



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 4, 2019

Dr. Michael L. Corradini, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: EARLY SITE PERMIT—CLINCH RIVER NUCLEAR SITE

Dear Dr. Corradini:

On behalf of the U.S. Nuclear Regulatory Commission (NRC) staff, I would like to thank you for the letter from the Advisory Committee on Reactor Safeguards (ACRS) dated January 9, 2019 (Agencywide Documents Access and Management System Accession No. ML19009A286), on the early site permit (ESP) application submitted by the Tennessee Valley Authority (TVA) for the Clinch River Nuclear (CRN) Site. Your letter came after the ACRS's 659th meeting on December 6–7, 2018, during which the ACRS completed its review of the ESP application and the NRC staff's safety evaluation report (SER).

The ACRS letter included the following conclusions and recommendations:

- Small modular reactors with design characteristics within the plant parameter envelope used by TVA in developing its CRN Site ESP application can be constructed and operated without undue risk to the health and safety of the public.
- The staff's SER of the TVA ESP application should be issued.
- The ESP for the CRN Site should be issued.

The staff appreciates the Committee's efforts and agrees with its conclusions and recommendations.

The staff would like to clarify one statement made in the ACRS letter. As discussed during the meeting, TVA proposed a risk-informed, dose-based, consequence-oriented methodology to determine the plume exposure pathway (PEP) emergency planning zone (EPZ). TVA's methodology uses a dose-savings approach consistent with NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," issued December 1978, and the dose criteria of the U.S. Environmental Protection Agency's early-phase protective action guides. The ACRS letter dated January 9, 2019, stated, "At least one SMR design is expected to meet the dose criteria for the site boundary EPZ; all four are expected to meet the dose criteria for a 2-mile

EPZ.” To clarify, although this is TVA’s stated expectation, the NRC staff has not verified this conclusion because it is outside the scope of the ESP review. A combined license applicant that references the ESP will use the PEP EPZ size methodology with plant-specific information to determine the appropriate PEP EPZ size and emergency plan for the site. Any applicant referencing the ESP must also satisfy the permit conditions described in Section 13.3 of the SER.

The staff appreciates the thorough review of the ESP application for the CRN Site by the ACRS. We look forward to future meetings with the ACRS.

Sincerely,

/RA/

Frederick D. Brown, Director
Office of New Reactors

Docket No.: 52-047

cc: Chairman Svinicki
Commissioner Baran
Commissioner Burns
Commissioner Caputo
Commissioner Wright
SECY

Letter to Dr. M.L. Corradini from Mr. Frederick D. Brown

SUBJECT: EARLY SITE PERMIT – CLINCH RIVER NUCLEAR SITE DATED
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(Revised 11/20/2018)

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