

**Southern Alliance for Clean Energy (SACE) Public Comments at the
NRC Meeting Regarding the Draft Environmental Impact Statement for TVA's Early Site
Permit (ESP) for Small Modular Reactors (SMRs) at the Clinch River Site in Tennessee
June 5, 2018**

My name is Sara Barczak, Regional Advocacy Director with the Southern Alliance for Clean Energy or SACE, which has staff and Board members in Knoxville, Memphis, Nashville and Chattanooga and members across Tennessee. Southern Alliance for Clean Energy is a nonprofit organization that promotes responsible energy choices that work to address the impacts of global climate change and ensure clean, safe, and healthy communities throughout the Southeast. We have had a long history both watchdogging TVA and working with TVA to transform the region's electricity production to be cleaner, safer and more affordable for Valley residents and businesses.

Unfortunately, we are here today to again voice our concerns about TVA's highly speculative and risky proposal to pursue expensive, untested small modular reactor technology at the Clinch River Site.

Deficient Draft Environmental Impact Statement

We have serious objections to the NRC's Draft Environmental Impact Statement (EIS) that have led us to seek an adjudicatory hearing before the NRC's Atomic Safety & Licensing Board (ASLB). On May 21, 2018, along with our co-intervenor, Tennessee Environmental Council, we asked the ASLB to hold a hearing on two highly significant issues related to the proposed SMRs. First, whether the Draft EIS contains an adequate analysis of the risk of a severe fire in the proposed SMR's spent storage pools; and second, whether the Draft EIS makes claims about the supposed benefits of the proposed SMRs that are forbidden by NRC regulations and are also completely unsupported.¹

Inadequate Discussion of the Environmental Impacts of Spent Fuel Pool Fires

The nuclear industry and its proponents claim that SMRs are smaller and hence safer and use that as an excuse to reduce basic safety requirements and protections. This is reflected in TVA's effort to get rid of and or significantly reduce the size of the Emergency Planning Zone (EPZ) for the Clinch River SMRs. Is it really safer if a utility cuts back on safety precautions?

TVA's proposed SMRs are based on a whole new design, different from larger light water reactors (LWR) now operating, that involves moving spent fuel into the spent fuel storage pools much more frequently. In comparison with a light water reactor, whose spent fuel is moved to the pool every two years, spent fuel from a 12-unit SMR will be moved to the pool every two months. That means the pool will constantly contain spent fuel that is at the hottest temperature,

¹ See http://www.cleanenergy.org/wp-content/uploads/20180521_SACE-TEC_TVASMRESP_motiontofilenewcontentions.pdf

which makes it more susceptible to ignition and catastrophic fires. In violation of the National Environmental Policy Act (NEPA), the NRC has completely failed to address this significant and dangerous design difference between the proposed SMRs and light water reactors now in use.

It is well established that the radiological consequences of a spent fuel pool fire are potentially catastrophic. For instance according to the commonly referred to "Spent Fuel Pool Study," radioactive fallout from a pool fire could displace as many as four million people out to 500 miles.² In the 2013 License Renewal Generic Environmental Impact Statement (GEIS), the NRC also concluded that the environmental impacts of a spent fuel pool fire are "comparable to those from the reactor accidents at full power."³ The potential for reactor accidents to have significant adverse public health effects within at least a ten-mile radius -- including early and latent fatalities -- is discussed in NRC's emergency planning guidance documents.⁴

The Draft EIS discussion of energy alternatives and the need for the proposed SMRs violates NEPA and NRC implementing regulations

In its application for an Early Site Permit (ESP), TVA said they would not discuss or analyze the need for power or energy alternatives to SMRs and rather, would postpone that analysis until their Combined Operating License application. Yet TVA went ahead and touted the alleged advantages of SMRs as an energy source in their Environmental Report.

Before the Draft EIS came out, the NRC said that the Draft EIS would comply with the NRC's rules and therefore not contain a comparison of SMRs with other energy alternatives. Just like TVA, however, the NRC broke its commitment and went ahead to compare the proposed SMR to other energy alternatives in the Draft EIS. The Draft EIS quotes the impermissible sections of the Environmental Report and also assert that "[t]he NRC's purpose and need is further informed by the applicant's purpose and need." (Draft EIS at 1-9 – 1-10).

The Draft EIS violates the explicit requirement of NRC regulations that the NRC may not address the need for power and alternative energy sources in its Draft EIS if the applicant has chosen not to address those issues in its Environmental Report. By presenting these rationalizations for the construction and operation of the proposed SMRs, the NRC Staff violates both the plain language of 10 C.F.R. §51.75 and the Commission's regulatory framework for an EIS prepared at the ESP stage, which requires the EIS to focus on siting issues only.

By parroting TVA's assertions about the benefits of building and operating SMRs, the NRC also violated its regulatory obligation to make an independent analysis of all the facts presented in the Draft EIS. Instead of conducting its own evaluation of the relative costs and benefits of SMRs in comparison to alternative energy sources, the NRC bought TVA's arguments hook, line and sinker. Once again, this is a gross violation of the National Environmental Policy Act, which places the responsibility for independent environmental analysis squarely with the NRC.

² NUREG-2161, Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a US Mark I Boiling Water Reactor at 169 (2014) (ADAMS Accession No. ML13297070) ("Spent Fuel Pool Study")

³ *Id.* at 1-28.

⁴ See NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants (1978) and NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Protective Action Recommendations for Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (1980).

The Draft EIS claims regarding the benefits of the proposed SMR are not supported or valid
Even aside from the sheer illegality of making claims about the benefits of building and operating the proposed SMRs, the claims in the Draft EIS regarding the benefits of the proposed SMRs are egregiously lacking in factual support or logical analysis.

For instance, the Draft EIS fails to acknowledge that solar and wind energy sources can meet all the other objectives listed by TVA (carbon reduction, safety, and incremental deployment, etc.), and have less deleterious environmental impacts, in particular, water use. In fact, the reported rate of water withdrawal for SMRs is higher than almost any other form of electricity generation.⁵ Solar photovoltaics (PV) and wind use negligible amounts of water.

Further, the Draft EIS fails to address the United States' history of unsuccessful experimentation with small reactors, which suggests that SMRs are quite unlikely to be reliable sources of generating power in the first place. Prior experience that is particularly important to take note of is the Army's Nuclear Power Program, which was started in the 1950s, and resulted in the construction of eight small reactors. The experiences with these reactors reveal the potential for failure implicit with SMRs. The official history of the Army's Nuclear Power Program, which was cancelled in 1976, termed the development of small reactors "expensive and time consuming."

We're afraid that more than forty years later, history is repeating itself.

We are disturbed and offended by the NRC's complicity with TVA in promoting the supposed advantages of SMRs, without questioning even one of TVA's inflated claims. In effect the NRC has allowed its own NEPA document to be used as a billboard by TVA and proponents of SMRs. The NRC's lack of independence or care in preparing the Draft EIS completely undermines any basis for public trust in the legitimacy and reliability of the EIS as an independent, government-sponsored study. The NRC should be working for the public, not TVA.

Conclusion

The NRC needs to serve the public by correcting these errors in the Draft EIS, ending their cheerleading routine for the nuclear industry, and showing the independence and integrity required by NEPA of federal agencies.

Thank you.

[For any questions, please contact Sara Barczak, 912-201-0354 or sara@cleanenergy.org.]

⁵ Based on Table 3.1-2 of the Environmental Report, which states that "[t]he expected (and maximum) rate of removal of water from a natural source to replace water losses from closed cooling water system" are "17,078 gpm (expected) [and] 25,608 gpm (maximum))," and assuming that TVA used a reactor capacity of 800 MW, the expected rate of water withdrawal translates to 1,281 gallons/MW/hour.