

## ClinchRiverESPEnvRAIPEm Resource

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**From:** Dozier, Tamsen  
**Sent:** Wednesday, September 5, 2018 12:54 PM  
**To:** Stout, Daniel Paul  
**Cc:** Shea, Joseph W; ClinchRiverESPEnvRAIPEm Resource; Fetter, Allen; Palmrose, Donald; Rankin, Jennivine; Dudek, Michael  
**Subject:** CRNS ESP Final RAI Env-1\_eRAI 9602  
**Attachments:** CRNS ESP Final RAI Env-1\_eRAI 9602.docx

Good Afternoon:

This email is a formal issuance of an RAI pertaining to EIS Postulated Accidents for the Clinch River Nuclear Site ESP application review. This is the first environmental RAI for the review, and it has a unique e-RAI identifying number of eRAI-9602. The schedule we have established for the review of the application assumes technically correct and complete responses within 30 calendar days of receipt of RAIs. For any RAIs that cannot be responded to within 30 calendar days, it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information might impact the published schedule.

If you have any questions, we will arrange a public meeting. Please email me if you believe a public meeting would be helpful to clarify this RAI.

Tamsen Dozier  
Environmental Project Manager  
U.S. Nuclear Regulatory Commission  
Office of New Reactors  
301-415-2272

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**Received Date:** 9/5/2018 12:53:55 PM  
**From:** Dozier, Tamsen

**Created By:** Tamsen.Dozier@nrc.gov

**Recipients:**

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Tracking Status: None  
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Tracking Status: None  
"Stout, Daniel Paul" <dpstout@tva.gov>  
Tracking Status: None

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## **Request for Additional Information, Number Env-1, eRAI 9206**

Issue Date: 09/05/2018

Application Title: Clinch River Nuclear Site, ESP Environmental Review

Operating Company: Tennessee Valley Authority

Docket No. 52-047

Review Section: EIS Postulated Accidents

Application Sections: ER 3.1, 3.8, and 5.7

### **QUESTIONS**

#### **EIS Postulated Accidents-01**

10 CFR 51.41 states that the Commission may require an applicant for a permit to submit such information as may be useful in aiding the Commission in complying with section 102(2) of NEPA. Additionally, this regulation also requires that the Commission will independently evaluate and be responsible for the reliability of any information which it uses.

TVA's ER Table 3.1-2 (Sheet 5 of 5) on page 3.1-9 (ADAMS accession number ML18003A471) states:

#### **PPE Section 18.0.2, Fuel assemblies**

- Number of fuel assemblies per core: "Number of Fuel Assemblies: 96"

#### **PPE Section 18.0.4**

- Refueling frequency: "Frequency 2 years"
- Average number of assemblies per refueling: "Assemblies per Refueling: 96"
- Fuel pool capacity (in years), and cooling time in pool: "Capacity 6 years,"

ER Section 3.8.2, Transportation of Irradiated Fuel, is the only place in the ER that refers to a 6 year spent fuel storage capacity in terms of a "minimum," stating that "...each unit is to have a spent fuel pool with a capacity for a minimum of 6 yr of fuel discharges" and "[a]fter a minimum 5-year decay period, the fuel is to be removed from the pool and packaged in casks for storage onsite at an independent spent fuel storage installation and may be transported offsite." ER Section 5.7.2.1.6, Time After Discharge of Irradiated Fuel Before Shipment, states that five years is considered the minimum decay time that spent fuel would need to be stored in the spent fuel pool and that "the CRN Site would have a 6-yr storage capacity which exceeds that needed to accommodate 5-yr cooling of irradiated fuel before removal from the spent fuel pool and either transferred to onsite dry storage or transport offsite."

The staff's analysis in DEIS Section 5.11.2.5 is based on the associated Plant Parameter Envelope (PPE) values from TVA's ER Table 3.1-2 for the above PPE Sections 18.0.2 and 18.04.

In an attached file to an email dated June 29, 2018, under ADAMS accession number ML18180A386, Daniel Stout of the Tennessee Valley Authority (TVA), the Clinch River Nuclear Site (CRNS) Early Site Permit (ESP) applicant, provided comments on the Clinch River Small Modular Reactor ESP Application Draft Environmental Impact Statement (DEIS). On page 22 of

the attachment, TVA had the following comments on DEIS Section 5.11.2.5, Spent Fuel Pool Accidents:

*Section: 5.11.2.5*

*Page: 5-86*

*Line: 22 and 33*

*Comment: DEIS Section 5.11.2.5, page 5-86, Lines 22 and 33 mention a 6 year cooling time for the spent nuclear fuel. [Environmental Report] ER Section 5.7.2.1.6 does not specify a cooling time; it only provides a minimum spent fuel pool storage capacity of 6 years.*

And

*Section: 5.11.2.5*

*Page: 5-86*

*Line: 23*

*Comment: DEIS Section 5.11.2.5, page 5-86, Line 23 states that the spent fuel pool holds 288 assemblies. It would actually hold more than 288 assemblies, because enough space is provided for a full core off load and the new fuel to be loaded. TVA suggest NRC consider revising this description.*

Further, on page 30 of the attachment, TVA included a related comment regarding the timing of the ISFSI development in Appendix J of the DEIS:

*Technical Area: Accidents*

*Representations/Assumptions: An appropriately sized ISFSI would be constructed and operational within 6 years from the commencement of operations. After a sufficient decay period of at least 5 years, the fuel would be removed from the pool and packaged in spent fuel shipping/storage casks either for storage onsite at an (ISFSI or for transportation offsite.*

*Source (differences noted): The DEIS states that an ISFSI would be constructed and operational within 6 years from the commencement of operations. This explicit commitment is not made in the ER.*

The information in the above comments provided by TVA appears inconsistent with ER Sections 3.8.2, 5.7.2.1.6, 18.0.2 and 18.0.4 (PPE Table 3.1-2). Therefore, please provide the correct values to clarify:

- a. The maximum capacity of the spent fuel pool in years;
- b. The number of spent fuel assemblies in the spent fuel pool at maximum capacity;  
and
- c. When an ISFSI would need to be operational at the CRN Site.

The staff request that any associated revisions to the ER be provided as a markup as part of the response to this RAI.