

## ClinchRiverESPHFNPEm Resource

---

**From:** Fetter, Allen  
**Sent:** Tuesday, July 25, 2017 4:14 PM  
**To:** Schiele, Raymond Joseph  
**Cc:** Sutton, Mallecia; Colaccino, Joseph; ClinchRiverESPSafPEm Resource; Tammara, Seshagiri; Burkhart, Lawrence  
**Subject:** Issuance of RAI pertaining Section 2.1.3, Population Distribution, RAI Number 4, eRAI-8857  
**Attachments:** CRNS ESP Final RAI PD04 8857.pdf

Good Afternoon,

This email is a formal issuance of an RAI pertaining Section 2.1.3, Population Distribution, for the Clinch River Nuclear Site ESP application review. The draft version of the RAI was provided to TVA on 6/16/2017, and a clarification on the draft RAI was requested by TVA. Clarification calls on the draft RAI took place on 6/22/2017, 7/6/2017 and 7/25/2017 in order to clarify and distinguish the differences between “urban area”, as designated by U.S. Census Bureau terminology used in the SSAR, verses “population center” criteria noted in 10 CFR 100.21(b). Although the SSAR identified Oak Ridge, Tennessee as the closest population center, TVA incorporated Oak Ridge into the greater Knoxville, Tennessee urban area instead of a discrete population center with a population of greater than 25,000. TVA gained a better understanding of the information needed by NRC staff in order to help ensure that an effective RAI response is provided for meeting the 10 CFR 100.20(b) population center distance requirement.

This is the fourth draft safety RAI prepared (Number 4) for the Clinch River Nuclear Site ESP application review, and it has a unique e-RAI identifying number of eRAI-8857.

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.

Please contact me if you have any questions.

Thanks,

Allen H. Fetter, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
Office of New Reactors  
Division of New Reactor Licensing  
Licensing Branch 3  
Washington, D.C.

301-415-8556 (Office)  
301-385-5342 (Mobile)

**Hearing Identifier:** ClinchRiver\_ESP\_HF\_NonPublic  
**Email Number:** 198

**Mail Envelope Properties** (Allen.Fetter@nrc.gov20170725161300)

**Subject:** Issuance of RAI pertaining Section 2.1.3, Population Distribution, RAI Number 4, eRAI-8857  
**Sent Date:** 7/25/2017 4:13:45 PM  
**Received Date:** 7/25/2017 4:13:00 PM  
**From:** Fetter, Allen

**Created By:** Allen.Fetter@nrc.gov

**Recipients:**

"Sutton, Mallecia" <Mallecia.Sutton@nrc.gov>  
Tracking Status: None  
"Colaccino, Joseph" <Joseph.Colaccino@nrc.gov>  
Tracking Status: None  
"ClinchRiverESPSafPEm Resource" <ClinchRiverESPSafPEm.Resource@nrc.gov>  
Tracking Status: None  
"Tammara, Seshagiri" <Seshagiri.Tammara@nrc.gov>  
Tracking Status: None  
"Burkhart, Lawrence" <Lawrence.Burkhart@nrc.gov>  
Tracking Status: None  
"Schiele, Raymond Joseph" <rjschiele@tva.gov>  
Tracking Status: None

**Post Office:**

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	1942	7/25/2017 4:13:00 PM
CRNS ESP Final RAI PD04 8857.pdf		89104

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

**Request for Additional Information, Number 4, eRAI-8857**

Issue Date: 07/25/2017

Application Title: Clinch River Nuclear Site, ESP

Operating Company: Tennessee Valley Authority

Docket No. 52-047

Review Section: 02.01.03 - Population Distribution

Application Section: 2.1.3

QUESTION

02.01.03-01

RG 1.206 provides guidance regarding the information that is needed to ensure that the information identified and evaluated to meet the siting criteria in 10 CFR 100.20(a) and 10 CFR 100.21(b). The applicant used USCB census-delineated urban areas in the region based on population density. The two urban areas identified are the Knoxville (4.8 mi southeast) urban area with the combination of smaller cities including LaFollette, Oak Ridge, Clinton, Loudon, Lenoir City, Alcoa, Maryville, Farragut, Rockwood, Seymour, and Knoxville; and the Cleveland (45 mi south-southwest) urban area with the combination of smaller cities including Calhoun, Charleston Hopewell, and Cleveland, Tennessee. The Knoxville and Cleveland urban areas had 2010 populations of 558,696 and 66,777 persons, respectively. The distances of these identified urban areas are much greater than the one and one-third times the distance from the site center point to the outer boundary of the LPZ.

The applicant considered meeting the population center distance requirement (10 CFR 100.21(b)), based on the distances from the site center point to the boundary of each of the two identified urban areas in Knoxville, Tennessee, which is 4.8 mi southeast and Cleveland, Tennessee, which is 45 mi south-southeast. Both of these population centers are much greater than the one and one-third times the distance from the site center point to the outer boundary of the LPZ. But the applicant followed an approach by using urban area designation with combination of smaller cities for complying with the population center distance of one and one-third times the distance from the reactor to the outer boundary of LPZ. This approach differs from the regulatory requirement, and could set a new precedent as it considers and combines various small cities of lesser than 25,000 people, rather than considers a city with a densely populated. This effectively changes the distances identified to meet the regulatory requirements. Although in this case the result may be more conservative, the analysis is still not in accordance with the regulatory definitions or requirements as specified in 10 CFR 100.21(b). Therefore, the staff requests the applicant in RAI 2.1.3-1 to revise the evaluation methodology in meeting the 10 CFR 100.21(b) regulatory requirement, solely based on considering the nearest city having population of 25,000 or more people.