miles" cited in 10 CFR 50.47(c)(2) *is justified* based upon the significantly reduced risk of radiological release and offsite consequences expected for SMR designs.

Id. (emphasis added). Similarly, TVA's more specific claims about the reasons that radiological risks of the "surrogate" SMR design are lower than for other reactors are both unequivocal and generalized, without any additional claim that they require verification by application to a specific design at the COL stage:

> Specifically, SMR designs *will* have smaller radionuclide inventory and source terms; the projected rate of progression of postulated accidents *is anticipated to be* slower; and various design features *will* eliminate several normally considered design-basis accidents (DBAs). Further, beyond-design-basis accidents (BDBA) *are projected to be* significantly less likely.

Id. (emphasis added). These unqualified, present-tense assertions are consistent with the statement in Part 6 that is challenged by Intervenors in Contention 1: "*there are no offsite*

consequences from any credible event in excess of the EPA PAG." *See* Hearing Request at 6 (citing ESP Application, Part 6, Table 1-1) (emphasis added).

A significant amount of other language in SSAR Chapter 13 undermines the ASLB's conclusion. First, TVA refers in Chapter 13 to "the proposed EPZ" as the subject of the exemption application, not "the proposed methodology." *Id.* at 13.3-1. Second, SSAR Chapter 13 refers to "[t]wo sets of exemptions" that "have been developed for SMRs:" "Exemptions for a PEP EPZ at the Site boundary" and "exemptions for an approximate two-mile PEP EPZ." *Id.* The use of the plural undermines the ASLB's conclusion that only a single exemption for a methodology was requested.

If the sole purpose of TVA's waiver application were to get approval for future use of a methodology, the representations cited above would have no place in SSAR Chapter 13. Contrary to the ASLB's conclusion, Chapter 13 makes it clear that TVA seeks an exemption for a "surrogate design" now, in order to justify two proposed EPZs that are significantly reduced in size. It is reasonable to predict that any further analysis that is done at the COL stage will be merely confirmatory in nature. Accordingly, the ASLB clearly and materially erred by concluding that the subject of TVA's waiver request was the methodology only, and did not include reduced-radius EPZs.

2. TVA's RAI Response contradicts the Board's decision.

TVA's RAI Response shows that TVA is applying the methodology *now*, in this ESP proceeding, to the "surrogate" design described in the ESP application. *See* Enclosure 1. As demonstrated at page E1-9 of the RAI Response, TVA's evaluation includes application of the ten-hour criterion for spent fuel pool fire risks that Intervenors raised in Contention 1 -- a review that TVA told the ASLB would be deferred until the COL proceeding. *See* Tr. at 99 (Nelson)

("[A]t COLA, under 13.3, we will be taking into account explicitly and specifically spent fuel pool accidents.").

Moreover, the RAI Response is inconsistent with statements by TVA counsel in the September 12, 2017 oral argument, including statements relied on by the ASLB in LBP-17-08. For instance, TVA's counsel stated that TVA's exemption request "is not for a size of an EPZ" but rather "to use the methodology." Tr. At 61 (Nelson) (cited in LBP-17-08, slip op. at 20). TVA's counsel also stated that "EPZ size would not be decided until [the] COLA" proceeding. Tr. At 85 (Nelson). As demonstrated by the RAI Response, however, TVA is in the process of applying the criteria now, in this proceeding, to a "surrogate" design, in order to justify two reduced-size EPZs. *See* Enclosure 1. The COL proceeding will be merely confirmatory, with the possibility of revisions. Once TVA selects a particular design at the COL stage, "[i]f the selected SMR design cannot meet these criteria, then the CRN Site Emergency Plan will need to be revised accordingly and submitted with the COLA." *Id.,* Enclosure 1 at E1-2.

B. The ASLB Clearly Erred in Concluding That Intervenors Would Not Be Prejudiced By the Dismissal of Their Contention.

The Board also committed clear and material error in concluding that Intervenors "will still have an opportunity to challenge the application of [TVA's] proposed methodology at the COL stage." *Id.,* slip op. at 21. *See also id., slip op.* at 18-19 (citing TVA Answer at 14) (agreeing with TVA that "at the COL stage, SACE and TEC could . . . 'raise any objections to whether a design selected for the [Clinch River] Site complies with the [U.S. EPA Protective Action Guides—based criteria.'") The ASLB's conclusion is inconsistent with 10 C.F.R. § 52.17(b)(2), which allows ESP applicants to seek conclusive approval of "major features" of an emergency plan, including the "size and configuration" of EPZs. As explained in the preamble to the Final Rule:

> The goal of the ‘‘major features’’ option in § 52.17(b) is an NRC finding that the proposed major features are acceptable as elements of a complete and integrated emergency plan that would be considered later, when the early site permit is referenced in a license application. This is not the same level of finality as the ‘‘reasonable assurance’’ finding that would be made in connection with the approval of a completed and integrated plan. However, *the NRC would not re-review, at the COL stage, information that provided the basis for the NRC approval of major features in an ESP but would address integration of approved major features with the balance of emergency planning information provided in the COL applications* necessary to support the NRC's reasonable assurance finding; and updated emergency planning information required by § 52.39(b).

72 Fed. Reg. at 49,373 (emphasis added). Under this doctrine, at the COL stage, Intervenors are likely to find themselves precluded from challenging any of the assertions on which TVA has relied in this proceeding to justify the reduced-size EPZs, such as assertions about the "smaller radionuclide inventory and source terms," the "projected rate of progression of postulated accidents," and the asserted elimination of "several normally considered design-basis accidents." *See* ESP application at 13.3-1. Thus, contrary to the ASLB's conclusion, Intervenors are likely to be prejudiced by the dismissal of Contention 1.

C. Contention 1 is Admissible.

The ASLB's sole ground for rejecting Contention 1 was its conclusion that the contention was based on a "misunderstanding" of TVA's ESP application. LBP-17-08, slip op. at 19. The ASLB also stated that if Intervenors were correct that the subject of TVA's ESP application is a reduced-size EPZ, then Intervenors "might" have supplied sufficient basis and expert support for an admissible contention. *Id.,* slip op. at 21. Intervenors respectfully submit that for all the reasons stated in Contention 1, their Reply to the oppositions filed by TVA and the NRC Staff, and statements of counsel at the oral argument, Contention 1 is admissible. TVA has made representations purporting to justify a reduced-size EPZ, and Intervenors have responded with expert opinion and documented evidence that TVA has failed to consider an essential factor in its

determination: the risk of a pool fire occurring in less than ten hours after spent fuel is uncovered. Intervenors respectfully submit that Contention 1 should be admitted.

IV. CONCLUSION

For the foregoing reasons, the ASLB should grant Intervenors' motion for reconsideration and admit Contention 1.

Respectfully submitted,

/signed electronically by/
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October 20, 2017

CERTIFICATE OF COUNSEL

Pursuant to 10 C.F.R. § 2.323(b), I certify that on October 18, 2017, I consulted counsel for TVA and the NRC Staff, in a sincere effort to resolve the issues raised by this motion. Counsel for TVA and the Staff stated that they would oppose the motion.

/signed electronically by/
Diane Curran

CERTIFICATE OF SERVICE

I certify that on October 20, 2017, I posted copies of the foregoing INTERVENORS' MOTION FOR RECONSIDERATION OF LBP-17-08 on the NRC's Electronic Information Exchange System.

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