



Tennessee Valley Authority, 1101 Market Street, LP 5A, Chattanooga, Tennessee 37402-2801

February 11, 2013

10 CFR Part 50

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Project Number 785

**SUBJECT: TENNESSEE VALLEY AUTHORITY (TVA)  
CLINCH RIVER CONSTRUCTION PERMIT (CRCP) PROJECT  
TVA VOLUNTARY RESPONSE TO RIS 2012-12**

References:

- 1) NRC Regulatory Issue Summary 2012-12, Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs
- 2) TVA letter to NRC dated February 10, 2012, Update to TVA Voluntary Response to RIS 2011-02
- 3) TVA letter to NRC dated December 22, 2010, Addendum to the Key Assumptions Letter for the Possible Licensing and Construction of Small Modular Reactor Modules at the Clinch River Site

The purpose of this letter is to provide TVA's voluntary response to the NRC RIS 2012-12 (Reference 1). TVA is providing this information solely to assist the NRC in its planning and scheduling efforts.

TVA intends to submit a Construction Permit Application (CPA) to the NRC for review in the second quarter of calendar year CY 2015. The CPA will be for up to four mPower Small Modular Reactor (SMR) units at the Clinch River site in Oak Ridge, Tennessee. This submittal date is later than previously communicated (Reference 2) primarily due to the delay in the award of the Department of Energy funding for SMRs.


TVA and Generation mPower are working closely to coordinate and integrate plans and schedules. TVA has carefully reassessed the CPA development plans and schedules considering engineering requirements, public-private participation to share in project development risks, and other factors that may impact project development and schedule.

D104  
NRD

U.S. Nuclear Regulatory Commission  
February 11, 2013  
Page 2

TVA's voluntary response to this RIS is provided in Enclosure 1. If you have any questions, please contact Pete Gaillard at 1101 Market Street, BR 5B-C, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-2088, or by email at [pcgaillard@tva.gov](mailto:pcgaillard@tva.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel P. Stout". The signature is written in a cursive style with a large, stylized "D" and "S".

Daniel P. Stout  
Senior Manager, SMR Technology

Enclosure  
cc: See Page 3

cc: w/Enclosure

R.W. Borchardt  
U.S. Nuclear Regulatory Commission  
One White Flint North, 16E15  
11555 Rockville Pike  
Rockville, Maryland 20852-2378

Stewart Magruder  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 9 F27  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Michael Mayfield  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 6 E4  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Mark Notich  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 7 F27  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Joelle Starefos  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 9 F27  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Glenn M. Tracy  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 6 F15  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

Joseph Williams  
U.S. Nuclear Regulatory Commission  
Two White Flint North, 6 E4  
11545 Rockville Pike  
Rockville, Maryland 20852-2738

bcc: w/Enclosure

C. C. Chandler, WT 6A - K  
P. C. Gaillard, BR 5B-C  
Peter Hastings, GmP  
F. J. Helin, GmP  
J. C. Saldarini, BPC  
J. W. Shea, LP 3D-C  
Sandra Sloan, GmP  
D. P. Stout, BR 5B-C  
S. A. Vance, WT 6A - K  
E. J. Vigluicci, WT 6A - K  
EDMS, WT C

**Enclosure 1**  
**TVA Voluntary Response to NRC Regulatory Issue Summary 2012-12**

On December 28, 2012, NRC issued NRC Regulatory Issue Summary (RIS) 2012-12, "Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs." The intent is "to obtain new or updated information on the scheduling of CP, ESP, COL, DC, DA, or ML application submissions related to SMR designs". This information facilitates the establishment of a predictable and consistent method for reviewing applications.

The following are provided in response to RIS 2012-12. TVA and Generation mPower worked closely to coordinate our responses to RIS 2012-12. Only those questions for which TVA has direct responses are addressed in this Enclosure. Other questions will be addressed by Babcock and Wilcox mPower, Inc. (B&W mPower).

**Design and Licensing Submittal Information**

*When (month and year) are applications planned for design-related applications and what NRC action will be requested (i.e., a CP, DC, DA, or ML, or a COL that does not reference a DC or DA)?*

TVA intends to submit a Construction Permit Application (CPA) to the NRC for review in the second quarter of calendar year 2015. The CPA will be for up to four mPower SMR units at the Clinch River site in Oak Ridge, Tennessee.

*Will the applicants be organized into DCWGs? If known, what is the membership of the DCWG, and which party is the primary point-of-contact designated for each DCWG?*

A formal DCWG has not yet been established. TVA's CPA is expected to be the lead site-specific license application for the standard Generation mPower design, in coordination with the Generation mPower Design Certification Application (DCA). TVA and Generation mPower are working to integrate the CPA, DCA and Operating License (OL) activities. Protocols are being developed to ensure that coordinated responses are provided for RAIs with generic applicability to the design center and to maintain configuration management among the applications. This approach is consistent with the intent of the DCWG process with TVA being the lead applicant.

*Have protocols been developed to provide coordinated responses for requests for additional information with generic applicability to a design center?*

As noted earlier, protocols are being developed to ensure that coordinated responses are provided for RAIs with generic applicability to the design center and to maintain configuration management among the applications.

*Which applicant that references the design will be designated as the reference COL applicant, or, alternatively, how will various applications (e.g., CP, DC, or COL applications) be coordinated to achieve the desired design-centered licensing review approach?*

TVA's Addendum to the Key Assumptions Letter (Reference 3) noted that TVA would use the Part 50 licensing process. The letter also addressed the utilization of a "One Design - One Review" approach. It is important to note that when the Key Assumptions Letter was submitted, it was anticipated that the DCA would be submitted after the CP. The current schedule now has the DCA being submitted before the CP. However, the concept described in the Key Assumptions Letter to assure coordination to achieve the desired design-centered licensing review approach remains valid. As stated in the Key Assumptions Letter, it remains critical that standardization of content and format be maintained during the review process, regardless of whether the DCA or the CP is submitted first.

TVA's use of the Regulatory Framework Documents (RFDs) helps provide alignment with the NRC on the scope and content of the Clinch River CPA as well as the additional level of detail to be provided in the DCA and OLA. Alignment between the CP, DCA and OLA assures the required coordination to achieve the desired design-centered licensing review approach.

Changes during the construction phase, if any, will be coordinated with the DCA and OLA to ensure the standard design is also changed consistently. This is further demonstration that TVA is fully committed to standardization while using the 10 CFR Part 50 process to pursue the license for the first plant.

*When (month and year) will CP, COL, or ESP applications be submitted for review? In addition, what are the design, site location, and number of units at each site?*

TVA intends to submit a CPA to the NRC for review in the second quarter of calendar year 2015. The CPA will be for up to four mPower SMR units at the Clinch River site in Oak Ridge, Tennessee.

*Are vendors or consultants assisting in the preparation of the application(s)? If so, please describe their roles and responsibilities for the design and licensing activities.*

The CPA is being developed by TVA with support from Generation mPower. TVA has also contracted with ENERCON to provide Emergency Planning services, Barge Waggoner Sumner & Cannon for flooding analysis, and AECOM for support in the development of the Environmental Report and Environmental Impact Statement. TVA plans to contract with other contractors for licensing support services and hydro-thermal modeling work.

#### **Design, Testing, and Application Preparation**

*What is the applicant's status in the development and implementation of a quality assurance program?*

TVA-NQA-PLN89-A "Tennessee Valley Authority Nuclear Quality Assurance Program," is the governing Quality Assurance program for the Clinch River SMR. TVA is currently developing specific implementing procedures for the Clinch River SMR project.

At this time, TVA does not plan to submit an ESP.