

March 20, 2013

MEMORANDUM TO: Stewart L. Magruder, Branch Chief
Small Modular Reactor Licensing Branch 1
Division of Advanced Reactors and Rulemaking
Office of New Reactors

FROM: Joseph F. Williams, Senior Project Manager /RA/
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Division of Advanced Reactors and Rulemaking
Office of New Reactors

SUBJECT: SUMMARY OF FEBRUARY 12, 2013, MEETING REGARDING
CLINCH RIVER SUBSURFACE INVESTIGATION PLAN

On February 12, 2013, representatives of the Tennessee Valley Authority (TVA) briefed members of the U.S. Nuclear Regulatory Commission (NRC) staff regarding the subsurface investigation plan at the Clinch River site near Oak Ridge, Tennessee. This plan is part of the effort to characterize and evaluate the geology of the Clinch River site in preparation for a future license application. A list of meeting participants is provided in the Enclosure. Materials presented by TVA are available through the Agencywide Documents Access and Management System (ADAMS). The slide presentation can be found at ADAMS accession number ML13036A271, while site maps showing the expected locations of borings and wells can be found at ADAMS accession number ML130730275. A summary of the meeting is provided below.

TVA and its representatives provided an overview of the project and site location. Presently, TVA expects to request a construction permit for 4 reactor units, each with a capacity of about 180 megawatts, electric. TVA stated in its February 11, 2013, response to Regulatory Issue Summary 2012-12 (ADAMS accession number ML13052A089) that it expects to apply for a construction permit by the second quarter of calendar year 2015. TVA's response states that they expect to be the lead site-specific license application for the standard Generation mPower design, in coordination with the Generation mPower design certification application.

The site is located on a peninsula within the Clinch River in eastern Tennessee about 12 miles from the city of Oak Ridge. At this location, the river is considered to be part of the Watts Bar reservoir. This site was the location of a proposed liquid metal fast breeder reactor project which was cancelled in the early 1980s. The current project is expected to be sited near the planned breeder reactor location.

TVA representatives described the site physiography, stratigraphy, geology, and hydrogeology, reviewing information provided as part of the breeder reactor preliminary safety evaluation report.

The presentation also outlined the regulatory guidance being used to develop the subsurface investigation plan. The plan was characterized as being flexible, so that adjustments can be made in the field as data are gathered. NRC staff noted that revisions to guidance in the Standard Review Plan are being developed based on lessons learned from recent combined license reviews.

Plant structures for the mPower design are expected to be largely underground, with the reactor service building foundation being located about 140 feet below grade elevation. This configuration is in contrast to existing reactors, whose structures and systems are often found above grade. The depth of embedment of the mPower design is, therefore, much greater than existing reactors.

TVA will use contractors experienced in subsurface investigation who have approved quality assurance plans. Site activities include drilling to obtain core samples and drilling wells which will be used to gather data for characterization of groundwater. Including TVA personnel, approximately two dozen people will be at the site at the peak of the investigation effort. NRC staff will monitor portions of the activities to improve their understanding of the site, and to ensure data are being gathered in an acceptable manner. The subsurface investigation is expected to take place over about 12 two-week shifts, and will begin later in 2013. TVA was asked to keep NRC staff informed of its plans so the staff can plan its own activities at the site.

Members of the public asked several questions of the NRC staff about the site and upcoming review. In several cases, the staff noted that interactions with TVA have only just begun, and that conclusions about whether the site is an acceptable location for the proposed project will be made based on review of a future application. Those conclusions will be based on whether it has been demonstrated that the site meets NRC's requirements, including any which may arise out of the agency's assessment of the Fukushima accident. The review may also consider the relevance of information developed as part of the breeder reactor project. The review will be based upon publicly available information to the greatest extent possible. Any information that is withheld from public disclosure must meet NRC rules for constraints such as proprietary information or security concerns.

One questioner asked whether the recent court ruling regarding NRC's waste confidence policy and rules (see 10 CFR 51.23) would prevent issuance of a construction permit. NRC staff in attendance were not sure whether a construction permit could be issued pending resolution of the issue, but stated that a plant operating license will not be granted until after the issue is addressed.

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DATE	03/19/13	03/20/13

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CLINCH RIVER SUBSURFACE INVESTIGATION PLAN
FEBRUARY 12, 2013

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Pete Gaillard	TVA
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Don Calsyn	Generation mPower
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Jerry McLane	Bechtel
Courtney St. Peters	NRC
Mark Reimnitz	Bechtel
Rebecca Karas	NRC
Jeff Perry	TVA
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