



Tennessee Valley Authority, 1101 Market Street, Chattanooga, TN 37402

CNL-17-095

July 18, 2017

10 CFR 52, Subpart A

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Clinch River Nuclear Site  
NRC Docket No. 52-047

Subject: Submittal of Supplemental Information Related to the Environmental Audit in Support of Early Site Permit Application for Clinch River Nuclear Site

- References:
1. Letter from TVA to NRC, CNL-16-081, "Application for Early Site Permit for Clinch River Nuclear Site," dated May 12, 2016 (Accession No. ML16139A752)
  2. NRC Memorandum, "April 17 - 28, 2017, Audit of Clinch River Nuclear Site Early Permit Application - Hydrology and Health Physics Analyses," dated April 11, 2017 (Accession No. ML17069A045)
  3. NRC Audit Plan, "Plan for Environmental Audit Related to the Clinch River Nuclear Site Early Site Permit Application," dated May 7, 2017 (Accession No. ML17088A728)
  4. Letter from TVA to NRC, CNL-17-088, "Submittal of Supplemental Information Related to the Environmental Audit in Support of Early Site Permit Application for Clinch River Nuclear Site," dated July 7, 2017

By letter dated May 12, 2016 (Reference 1), Tennessee Valley Authority (TVA) submitted an application for an early site permit for the Clinch River Nuclear (CRN) Site in Oak Ridge, TN. Between April 17, 2017 and April 27, 2017, the NRC conducted an audit of the hydrology and health physics information contained in the CRN Site Early Site Permit Application (ESPA) (Reference 2). During the face-to-face portion of the NRC audit held at the Bechtel Power Corporation (Bechtel) offices in Reston, VA, the NRC deferred hydrology audit information needs 01e, 23, 25b, 31, and 37 to discussions during the environmental audit to coincide with the availability of some of the NRC reviewers.

Between May 15, 2017 and May 31, 2017, the NRC conducted an audit of the environmental information contained in the CRN Site ESPA (Reference 3). During the face-to-face portion of the audit held at the TVA Knoxville, TN offices, the NRC requested that TVA provide supplemental information in support of the environmental audit. By letter dated July 7, 2017 (Reference 4), TVA submitted supplemental information related to the environmental audit. Enclosure 1 of Reference 4 included a table listing the environmental audit information needs for which TVA has agreed to provide supplemental information. Sixteen of the listed information needs were addressed in the Reference 4 letter.

Enclosure 1 to this letter provides an updated table listing the environmental audit information needs for which TVA has agreed to provide supplemental information. Enclosure 2 contains supplemental information for environmental audit information needs Hydrology - Groundwater (HY-GW-02 and HY-GW-13) and addresses information needs 01e and 23 (deferred from the hydrology audit). Supplemental information addressing the remaining environmental audit information needs will be provided by separate letter, as indicated in the Enclosure 1 table.

Enclosure 2 contains Site Safety Analysis Report and Environmental Report markups, as required to support the information needs. The markups will be incorporated in a future revision of the early site permit application.

There are no new regulatory commitments associated with this submittal. If any additional information is needed, please contact Dan Stout at (423) 751-7642.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 18th day of July 2017.

Respectfully,

 David P. Stout for

J. W. Shea  
Vice President, Nuclear Regulatory Affairs & Support Services

Enclosures:

1. Supplemental Information Associated with Environmental Audit Information Needs
2. Hydrology - Groundwater Supplemental Information

cc (see page 3)

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## ENCLOSURE 1

### Supplemental Information Associated with Environmental Audit Information Needs

By letter dated May 12, 2016 (Reference 1), Tennessee Valley Authority (TVA) submitted an application for an early site permit for the Clinch River Nuclear (CRN) Site in Oak Ridge, TN. Between April 17, 2017 and April 27, 2017, the NRC conducted an audit of the hydrology and health physics information contained in the CRN Site Early Site Permit Application (ESPA) (Reference 2). During the face-to-face portion of the NRC audit held at the Bechtel Power Corporation (Bechtel) offices in Reston, VA, the NRC deferred hydrology audit information needs 01e, 23, 25b, 31, and 37 to discussions during the environmental audit to coincide with the availability of some of the NRC reviewers.

Between May 15, 2017 and May 31, 2017, the NRC conducted an audit of the environmental information contained in the CRN Site ESPA (Reference 3). During the face-to-face portion of the audit held at the TVA Knoxville, TN offices, the NRC requested that TVA provide supplemental information in support of the environmental audit. By letter dated July 7, 2017 (Reference 4), TVA submitted supplemental information related to the environmental audit. Enclosure 1 of Reference 4 included a table listing the environmental audit information needs for which TVA has agreed to provide supplemental information. Sixteen of the listed information needs were addressed in the Reference 4 letter.

This enclosure provides an updated table listing the environmental audit information needs for which TVA has agreed to provide supplemental information. The table below indicates which enclosure contains the supplemental information that addresses the audit information needs, arranged by topic area. The supplemental information for environmental audit information need HY-GW-13 addresses information needs 01e and 23 (deferred from the hydrology audit). Supplemental information addressing the remaining environmental audit information needs will be provided by separate letter, as indicated in the table.

The table below also indicates where supplemental information provided for an audit information need includes Site Safety Analysis Report (SSAR) and Environmental Report (ER) markups. The markups provided in Enclosure 2 will be incorporated in a future revision of the ESPA.

#### References:

1. Letter from TVA to NRC, CNL-16-081, "Application for Early Site Permit for Clinch River Nuclear Site," dated May 12, 2016 (Accession No. ML16139A752)
2. NRC Memorandum, "April 17 - 28, 2017, Audit of Clinch River Nuclear Site Early Permit Application - Hydrology and Health Physics Analyses," dated April 11, 2017 (Accession No. ML17069A045)
3. NRC Audit Plan, "Plan for Environmental Audit Related to the Clinch River Nuclear Site Early Site Permit Application," dated May 7, 2017 (Accession No. ML17088A728)
4. Letter from TVA to NRC, CNL-17-088, "Submittal of Supplemental Information Related to the Environmental Audit in Support of Early Site Permit Application for Clinch River Nuclear Site," dated July 7, 2017

## ENCLOSURE 1

### Supplemental Information Associated with Environmental Audit Information Needs

IN Number	Enclosure	Associated SSAR/ER Markups	Planned Letter
AE-02	NA	NA	Letter #1
AE-04	NA	NA	Letter #1
ALT-01	NA	NA	Letter #1
HY-GW-14	NA	NA	Letter #1
LU-01	NA	NA	Letter #1
LU-06	NA	NA	Letter #1
LU-07	NA	NA	Letter #1
LU-08	NA	NA	Letter #1
RH-03	NA	NA	Letter #1
RH-04	NA	NA	Letter #1
STO-06	NA	NA	Letter #1
TE-01	NA	NA	Letter #1
TE-04	NA	NA	Letter #1
TE-13	NA	NA	Letter #1
TE-21	NA	NA	Letter #1
TE-22	NA	NA	Letter #1
CR-01b	NA	NA	Letter #2
CR-02	NA	NA	Letter #2
CR-04	NA	NA	Letter #2
CR-05a	NA	NA	Letter #2
CR-05b	NA	NA	Letter #2
CR-06	NA	NA	Letter #2
CR-07	NA	NA	Letter #2
HY-SW-02	NA	NA	Letter #2
HY-SW-06	NA	NA	Letter #2
HY-SW-08	NA	NA	Letter #2
HY-SW-09	NA	NA	Letter #2
HY-SW-10	NA	NA	Letter #2
HY-SW-12	NA	NA	Letter #2
HY-SW-14	NA	NA	Letter #2
HY-SW-16	NA	NA	Letter #2
HY-SW-17	NA	NA	Letter #2
LU-02	NA	NA	Letter #2
LU-04	NA	NA	Letter #2
NR-01	NA	NA	Letter #2
STO-01	NA	NA	Letter #2
STO-02	NA	NA	Letter #2
STO-03	NA	NA	Letter #2
STO-04	NA	NA	Letter #2
STO-05	NA	NA	Letter #2
STO-07	NA	NA	Letter #2
STO-08	NA	NA	Letter #2
STO-09	NA	NA	Letter #2

## ENCLOSURE 1

### Supplemental Information Associated with Environmental Audit Information Needs

IN Number	Enclosure	Associated SSAR/ER Markups	Planned Letter
STO-11	NA	NA	Letter #2
STO-13	NA	NA	Letter #2
TR-01	NA	NA	Letter #2
TR-03/TR-04	NA	NA	Letter #2
TR-05	NA	NA	Letter #2
TR-06	NA	NA	Letter #2
TR-07	NA	NA	Letter #2
TR-08	NA	NA	Letter #2
TR-09	NA	NA	Letter #2
TR-10	NA	NA	Letter #2
TR-11	NA	NA	Letter #2
TR-16	NA	NA	Letter #2
HY-GW-02	NA	ER Subsection 2.3.2.2.2, Table 2.3.2-7, and Figure 2.3.2-5	This Letter
HY-GW-13*	NA	SSAR Subsection 2.4.1.2.2, Table 2.4.1-5, and Figure 2.4.1-7	This Letter
HY-GW-15**	NA	NA	Letter #4

Notes:

- \* The supplemental information provided for Information Need (IN) HY-GW-13 also addresses the information needed to address deferred Hydrology Audit Information Needs 01e and 23.
- \*\* The supplemental information provided for IN HY-GW-15 will also address the information needed to address deferred Hydrology Audit Information Needs 25b, 31, and 37.

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

By letter dated May 12, 2016 (Reference 1), Tennessee Valley Authority (TVA) submitted an application for an early site permit for the Clinch River Nuclear (CRN) Site in Oak Ridge, TN. Between April 17, 2017 and April 27, 2017, the NRC conducted an audit of the hydrology and health physics analyses information contained in the CRN Site Early Site Permit Application (ESPA) (Reference 2). During the face-to-face portion of the NRC audit held at the Bechtel Power Corporation (Bechtel) offices in Reston, VA, the NRC deferred hydrology audit information needs (INs) 01e, 23, 25b, 31, and 37 to discussions during the environmental audit to coincide with the availability of some of the NRC reviewers.

Between May 15, 2017 and May 31, 2017, the NRC conducted an audit of the Environmental Report (ER) information contained in the CRN Site ESPA (Reference 3). During the face-to-face portion of the audit held at the TVA offices in Knoxville, TN, the NRC requested that TVA provide supplemental information associated with ER Section 2.3, "Water," to reflect the information that TVA provided during the audit.

This enclosure provides the requested supplemental information, including updates to portions of Site Safety Analysis Report (SSAR) Section 2.4, "Hydrologic Engineering," and ER Section 2.3. Specifically, this enclosure provides supplemental information associated with audit INs Hydrology - Ground Water (HY-GW-02 and HY-GW-13). The supplemental information for environmental audit IN HY-GW-13 addresses INs 01e and 23 (deferred from the hydrology audit). Supplemental information associated with audit IN HY-GW-15, including supplemental information addressing INs 25b, 31, and 37 (deferred from the hydrology audit), will be provided in a separate submittal, as indicated in Enclosure 1. The SSAR and ER markups will be incorporated in a future revision of the ESPA.

#### References:

1. Letter from TVA to NRC, CNL-16-081, "Application for Early Site Permit for Clinch River Nuclear Site," dated May 12, 2016
2. NRC Memorandum, "April 17 - 28, 2017, Audit of Clinch River Nuclear Site Early Permit Application - Hydrology and Health Physics Analyses," dated April 11, 2017 (Accession No. ML17069A045)
3. NRC Audit Plan, "Plan for Environmental Audit Related to the Clinch River Nuclear Site Early Site Permit Application," dated May 7, 2017 (Accession No. ML17088A728)

#### Supplemental Information associated with NRC Information Need Hydrology - Ground Water (HY-GW-02 and HY-GW-13, including INs 01e and 23):

During the groundwater discussion at the environmental audit, the NRC staff requested that TVA provide supplemental information regarding individual groundwater wells in the vicinity of the CRN Site. Therefore, supplemental information addressing individual groundwater users within a 1.5-mile radius of the CRN Site is being added including, a new paragraph at the end of ER Section 2.3.2.2.2, new ER Table 2.3.2-7, and new ER Figure 2.3.2-5.

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

Also, during the groundwater discussion at the environmental audit, TVA was requested to provide supplemental information for individual groundwater users in the vicinity of the CRN Site to address INs 01e and 23. Therefore, supplemental information addressing individual groundwater users within a 1.5-mile radius of the CRN Site is being added including, a new paragraph at the end of SSAR Subsection 2.4.1.2.2, new SSAR Table 2.4.1-5, and new SSAR Figure 2.4.1-7.

**ER Subsection 2.3.2.2.2 is being revised with the addition of a new paragraph at the end of the subsection as indicated. Underlines indicate text to be added.**

2.3.2.2.2 Current Groundwater Use

...

Information pertaining to individual wells in the vicinity of the CRN Site was obtained from the Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources, Drinking Water Unit. This information was derived from water well driller reports submitted to TDEC following completion of water well drilling. Such reports include well location by either latitude and longitude or street address, date completed, static level, total depth, estimated yield, proposed use of well, casing depth, and finish type (i.e., open hole or screened). Figure 2.3.2-5 shows the location of individual wells within a 1.5-mile radius of the CRN Site, all of which are located in Roane County. Table 2.3.2-7 lists for each well the proposed use, estimated yield, total depth, casing depth, expected geologic unit in which the wells are located, and finish type. There are 32 residential wells, three commercial wells, and one farm well for a total of 36 individual wells. Estimated well yields range from 0.5 to 75 gallons per minute (three wells had no estimated well yield). Total depths range from 42 to 900 feet below grade, while casing depths range from 20 to 190 feet below grade. Twenty-eight of the wells are finished as open hole wells, while no finish type information was available for the remaining wells. The geologic unit in which wells are completed was inferred from regional geologic mapping, as this information was not available from TDEC. The actual geologic unit(s) from which a well obtains water may differ from what is shown in Table 2.3.2-7, depending on the exact well location and the well and casing depths.



## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

ER Table 2.3.2-7 (new table) is being added as indicated. Underlines indicate text to be added.

**Table 2.3.2-7 (Sheet 1 of 2)**  
**Characteristics of Individual Wells Located Within a 1.5-mile Radius of the CRN Site**

<u>Well Number</u>	<u>Well Use</u>	<u>Estimated Yield (gpm)</u>	<u>Total Depth (feet)</u>	<u>Casing Depth (feet)</u>	<u>Geologic Unit</u>	<u>Finish Type</u>
<u>14500062</u>	<u>Residential</u>	<u>10</u>	<u>100</u>	<u>25</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14500100</u>	<u>Residential</u>	<u>10</u>	<u>92</u>	<u>45</u>	<u>Copper Ridge Dolomite</u>	<u>NR</u>
<u>14500274</u>	<u>Residential</u>	<u>10</u>	<u>195</u>	<u>75</u>	<u>Maynardville Limestone</u>	<u>NR</u>
<u>14501409</u>	<u>Residential</u>	<u>5</u>	<u>160</u>	<u>42</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14501415</u>	<u>Commercial</u>	<u>2</u>	<u>400</u>	<u>25</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14501867</u>	<u>Residential</u>	<u>NR</u>	<u>180</u>	<u>21</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14501990</u>	<u>Residential</u>	<u>20</u>	<u>145</u>	<u>28</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502043</u>	<u>Residential</u>	<u>7</u>	<u>85</u>	<u>31</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502044</u>	<u>Residential</u>	<u>7</u>	<u>85</u>	<u>31</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502059</u>	<u>Residential</u>	<u>15</u>	<u>102</u>	<u>34</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502075</u>	<u>Residential</u>	<u>5</u>	<u>390</u>	<u>20</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502085</u>	<u>Farm</u>	<u>2</u>	<u>340</u>	<u>41</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502157</u>	<u>Commercial</u>	<u>2</u>	<u>500</u>	<u>62</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502179</u>	<u>Residential</u>	<u>20</u>	<u>275</u>	<u>105</u>	<u>Witten Formation</u>	<u>Open Hole</u>
<u>14502230</u>	<u>Residential</u>	<u>7</u>	<u>275</u>	<u>89</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14509007</u>	<u>Residential</u>	<u>NR</u>	<u>NR</u>	<u>NR</u>	<u>Rockdell Formation</u>	<u>NR</u>
<u>14509008</u>	<u>Residential</u>	<u>NR</u>	<u>42</u>	<u>42</u>	<u>Maynardville Limestone</u>	<u>NR</u>
<u>20005513</u>	<u>Residential</u>	<u>3</u>	<u>526</u>	<u>126</u>	<u>Chepultepec Dolomite</u>	<u>Open Hole</u>
<u>20021254</u>	<u>Residential</u>	<u>9</u>	<u>300</u>	<u>62</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>20022808</u>	<u>Residential</u>	<u>3</u>	<u>575</u>	<u>104</u>	<u>Chepultepec Dolomite</u>	<u>Open Hole</u>
<u>20053044</u>	<u>Residential</u>	<u>30</u>	<u>240</u>	<u>126</u>	<u>Maynardville Limestone</u>	<u>Open Hole</u>
<u>20061323</u>	<u>Residential</u>	<u>30</u>	<u>160</u>	<u>105</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>20064090</u>	<u>Residential</u>	<u>1</u>	<u>320</u>	<u>105</u>	<u>Fleanor Shale</u>	<u>Open Hole</u>
<u>20074093</u>	<u>Residential</u>	<u>4</u>	<u>900</u>	<u>42</u>	<u>Pumpkin Valley Shale</u>	<u>Open Hole</u>
<u>20082006</u>	<u>Residential</u>	<u>0.5</u>	<u>610</u>	<u>126</u>	<u>Moccasin Formation</u>	<u>Open Hole</u>

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

**Table 2.3.2-7 (Sheet 2 of 2)**  
**Characteristics of Individual Wells Located Within a 1.5-mile Radius of the CRN Site**

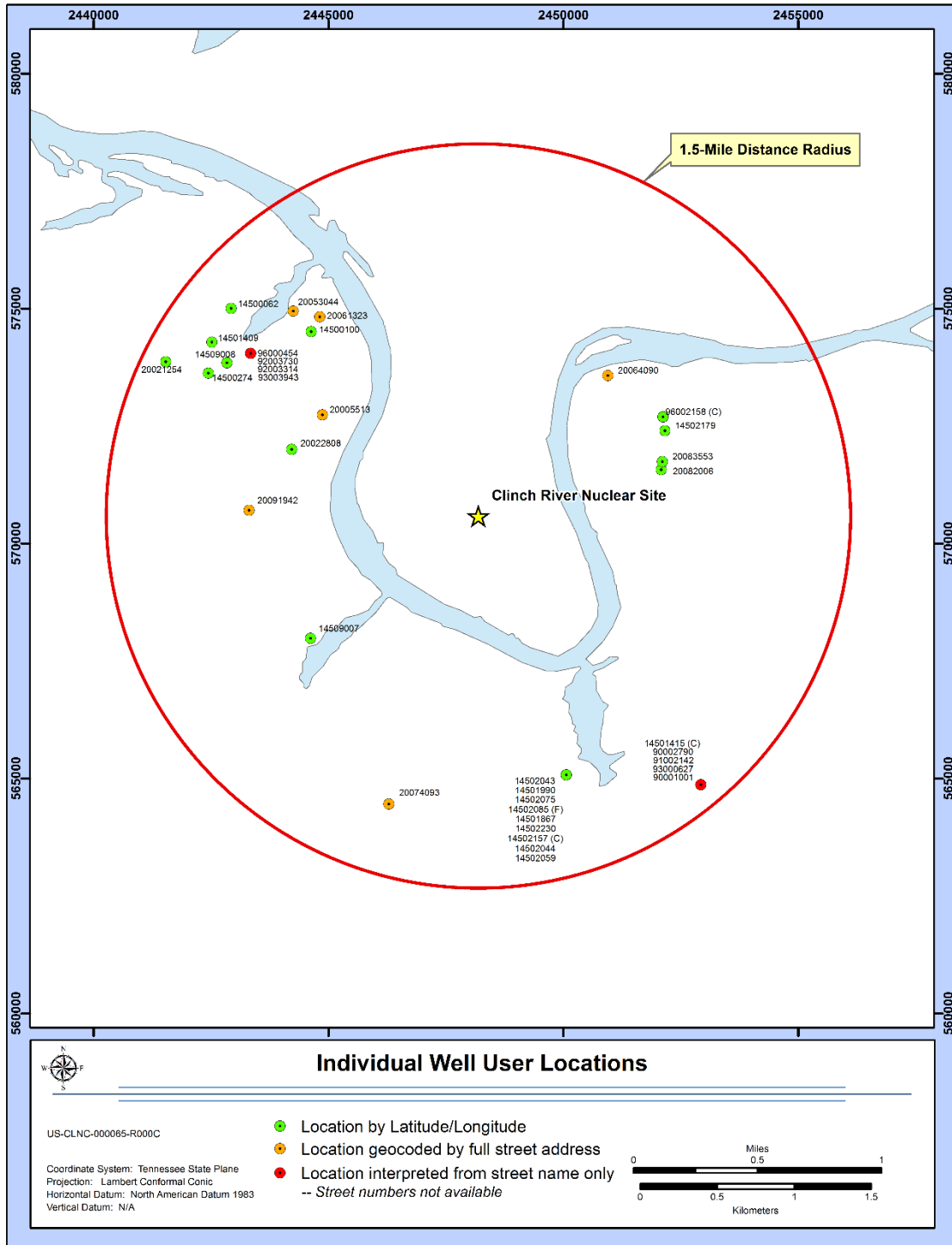
<u>Well Number</u>	<u>Well Use</u>	<u>Estimated Yield (gpm)</u>	<u>Total Depth (feet)</u>	<u>Casing Depth (feet)</u>	<u>Geologic Unit</u>	<u>Finish Type</u>
<u>20083553</u>	<u>Residential</u>	<u>7</u>	<u>200</u>	<u>63</u>	<u>Moccasin Formation</u>	<u>Open Hole</u>
<u>20091942</u>	<u>Residential</u>	<u>50</u>	<u>220</u>	<u>190</u>	<u>Kingsport Formation</u>	<u>Open Hole</u>
<u>90001001</u>	<u>Residential</u>	<u>2</u>	<u>470</u>	<u>38</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>90002790</u>	<u>Residential</u>	<u>7</u>	<u>373</u>	<u>41</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>91002142</u>	<u>Residential</u>	<u>75</u>	<u>547</u>	<u>41</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>92003314</u>	<u>Residential</u>	<u>4</u>	<u>360</u>	<u>41</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>92003730</u>	<u>Residential</u>	<u>3</u>	<u>503</u>	<u>104</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>93000627</u>	<u>Residential</u>	<u>1</u>	<u>300</u>	<u>62</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>93003943</u>	<u>Residential</u>	<u>30</u>	<u>118</u>	<u>36</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>96000454</u>	<u>Residential</u>	<u>3</u>	<u>465</u>	<u>126</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>96002158</u>	<u>Commercial</u>	<u>3</u>	<u>305</u>	<u>75</u>	<u>Witten Formation</u>	<u>Open Hole</u>

Note: NR denotes "Not Reported" and gpm is gallons per minute; the geologic units in which wells are completed was inferred from regional geological mapping; total depth and casing depth are measured from grade.

# ENCLOSURE 2

## Hydrology - Groundwater Supplemental Information

ER Figure 2.3.2-5 (new figure) is being added as indicated.



Note: (F) indicates farm well, (C) indicates commercial well.

**Figure 2.3.2-5  
 Individual Well Locations Within a 1.5-mile Radius of the CRN Site**

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

**SSAR Subsection 2.4.1.2.2 is added as indicated. Underlines indicate text to be added.**

#### 2.4.1.2.2 Groundwater

Subsection 2.4.12 contains a detailed description of the hydrogeologic conditions at and in the vicinity of the CRN Site and includes the regional and local groundwater resources that could be affected by the construction and operation of SMRs at the CRN Site. The regional and site-specific data on the physical and hydrologic characterization of these groundwater resources are summarized in order to provide the basic data for an evaluation of impacts on the aquifers in the area.

Subsection 2.4.12.2.1.2 provides information regarding current groundwater users and identifies:

- Community water systems, which serve the same people year-round (e.g., homes)
- Non-transient, non-community water systems, which serve the same people but not year-round (e.g., schools that have their own water supply)
- Transient, non-community water systems, which do not consistently serve the same people (e.g., rest stops, campgrounds)

Information pertaining to individual wells in the vicinity of the CRN Site was obtained from the Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources, Drinking Water Unit. This information was derived from water well driller reports submitted to TDEC following completion of water well drilling. Such reports include well location by either latitude and longitude or street address, date completed, static level, total depth, estimated yield, proposed use of well, casing depth, and finish type (i.e., open hole or screened). Figure 2.4.1-7 shows the location of individual wells within a 1.5-mile radius of the CRN Site, all of which are located in Roane County. Table 2.4.1-5 lists for each well the proposed use, estimated yield, total depth, casing depth, expected geologic unit in which the wells are completed, and finish type. There are 32 residential wells, three commercial wells, and one farm well for a total of 36 individual wells. Estimated well yields range from 0.5 to 75 gallons per minute (three wells had no estimated well yield). Total depths range from 42 to 900 feet below grade, while casing depths range from 20 to 190 feet below grade. Twenty-eight of the wells are finished as open hole wells, while no finish type information was available for the remaining wells. The geologic unit in which wells are completed was inferred from regional geological mapping, as this information was not available from TDEC. The actual geologic unit(s) from which a well obtains water may differ from what is shown in Table 2.4.1-5, depending on the exact well location and the well and casing depths.

The CRN Site plant design does not require groundwater as a source of safety-related water supply to the plant, nor does groundwater serve as a source of cooling water, potable water, or other plant needs. Makeup water for the closed-cycle cooling system is sourced from the Clinch River arm of the Watts Bar Reservoir, while potable and other water comes from the Oak Ridge Department of Public Works.

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

SSAR Table 2.4.1-5 (new table) is being added as indicated. Underlines indicate text to be added.

**Table 2.4.1-5 (Sheet 1 of 2)**  
**Characteristics of Individual Wells Located Within a 1.5-mile Radius of the CRN Site**

<u>Well Number</u>	<u>Well Use</u>	<u>Estimated Yield (gpm)</u>	<u>Total Depth (feet)</u>	<u>Casing Depth (feet)</u>	<u>Geologic Unit</u>	<u>Finish Type</u>
<u>14500062</u>	<u>Residential</u>	<u>10</u>	<u>100</u>	<u>25</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14500100</u>	<u>Residential</u>	<u>10</u>	<u>92</u>	<u>45</u>	<u>Copper Ridge Dolomite</u>	<u>NR</u>
<u>14500274</u>	<u>Residential</u>	<u>10</u>	<u>195</u>	<u>75</u>	<u>Maynardville Limestone</u>	<u>NR</u>
<u>14501409</u>	<u>Residential</u>	<u>5</u>	<u>160</u>	<u>42</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14501415</u>	<u>Commercial</u>	<u>2</u>	<u>400</u>	<u>25</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>14501867</u>	<u>Residential</u>	<u>NR</u>	<u>180</u>	<u>21</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14501990</u>	<u>Residential</u>	<u>20</u>	<u>145</u>	<u>28</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502043</u>	<u>Residential</u>	<u>7</u>	<u>85</u>	<u>31</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502044</u>	<u>Residential</u>	<u>7</u>	<u>85</u>	<u>31</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502059</u>	<u>Residential</u>	<u>15</u>	<u>102</u>	<u>34</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502075</u>	<u>Residential</u>	<u>5</u>	<u>390</u>	<u>20</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502085</u>	<u>Farm</u>	<u>2</u>	<u>340</u>	<u>41</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502157</u>	<u>Commercial</u>	<u>2</u>	<u>500</u>	<u>62</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14502179</u>	<u>Residential</u>	<u>20</u>	<u>275</u>	<u>105</u>	<u>Witten Formation</u>	<u>Open Hole</u>
<u>14502230</u>	<u>Residential</u>	<u>7</u>	<u>275</u>	<u>89</u>	<u>Dismal Group Formation (Maryville Limestone)</u>	<u>Open Hole</u>
<u>14509007</u>	<u>Residential</u>	<u>NR</u>	<u>NR</u>	<u>NR</u>	<u>Rockdell Formation</u>	<u>NR</u>
<u>14509008</u>	<u>Residential</u>	<u>NR</u>	<u>42</u>	<u>42</u>	<u>Maynardville Limestone</u>	<u>NR</u>
<u>20005513</u>	<u>Residential</u>	<u>3</u>	<u>526</u>	<u>126</u>	<u>Chepultepec Dolomite</u>	<u>Open Hole</u>
<u>20021254</u>	<u>Residential</u>	<u>9</u>	<u>300</u>	<u>62</u>	<u>Nolichucky Shale</u>	<u>NR</u>
<u>20022808</u>	<u>Residential</u>	<u>3</u>	<u>575</u>	<u>104</u>	<u>Chepultepec Dolomite</u>	<u>Open Hole</u>
<u>20053044</u>	<u>Residential</u>	<u>30</u>	<u>240</u>	<u>126</u>	<u>Maynardville Limestone</u>	<u>Open Hole</u>
<u>20061323</u>	<u>Residential</u>	<u>30</u>	<u>160</u>	<u>105</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>20064090</u>	<u>Residential</u>	<u>1</u>	<u>320</u>	<u>105</u>	<u>Fleanor Shale</u>	<u>Open Hole</u>
<u>20074093</u>	<u>Residential</u>	<u>4</u>	<u>900</u>	<u>42</u>	<u>Pumpkin Valley Shale</u>	<u>Open Hole</u>
<u>20082006</u>	<u>Residential</u>	<u>0.5</u>	<u>610</u>	<u>126</u>	<u>Moccasin Formation</u>	<u>Open Hole</u>

## ENCLOSURE 2

### Hydrology - Groundwater Supplemental Information

**Table 2.4.1-5 (Sheet 2 of 2)**  
**Characteristics of Individual Wells Located Within a 1.5-mile Radius of the CRN Site**

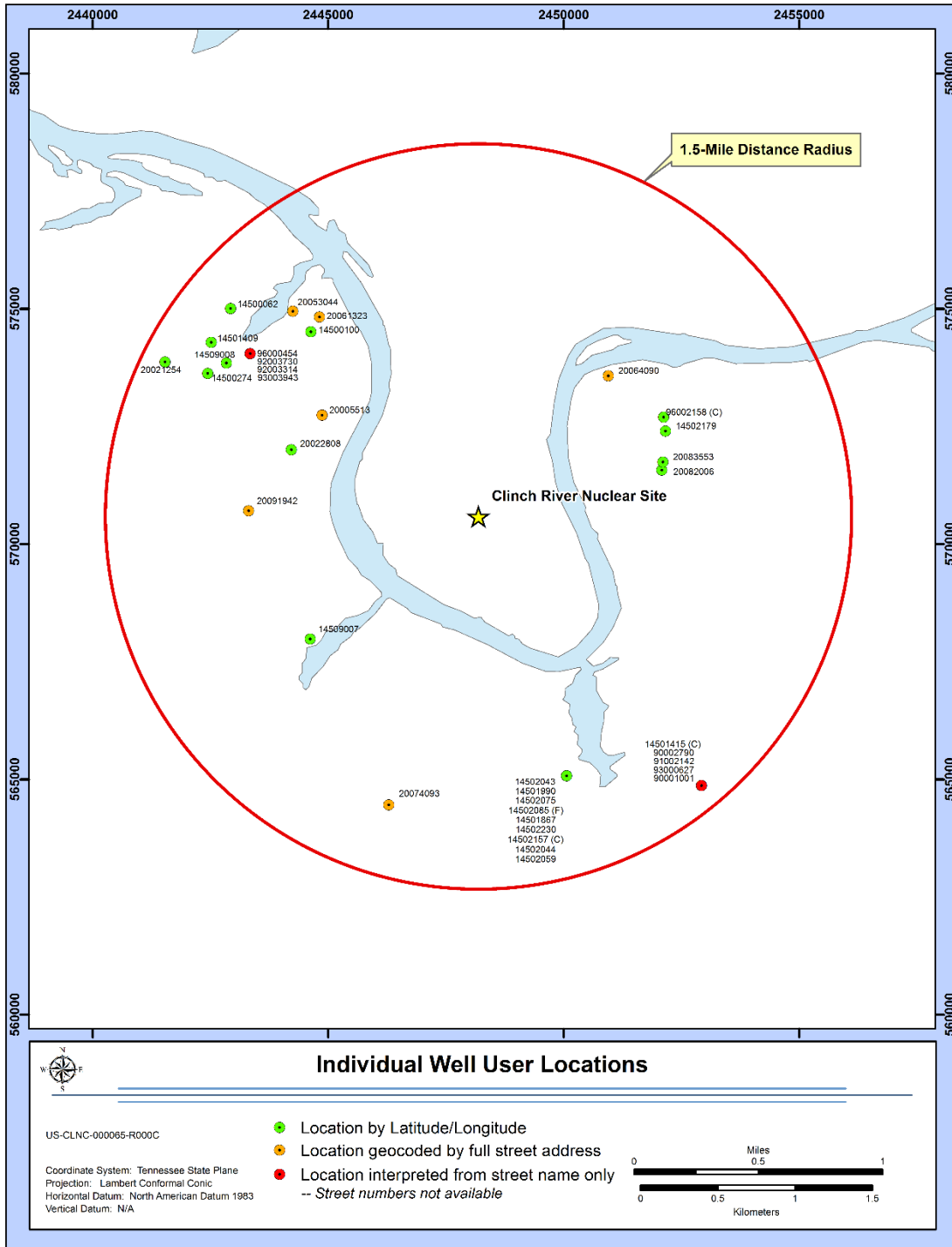
<u>Well Number</u>	<u>Well Use</u>	<u>Estimated Yield (gpm)</u>	<u>Total Depth (feet)</u>	<u>Casing Depth (feet)</u>	<u>Geologic Unit</u>	<u>Finish Type</u>
<u>20083553</u>	<u>Residential</u>	<u>7</u>	<u>200</u>	<u>63</u>	<u>Moccasin Formation</u>	<u>Open Hole</u>
<u>20091942</u>	<u>Residential</u>	<u>50</u>	<u>220</u>	<u>190</u>	<u>Kingsport Formation</u>	<u>Open Hole</u>
<u>90001001</u>	<u>Residential</u>	<u>2</u>	<u>470</u>	<u>38</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>90002790</u>	<u>Residential</u>	<u>7</u>	<u>373</u>	<u>41</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>91002142</u>	<u>Residential</u>	<u>75</u>	<u>547</u>	<u>41</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>92003314</u>	<u>Residential</u>	<u>4</u>	<u>360</u>	<u>41</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>92003730</u>	<u>Residential</u>	<u>3</u>	<u>503</u>	<u>104</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>93000627</u>	<u>Residential</u>	<u>1</u>	<u>300</u>	<u>62</u>	<u>Nolichucky Shale</u>	<u>Open Hole</u>
<u>93003943</u>	<u>Residential</u>	<u>30</u>	<u>118</u>	<u>36</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>96000454</u>	<u>Residential</u>	<u>3</u>	<u>465</u>	<u>126</u>	<u>Copper Ridge Dolomite</u>	<u>Open Hole</u>
<u>96002158</u>	<u>Commercial</u>	<u>3</u>	<u>305</u>	<u>75</u>	<u>Witten Formation</u>	<u>Open Hole</u>

Note: NR denotes "Not Reported" and gpm is gallons per minute; the geologic units in which wells are completed was inferred from regional geological mapping; total depth and casing depth are measured from grade.

# ENCLOSURE 2

## Hydrology - Groundwater Supplemental Information

SSAR Figure 2.4.1-7 (new figure) is being added as indicated.



Note: (F) indicates farm well, (C) indicates commercial well.

**Figure 2.4.1-7**  
**Individual Well Locations Within a 1.5-mile Radius of the CRN Site**