

**VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1
SUBSEQUENT LICENSE RENEWAL APPLICATION ENVIRONMENTAL REVIEW
REQUESTS FOR CONFIRMATION OF INFORMATION**

Regulatory Basis

Licensees are required by Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51.53(c)(1) to submit with its application a separate document entitled “Applicant’s Environmental Report—Operating License Renewal Stage.” The U.S. Nuclear Regulatory Commission’s (NRC) regulations at 10 CFR Part 51, which implement section 102(2) of the National Environmental Policy Act of 1969, as amended (NEPA), include requirements for applicants to provide information as may be useful in aiding the NRC staff in complying with NEPA. As part of its review, the NRC staff is required to prepare an Environmental Impact Statement. Review guidance for the staff is provided in NUREG–1555, Supplement 1, Revision 1, “Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Supplement 1 – Operating License Renewal.”

Requests for Confirmation of Information (RCIs)

The letter to Eric Carr, President, Nuclear Operations, and Chief Nuclear Officer, dated April 18, 2024 (Agencywide Documents Access and Management System ML24108A039), contained an audit plan, which included a list of information needs with unique identifiers. During the Virgil C. Summer Nuclear Station, Unit 1 (VCSNS) subsequent license renewal (SLR) environmental audit, the NRC staff reviewed documents that were made available on the applicant’s electronic information portal in response to the staff audit needs. The staff also participated in breakout sessions with applicant personnel for certain resource areas to gather information that will likely be used in the site-specific environmental impact statement. To the best of the staff’s knowledge, this information on the applicant’s electronic information portal and discussed in breakout sessions is not currently on the docket or publicly accessible. The NRC staff requests that the applicant submits confirmation that the information gathered from the audit and listed below is correct or provides the associated corrected information.

1) RCI ALT-1

Please confirm the following: Under both Combination Alternative 1 with the natural gas combined cycle (NGCC) component (ER Section E7.2.3.3) and Combination Alternative 2 with a small modular reactor (SMR) component (ER Section E7.2.3.4), the balance of needed replacement megawatts (MWs) would be provided by solar generation. Because the NGCC component was 700 MW gross and the SMR component was 884 MW net, more solar MW was needed to couple with NGCC in Combination Alternative 1 than the solar needed for Combination Alternative 2. The VCSNS Units 2 and 3 site was not large enough to accommodate the greater amount of solar MW needed for Combination Alternative 1, but potentially available land on the VCSNS Units 2 and 3 site could accommodate the needed solar for Combination Alternative 2. As noted in environmental report (ER) Section E7.2.3.4, “Locating the SMR and solar installation on the VCSNS Units 2 and 3 abandoned site would minimize land use conversion...”

2) RCI ALT-2

Please confirm the following: The information provided by the U.S. Department of Energy and presented in reports showing similar alternatives, an approximately 60–100 MW lithium-ion

battery would be required per 100 MWe installation. For both Combination Alternatives 1 and 2, approximately 270–440 MW of battery storage would be required. Additional storage to ensure that peak energy demand is met could also be recommended per installation.

3) RCI ALT-3

Please confirm the following: Only Dominion Energy South Carolina (DESC) interconnected solar projects are likely to be viable alternatives from the perspective of total cost of energy delivered energy. A long-term transmission reservation request(s) would need to be submitted to ascertain any constraints. To transport power across other transmission system(s) to DESC would incur transmission fees.

4) RCI ALT-4

Please confirm the following: Offsite locations were not considered for the NGCC and SMR portions of the alternatives. Locating the alternatives on site did not unnecessarily inflate adverse environmental land use, terrestrial ecology, and offsite noise impacts.

5) RCI AQN-2

As discussed during the environmental audit Air Quality breakout session and in response to information need AQN-2, please confirm the following: Dominion Energy is not required to monitor or measure particulate matter emissions for the cooling tower, no particulate matter emissions values are available, and the cooling tower is equipped with a drift eliminator.

6) RCI AQN-3

As discussed during the environmental audit Air Quality breakout session and in response to information need AQN-3, please confirm that Dominion Energy has not conducted ozone or nitrogen oxide emission field tests of the VCSNS in-scope transmission lines.

7) RCI AQU-2

From the information gathered during the environmental site audit, please confirm the following: There have been no fish kills observed in the VCSNS discharge bay or adjacent areas in the last 10 years and that no further dredging of the discharge bay is anticipated during the subsequent license renewal term.

8) RCI CI-2

Please confirm that Dominion Energy has not identified any new projects or activities within the vicinity of VCSNS that may result in a cumulative effect.

9) RCI EJ-1

Please confirm the following: VCSNS has provided numerous community outreach initiatives to engage the public including site tours, information videos, and career days. These outreach initiatives include mention of the subsequent license renewal application. To date, there have been no feedback or concerns expressed by the public about the continued operation of the VCSNS.

10) RCI EJ-2

Please confirm the following: There have been no studies performed in the vicinity of the VCSNS site that have identified any subsistence populations or special cultural practices (i.e., such as the use of a particular place for ceremonial purposes by American Indians and/or Tribes). Environmental Justice was evaluated as part of the VCSNS SLR ER and this information is provided in Sections E3.11 and E4.10. No new or additional information regarding environmental justice has been identified since the ER was submitted.

11) RCI FPE-4

From information gathered during the environmental audit, the NRC staff understands that Dominion Energy has both corporate and site-specific environmental policies and procedures relating to Endangered Species Act (ESA) compliance. These documents summarize the requirements of the ESA, explain how these requirements apply to Dominion's sites and activities, and detail the protocols and reporting procedures that Dominion Energy personnel and contractors must follow to consider listed species before undertaking activities at the VCSNS site.

Specific to listed bats (currently the Northern Long-Eared Bat), the Dominion corporate procedure specifies actions in listed South Carolina counties. Dominion rates risk of bat interaction (low, medium, high) based on activity location (within suitable forest habitat plus 1000 ft buffer), type of activity, and bat expected activity by time of year. Each risk level has specific protocols for Dominion Energy staff and contractors.

- Low risk activity protocols call for training crews to avoid bat interactions, proceed with work, but report any bat incidents. These low-risk activities occur outside of suitable habitat plus buffers and/or do not involve removing woody plants ≥ 3 " DBH from February 15-April 14 or August 1-December 14.
- Medium risk activity protocols include the low-risk activity protocols but include increased risk that bat interactions are more likely in forested habitats, particularly if woody plants ≥ 3 " DBH are to be cut or removed. If work is to occur within forested wetlands, then Dominion Energy's Environmental Services must be contacted. Medium risk activities require 60 days or more for corporate review.
- Higher risk activity protocols are for tree felling activities within suitable habitat plus buffers where there is the highest likelihood of bat interactions. These are projects with more than 10 acres of felling trees ≥ 3 " DBH at any time. Surveys are required to determine if activities can proceed. Felling Corporate review requires more than 60 days. None of the proposed SLR operational activities meet the definition of high-risk activities.

Please confirm that the above summary is correct.

12) RCI GE-1

Please confirm the following statements in relation to sediment and erosion control at the VCSNS site:

- a) The sediment and erosion control program is described in the VCSNS Stormwater Pollution Prevention Plan (SWPPP).

- b) There is no separate sediment and erosion control program outside the SWPPP.
- c) VCSNS currently has authorization to discharge under the South Carolina Department of Health and Environmental Control (SCDHEC)'s Industrial General Permit (SC000000).
- d) When a situation necessitates the need for the use of a sediment and erosion control program, a condition report would be written to describe the issue and associated corrective actions.
- e) Best management practices, such as secondary containment and removal of pollution pathways, are used at the site to prevent potential releases.

13) RCI GEN-2

Please confirm that there have been no unplanned or inadvertent releases of radioactive materials since the development of the VCSNS ER dated August 17, 2023 (ML23233A174).

14) RCI GHG-1/GHG-2

As discussed during the environmental audit's Greenhouse Gas Emission (GHG) and Climate Change breakout session and in response to information needs GHG-1 and GHG-2, please confirm the following:

- a) Table 3.3-10 GHG emissions from combustion sources accounts for emissions from the use of the rented auxiliary boiler for year 2021.
- b) The auxiliary boiler is used for outages only and its emissions do not occur every year.
- c) GHG emissions from the boiler accounted for in table 3.3-10 of the ER was calculated using the U.S. Environmental Protection Agency's (EPA's) Emission Factors for Greenhouse Gas Inventories table 1, not emission factors in AP-42.
- d) GHG emissions presented in table 3.3-10 of the ER are based on the maximum runtime (500 hours) and fuel use conversion factors for the diesel generators, not actual fuel logs for the equipment.

15) RCI GHG-3

As discussed during the environmental audit's Greenhouse Gas Emissions and Climate Change breakout session and in response to information need GHG-3, please confirm the following:

- a) VCSNS uses sulfur hexafluoride gas in breakers within the switchyards and the turbine building.
- b) Breakers are sealed and there are no emissions to report for the last 5 years.
- c) For the switchyard breakers, they are continuously monitored, they will alarm for low sulfur hexafluoride values, and sulfur hexafluoride levels are inspected once every two months during normal switchyard inspections.

- d) For the main generator breaker, it is monitored continuously, sulfur hexafluoride levels are inspected once every day during normal operator turbine building rounds, a low sulfur hexafluoride gas condition will create an alarm in the main control room, a vendor is contracted to perform a maintenance inspection of the breaker is every 6 years and add sulfur hexafluoride gas if needed.
- e) For the main generator breaker, sulfur hexafluoride addition does not occur often, but when needed the bottle is weighed before and after filling and the usage values are provided by the vendor to VCSNS.

16) RCI GW-1/SW-12

Please confirm the following statements in relation to dewatering at the site:

- a) The actual rate of dewatering is unknown, but the total rate of discharge is approximately 70,000 gallons per day per the Final Safety Analysis Report to the local storm drainage system (via Outfalls SW12 and SW13).
- b) Dewatering pumps are controlled by water level.
- c) The dewatering pumps are designed to maintain groundwater elevation on site between 402 and 373 feet above mean sea level.
- d) Dewatering well discharge from well DW-3 is discharged to the State industrial general permit (IGP) Outfall SW13 and dewatering well discharge from the remaining dewatering wells is discharged to IGP Outfall SW12.
- e) Water samples are collected from Outfalls SW12 and SW13 daily. A monthly composite sample is analyzed for gamma isotopes and a quarterly composite analyzed for tritium as part of the VCSNS Supplemental Radiological Environmental Monitoring Program.
- f) The results of this sampling are summarized in the Annual Radiological Environmental Operating Reports (AREORs) and are reported as locations 72 (SW12) and 73 (SW13). The analytical results are voluntarily included in the "Radiological Environmental Monitoring Program Summary" table for surface water.
- g) Tritium and gamma results between January 2018 and December 2023 for locations 72 and 73 are all below lower limits of detection.
- h) The number of sample results reported in table 7 (2022-2024 AREORs) or table 8 (2020 and 2021 AREORs) for surface water are different among the 2024 (12 tritium, 36 gamma), 2023 (20 tritium, 36 gamma), and 2022-2019 (36 tritium, 36 gamma) AREORs due to a change to the radiological environmental monitoring program implementing procedure. During 2023 the sampling and analysis requirements for surface water were changed revising the tritium analysis requirement to a quarterly composite. This procedure change was performed to align the implementing procedure with the actual requirements for surface water.

17) RCI GW-5

Please confirm the following statements in relation to groundwater mounding in the vicinity of monitoring locations B-22 and B-36 at the VCSNS site:

- a) The water table anomalies near monitoring locations B-22 and B-36 are likely to be the result of perched groundwater, clogged screens, or underground springs as opposed to surface water drainage leaking from a breach in the adjacent stormwater drainage system.
- b) No corrosion inhibitors used in the area supply lines were detected in samples collected from B-22 and B-36.
- c) The correct well construction elevation data (in feet above mean sea level) for B-36 are:
 - Top of casing: 434.85
 - Top of filter pack: 418.4
 - Top of screen: 415.9
 - Bottom of screen: 405.9
 - Bottom of filter pack: 405.9

18) RCI GW-6

In Section E3.6.2.4 of the ER, the text states nine systems, structures, and components (SSCs) are monitored as part of the groundwater protection program (GWPP). A table in the same section lists eight monitored SSCs, a description, and the current wells that monitor the listed SSCs. Please confirm that SSC-7 (steam generator blow down) is not monitored directly by monitoring wells, but there are two surveillance monitoring sites (environmental sites #27 and #122) that monitor the SSC by proximity. Confirm that the results for environmental site 27 is a required sampling location, and the results are reported in the AREOR. Site 122 is included in the supplemental monitoring program with those results voluntarily reported in the AREOR.

19) RCI GW-7

Please confirm the following statements in relation to groundwater monitoring at the site:

- a) The GWPP includes quarterly monitoring for tritium and gamma isotopes.
- b) Reporting levels provided in Offsite Dose Calculation Manual (ODCM) table 1.4-2 are used as notification criteria for environmental samples.
- c) Analysis for hard to detect radionuclides was not required programmatically since gamma and tritium activity was not detected above lower limits of detections and the maximum contaminant level (20,000 pCi/L), respectively, for the years 2022 and 2023.

20) RCI GW-11

Please confirm that there have been no releases of non-radioactive materials since November 2023 that have affected onsite groundwater quality.

21) RCI HCR-1

As discussed during the environmental audit Historic and Cultural Resources breakout session and in response to information need HCR-1, please confirm the following:

- a) The Catawba Reservation and Catawba Off-Reservation Trust Land are located approximately 48-miles north-northeast (when measured from a center point from the reactor building) from VCSNS.
- b) Within the VCSNS 50-mile region, the Catawba Nation has tribal lands located east of the city of Rock Hill in York County.

22) RCI HCR-2

As discussed during the environmental audit Historic and Cultural Resources breakout session and in response to information need HCR-2, please confirm the following:

- a) The start of VCSNS construction was March 21, 1972.
- b) The plant was mechanically complete in 1979.
- c) Unit 1 reached 50 percent power on December 12, 1982.
- d) Unit 1 reached 100 percent power on June 10, 1983.
- e) Unit 1 was fully operation and on-line on January 1, 1984.

23) RCI HCR-7

As discussed during the environmental audit Historic and Cultural Resources breakout session and in response to information need HCR-7, please confirm the following: A separate Phase 2A literature review document was not created and the literature review and archaeological sensitivity assessment referenced in Section E3.8.1 consisted of reviewing the South Carolina State Historic Preservation files on archaeological sites, the National Register of Historic Places, and United States Geological Survey records to develop the information presented in the ER.

24) RCI HCR-8

As discussed during the environmental audit Historic and Cultural Resources breakout session and in response to information need HCR-8, please confirm the following:

- a) There are no ground disturbing activities planned along the 115-kilovolt (kV) transmission line, including the 600-foot underground segment, during the SLR period.
- b) Beyond line clearing and herbicide management, no maintenance activities are planned on the 115-kV transmission line.

25) RCI HH-1

As discussed during the Human Health breakout session of the May 2024 environmental virtual audit, please confirm the following: A search of public data concerning waterborne diseases in South Carolina was conducted and did not yield any new results from what was presented in the ER in Section E3.10.1 for waterborne diseases in the vicinity of the plant. In addition, please confirm that no new data was available from the Centers for Disease Control and Prevention National Outbreak Reporting System and that plant records did not produce any instances of notification from local, state, or federal agencies relating to waterborne diseases.

26) RCI HH-2

As discussed during the Human Health breakout session of the May 2024 environmental virtual audit, please confirm that there were no Occupational Safety and Health Administration recordable injuries for 2022 and 2023.

27) RCI HH-4/HH-5/HCR-8

Please confirm the following:

- 1) The transmission line clearance evaluation as discussed in the ER Section E3.10.2 and provided as requested for review during the Human Health breakout session during the May 2024 virtual audit applied the National Electrical Safety Code and all in-scope transmission lines were found to have adequate clearance.
- 2) In addition, the site boundary as shown in figure E2.2-1 shows the site boundary area as defined in the safety analysis and the Parr 115-kV transmission corridor that continues past this area is outside the site boundary of the plant site.
- 3) As further discussed in both the Historic and Cultural and Human Health breakout sessions, the discussion in E.2.2.5.4 should state that the Parr 115-kV transmission corridor access is controlled by Dominion Energy, so although it is outside the site boundary as shown in figure E2.2-1, it is not publicly accessible.
- 4) Section E2.2.5.2 should refer to Dominion Energy procedures, not VCSNS procedures for line clearing specifications and herbicide management on the transmission right of way as discussed during the human health breakout session.

28) RCI LV-1

Please confirm the following: The site of the canceled Units 2 and 3 project continues to be involved in an effort to sell components and materials until at least the end of 2025. After that, there are no plans for site restoration.

29) RCI LV-3

Please confirm the following: The projects identified in ER Section E4.1.4.4 will occur on land already cleared and developed for industrial use and will not require any new land clearance or disturbance.

30) RCI LV-5

Please confirm the following: The tallest onsite feature is a communications tower, approximately 330 ft tall. It uses Federal Aviation Administration required lighting of a single flashing beacon. It flashes white during the day and red at night.

31) RCI MET-1

As discussed during the environmental audit Meteorology breakout session and in response to information need MET-1, please confirm that Dominion Energy does not maintain precipitation data from the onsite meteorological tower and therefore precipitation data for 1992-2021 is not available.

32) RCI NOI-1

As discussed during the environmental audit Noise breakout session and in response to information need NOI-1, please confirm that the primary offsite noise source includes the VCSNS Security Rifle Range located on the south site of the former Units 2 and 3 construction site and is approximately 1.3 miles from the VCSNS site boundary.

33) RCI NOI-2

As discussed during the environmental audit Noise breakout session and in response to information need NOI-2, please confirm that there have been no noise studies conducted offsite in the vicinity of VCSNS.

34) RCI NOI-4

As discussed during the environmental audit Noise breakout session and in response to information need NOI-3, please confirm that Dominion Energy did not receive noise complaints with respect to operations of VCSNS in 2023.

35) RCI SOC-1

As discussed during the audit's Socioeconomics breakout session and in response to information need SOC-1, please confirm the following:

- a) The following tax revenue payments for 2022 and 2023 (U.S. Dollars):
 - 2022: total nuclear taxes: \$21,269,526; VCSNS property taxes: \$11,938,930.
 - 2023: total nuclear taxes: \$22,213,687; VCSNS property taxes: \$12,693,913.

- b) The state of South Carolina assesses property taxes on Dominion Energy on behalf of all the counties it serves. The state then provides the respective assessed values to each County. The county applies its levy (tax) rates, including the school district levy rate, to the assessed value to derive the property taxes due from Dominion Energy. Column 1 of VCSNS ER table E3.9-2 is the total property tax Dominion paid on behalf of the VCSNS nuclear facility for the stated year. Column 3 is the amount of the Column 1 property taxes that Fairfield County credited to VCSNS and allocates to its general fund which includes hospital, emergency and library funding. The remaining dollars are allocated by the county to the school district for Operations and Debt funding. All Column 1 taxes go to Fairfield County.

c) All property tax payments are paid to Fairfield County.

36) RCI SOC-2

Please confirm that Dominion Energy provided the following annual funding amounts to the South Carolina Emergency Management Division (SCEMD):

- 2018: \$327,286
- 2019: \$333,974
- 2020: \$333,562
- 2021: \$377,365
- 2023: \$453,668

In addition, please confirm that Dominion Energy has agreed to provide financial support for SCEMD's emergency management center expansion project with an annual payment of \$114,000 each year for three years, beginning in 2025.

37) RCI SW-1

During the audit, Dominion Energy and NRC staff discussed two specific events—a National Pollutant Discharge Elimination System (NPDES) permit violation in April 2022 and a permit exceedance in March 2022. Please confirm that the following statements are accurate:

- a) The Notice of Violation (NOV) AI-0005261 dated April 6, 2022, is associated with exceedances at Outfall 08A for daily maximum and monthly average Total Residual Chlorine (TRC) in January 2022. The measured TRC was 0.05 milligrams per liter (mg/L), which exceeded the permitted daily limit of 0.019 mg/L and the monthly average limit of 0.011 mg/L. The response provided by DESC to the SCDHEC dated April 20, 2022, summarized DESC's investigation into the cause of the TRC exceedances and corrective actions. No further correspondence between DESC and SCDHEC occurred regarding the TRC NOV.
- b) The sole document associated with the March total suspended solids (TSS) limit exceedance is Condition Report 1196336, which states that a TSS monthly exceedance occurred at Outfall 06B in March 2022. The reported TSS concentration of 32.6 mg/L was associated with a single grab sample collected on 3/7/2022. This sample did not exceed the permitted daily maximum TSS concentration of 98 mg/L, but resulted in an exceedance of the permitted monthly average limit of 30 mg/L because it was the only sample collected in March. There was no subsequent SCDHEC NOV letter associated with the March TSS exceedance and no other correspondence between DESC and SCDHEC occurred regarding investigation of or corrective actions in response to the March TSS exceedance.

38) RCI SW-2

During the audit, the Dominion Energy and NRC staff discussed NPDES permit violations and exceedances since March 2022. Please confirm that the following statements are accurate:

- a) A monthly sample at the Offsite Water Treatment Facility was not collected in February

2023, resulting in a violation of NPDES Permit No. SCG646072.

- b) The parameters not sampled included effluent total residual chlorine, temperature, pH, total suspended solids, total phosphorus, total iron, and total manganese.
- c) Following the discovery of the violation, grab samples were collected to verify that no abnormal indicators were present in the wastewater discharge.
- d) This violation was documented in VCSNS' corrective action program, but the violation was not reportable.

39) RCI SW-5

During the audit, the NRC staff reviewed the 2022 and 2023 surface water withdrawal data. Please confirm that the 2022 and 2023 monthly surface withdrawal volumes in table 1 and 2022 and 2023 annual surface water withdrawal volumes in table 2, shown below, are accurate.

Table 1:			Table 2:	
Year	Month	Monthly Intake Volume (MGM)	Year	Annual Intake Volume (MGY)
2022	January	19,495.76	2022	265,464.60
2022	February	19,830.47	2023	247,459.03
2022	March	22,915.27		
2022	April	22,175.83		
2022	May	22,916.28		
2022	June	22,146.10		
2022	July	22,917.01		
2022	August	22,911.27		
2022	September	22,171.62		
2022	October	22,909.12		
2022	November	22,168.66		
2022	December	22,907.21		
2023	January	22,907.64		
2023	February	20,691.79		
2023	March	22,908.15		
2023	April	5,381.87		
2023	May	17,428.83		
2023	June	22,169.30		
2023	July	22,908.69		
2023	August	22,909.75		
2023	September	22,169.05		
2023	October	22,907.79		
2023	November	22,169.38		
2023	December	22,906.80		
MGM = million gallons per month				
MGY = million gallons per year				

40) RCI SW-13

During the audit, the NRC staff reviewed the VCSNS Hazardous Waste Contingency (HWC) Plan. Please confirm that the following statements about the HWC Plan are accurate:

- a) Original date: August 2014, current revision date: February 2024, next review: December 2024.
- b) The HWC Plan is reviewed and updated annually.
- c) The HWC Plan is immediately implemented if a threat to human health or the environment is likely from an unplanned release of hazardous materials or hazardous waste.
- d) If hazardous materials or hazardous waste from a spill migrate to the stormwater drainage system, a downstream location is identified where the stormwater flow could be blocked using dams, absorbents, or other impermeable material.
- e) The SCDHEC Bureau of Land and Waste Management Emergency Response Section is notified of reportable quantity releases to air, land, or water.
- f) The NRC is notified if the spill threatens human health or the environment outside the plant or if the spill containing Comprehensive Environmental Response, Compensation, and Liability Act substances reaches navigable waters.
- g) After a release event, recovered waste is treated, stored, or disposed appropriately. The event is investigated to determine the cause, corrective actions are taken, and the HWC Plan is amended, if necessary.

41) RCI SW-17

During the audit, the NRC staff reviewed recent VCSNS Annual Reports related to NPDES Permit SCR005317. Please confirm that DESC conducts the following activities as part of its annual stormwater management evaluation:

- a) Inspects for potential pollutant sources.
- b) Identifies any sources of stormwater or non-stormwater discharges not previously identified in the SWPPP.
- c) Reviews of stormwater data to identify potential pollutant hot spots.
- d) Reviews SCDHEC's most recent list of Total Maximum Daily Loads and 303(d) Impaired Waters as it relates to water quality-based monitoring and potential correction actions.
- e) Certifies to the best of their knowledge that they are in compliance with their permit.

42) RCI TER-1

Section 2.2.4 of the ER states that VCSNS has one meteorological (MET) tower that is self-supporting and is 62 meters tall but did not mention the lighting regime. From information gathered during the environmental site audit, please confirm that the MET tower normally has a red blinking light but is currently unlit because of the active osprey nest. Please confirm that the above summary is correct.

43) RCI TER-3

From information gathered during the environmental site audit, please confirm the following:

- a) Approximately 10 percent of the in-scope transmission lines have avian safety features installed (i.e., cones on the poles, triangles on the arms that hold the static wires).
- b) No plastic coils are installed on in-scope transmission lines.
- c) No wildlife have been entangled on these avian protection devices.

44) RCI TER-4

From the information gathered during the environmental site audit, please confirm the following:

- a) Dominion Energy has applied for a Migratory Bird Special Purpose Utility Permit (SPUT) from U.S. Fish and Wildlife Service and is waiting on renewal.
- b) Dominion Energy is adhering to the previous permit conditions of the previous SPUT (Permit No. MB040209) while waiting for that renewal to be processed.
- c) Dominion Energy has a current Migratory Bird Permit from the South Carolina Department of Natural Resources (Permit No. MB-03-24).

45) RCI TER-5

From the site audit, the location of the active bald eagle nest was confirmed to be on the eastern edge of the VCSNS site boundary close to the Offsite Water Supply Facility, protected by a chain linked fence with signage. From the information gathered during the audit, the NRC staff understands that Dominion has both corporate and site-specific environmental policies and procedures relation to compliance with Bald and Golden Eagle Protection Act. These documents summarize the requirements, explain how these requirements apply to Dominion's sites and activities, and detail protocols and reporting procedures that Dominion personnel and contractors must follow regarding eagles and eagle nests on site. These documents include a corporate Avian Protection Plan and Migratory Bird and Eagle Protection document describing obligations for management of eagles including:

- Unless there is a site-specific determination that disturbance can be closer due to time of year, disturbances must not occur within 660 feet of an active bald eagle nest.
- Large nest protocol is followed with any nest equal to or greater than 2 feet in diameter where it is assumed a bald eagle nest until a biologist confirms otherwise.

- VCSNS staff and contractors follow the above procedures to protect this active nest.

Please confirm that the above summary is correct.

46) RCI TER-9

From information gathered during the environmental site audit, please confirm the following:

- a) The forest within the site boundaries is no longer being actively managed.
- b) Dominion Energy has no plans to undertake tree removal in the forested area within the site boundary. This forested area is not actively managed due to the location and challenges with harvesting and is not expected to be impacted during SLR.

47) RCI WM-1

As discussed during the audit:

- a) Please confirm that once acceptable release concentrations for liquid effluents are achieved, the liquid effluent is pumped to the Fairfield Pumped Storage Facility where it is diluted in the discharge stream of water used for the hydroelectric power generation.
- b) Please confirm that although mechanisms exist for discharging liquid waste from a waste monitor tank via the Industrial Sanitary System through a radiation monitor (RM-L5) to the circulating water discharge canal, this pathway is not used for the processed liquid waste from the primary side.
- c) Please confirm that the secondary side wastewater such as steam generator blowdown and Turbine building sump were normally discharged through circulating water discharge canal and if necessary, these can be rerouted to other tanks that would then be discharged to the Fairfield Pump Storage.
- d) Please confirm that during the SLR term, a replacement for the existing liquid waste demineralizer system is being planned.

48) RCI WM-2

Please confirm that mixed waste is stored in a designated area where no other waste is stored.

49) RCI WM-3

As discussed during the audit:

- a) Please confirm that there are no proposed changes or upgrades being considered for VCSNS's radwaste management system for the SLR term.
- b) Please confirm that Class B/C waste is shipped to the low-level waste facility in Barnwell, SC and that Class A waste is typically sent to a processing facility and then transported to available disposal sites in Tennessee, Utah, Barnwell, SC, or Texas.
- c) Please confirm that VCSNS is currently storing two High Integrity Containers (HICs)

containing filters that are currently considered greater-than-Class C (GTCC) and are under evaluation to validate the GTCC conclusion and determine disposal options. There are no plans to move the HICs from their current location to the independent spent fuel storage installation (ISFSI) which is designated for spent fuel storage.

50) RCI WM-4

As discussed during the audit:

- a) Please confirm that the relatively large amount of hazardous waste generated in 2018 resulted from the clean-up from when a large sulfuric acid tank leaked into containment generating roughly 755,000 pounds of waste from the sulfuric acid.
- b) Please confirm there are no proposed changes or upgrades to the non-radioactive waste management program being considered for the subsequent license term.

51) RCI WM-5

Please confirm that there have been no reportable releases that would trigger a notification requirement during the specified timeframe (January 2022 – April 2024).

52) RCI WM-6

Please confirm that there have been no reportable inadvertent releases or spills of nonradioactive contaminants that would trigger a notification requirement during the specified timeframe (January 2022 – April 2024).

53) RCI SNF-1

Please confirm that the VCSNS ISFSI has the capacity to hold 80 years of spent fuel (with no fuel remaining in the spent fuel pool) given the current protocol for the number of new fuel assemblies loaded each cycle.

**VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1
SUBSEQUENT LICENSE RENEWAL APPLICATION ENVIRONMENTAL REVIEW
REQUESTS FOR ADDITIONAL INFORMATION**

1) RAI GEN-1

REQUIREMENT: Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51.53(c)(iv) requires that environmental reports contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware.

ISSUE: The U.S. Nuclear Regulatory Commission (NRC) staff is preparing an environmental impact statement (EIS) that considers the environmental impacts of subsequent license renewal (SLR) for Virgil C. Summer Nuclear Station, Unit 1 (VCSNS). Table B-2 of the draft EIS, "Operating Permits and Other Requirements," will list the permits and licenses issued by Federal, State, and local authorities for activities at VCSNS, as identified in table E9.1-1 in appendix E of the VCSNS Environmental Report (ER), dated August 17, 2023 (Agencywide Documents Access and Management System ML23233A174). As part of preparing the site-specific EIS, the staff must consider whether there have been any changes to operating permits or other requirements.

REQUEST: Please provide any relevant updates to table E9.1-1 that have transpired since the ER dated August 17, 2023, was submitted. If any permits have expired since submitting the SLR application to the NRC, please provide the status of those permits and/or renewals.

2) RAI AQU-3/AQU-4

REQUIREMENT: 10 CFR 51.53(c)(3)(ii)(B) requires that if plant uses a once-through cooling or cooling pond heat dissipation system, the license renewal applicant submit a copy of current Clean Water Act 316(b) determinations and, if necessary, a 316(a) variance in accordance with 40 CFR Part 125, or equivalent State permits and supporting documentation.

ISSUE: The NRC staff requires copies of supporting documentation related to Clean Water Act 316(a) concerning thermal effluents and Clean Water Act 316(b) concerning impingement and entrainment to independently review these issues and assess impacts on aquatic resources during the proposed license renewal term.

REQUEST: Please provide the following documents:

- a) Dames and Moore. 1985. 316(b) Demonstration for the Virgil C. Summer Nuclear Station for the South Carolina Department of Health and Environmental Control and the Nuclear Regulatory Commission. March 1985. Job No. 5182-108-09. 85 p.
- b) Normandeau Associations, Inc. 2009. Monticello Reservoir Ichthyoplankton Studies, September 2008 through August 2009. Prepared for Tetra Tech NUS. R-21448.001. September 2009. 49 p.
- c) Normandeau Associations, Inc. 2017. V.C. Summer Nuclear Station Entrainment Study – 2016 and revised 2017. Prepared for SCANA RFP WK9622-(2015). February 2017. 187 p.
- d) Geosyntec Consultants. 2007. Preliminary Report of Fish Impingement Mortality at the

Virgil C. Summer Nuclear Station, South Carolina Electric and Gas Company, Jenkinsville, South Carolina. Prepared for SCE&G, a SCANA Company. Project Number GK3601. May 2007. 89 p.

3) RAI FPE-1

REQUIREMENT: Licensees are required by 10 CFR 51.53(c)(3)(ii)(E) to assess the impact of refurbishment, continued operations, and other license renewal-related construction activities on important plant and animal habitats. Additionally, the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with Federal laws protecting wildlife, including but not limited to, the Endangered Species Act (ESA). Additionally, the ESA regulations at 10 CFR 402.10 require Federal agencies to confer with the U.S. Fish and Wildlife Service (FWS) concerning species proposed for Federal listing under ESA Section 7.

ISSUE: The FWS published a proposed rule to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA on September 14, 2022 (87 FR 56381). This species range includes Fairfield County, site of VCSNS plant.

REQUEST: Please provide an analysis of the potential impacts of the proposed VCSNS subsequent license renewal on the tricolored bat.

4) RAI GHG-4

REQUIREMENT: 10 CFR 51.53(c)(2) requires, in part, that applicants describe in detail in their environmental report the affected environment around the plant.

ISSUE: During the environmental audit's Greenhouse Gas Emissions and Climate Change breakout session and in response to information need GHG-4, Dominion Energy stated that 18 years of intake water temperature data are available. Additionally, Dominion stated that various site-specific factors, including operation of the Fairfield Pumped Storage Facility, can affect Monticello Reservoir water temperatures.

REQUEST:

- a) Provide the following two graphs for the available period of record (18 years):
 - 1) a plot of average monthly intake water temperatures (in a format similar to that presented in figure 3.6-5 of the ER)
 - 2) an 18-year time series plot of average monthly intake water temperatures
- b) Discuss the site-specific factors that can affect the identification of any trends in Monticello Reservoir water temperatures for the available period of record.

5) RAI GW-4

REQUIREMENT: 10 CFR 51.53(c)(3)(ii)(P). An applicant shall assess the impact of any documented inadvertent releases of radionuclides into groundwater. The applicant shall include in its assessment a description of any groundwater protection program used for the surveillance of piping and components containing radioactive liquids for which a pathway to groundwater may exist. The assessment must also include a description of any past inadvertent releases and the projected impact to the environment (e.g., aquifers, rivers, lakes, ponds, the ocean) during

the license renewal term.

ISSUE: During the virtual audit, it was stated there may be perched groundwater on site depending on local conditions. Historical groundwater elevation and contour maps were provided to the NRC staff for review during the audit to provide additional context to the hydraulic setting of the site. This context enables an assessment of the impact of potential radionuclides released to groundwater.

REQUEST: Please provide the following figures from the Groundwater Protection Initiative Report for V.C. Summer Nuclear Station, Revision 3, for staff to reference during its assessment:

- a) Figure 5: Geologic Cross Section Transects
- b) Figure 6: Geologic Cross Section A-A'
- c) Figure 7: Geologic Cross Section B-B'
- d) Figure 8: Bedrock Surface Contour Map
- e) Figure 9: Water Table Surface Map - October 21, 2003
- f) Figure 10: Water Table Surface Map - July 31, 2008
- g) Figure 11: Water Table Surface Map - Protected Area - August 13, 2009
- h) Figure 12: Water Table Surface Map - Site Area - August 13, 2009

6) HCR-4

REQUIREMENT: The NRC staff is preparing a site-specific EIS consistent with the NRC's regulations and in accordance with CLI-22-02 and CLI-22-03, both dated February 24, 2022, that considers the site-specific environmental impacts of SLR of VCSNS.

ISSUE: During the May 2024 environmental audit Historic and Cultural Resources breakout session, and in response to information need HCR-4, Dominion Energy provided copies of cultural resource surveys referenced in table E3.8-1 of the ER. Some of the surveys are not available in South Carolina's State Historic Preservation Office ARCHSITE(GIS).

REQUEST: Please provide a copy of the following two surveys:

- a) AF Consultants L.M. Drucker. 2012. Intensive (Phase 1) Archaeological Survey of V.C. Summer-Winnsboro 230-kV Utility Corridor.
- b) S&ME. 2014. Cultural Resources Investigation for the Parr Hydroelectric Project.

7) HCR-9

REQUIREMENT: Section 106 of the National Historic Preservation Act directs Federal Agencies to take into account the effects of their undertakings on historic properties. In accordance with 36 CFR 800.8(c)(1)(iv), the Federal agency, in consultation with consulting parties, shall propose measures that might avoid, minimize, or mitigate any adverse effects of the undertaking on historic properties and describe them in the EIS.

ISSUE: Section E3.8.6 of the ER states that Dominion Energy has cultural resources management policies and procedures that address the protection and/or evaluation of known or inadvertent discovery of potential resources at the VCSNS property. During the environmental audit's Historic and Cultural Resources breakout session and in response to information need

HCR-9, Dominion Energy discussed detailed steps and procedures that prescribe measures to protect historic and archaeological resources not identified in the ER.

REQUEST:

- a) Discuss the steps taken by personnel to protect unknown onsite historic and archaeological resources prior to excavation or ground disturbing activities in undisturbed areas. As part of the response, identify if and when archaeological surveys are conducted and the procedure (e.g., site procedure, corporate procedure, administrative procedure) that stipulates if a survey is conducted.
- b) Discuss the steps taken by personnel to protect known onsite historic and archaeological resources prior to excavation or ground disturbing activities (e.g., avoiding sites). As part of the response, identify how personnel would know how to determine if there are known onsite historic and archaeological resources in a specific area and how pre-job checklists or Drilling, Digging, and Cutting permits are used in the protection of historic and archaeological resources
- c) Discuss and identify the steps taken by personnel if evidence of historic and archaeological resources, including human remains, is discovered during excavation or ground disturbing activities. As part of the response identify the procedure (e.g., site procedure, corporate procedure, administrative procedure) that prescribe these steps.

8) RAI SW-6

REQUIREMENT: 10 CFR 51.45(b) and 51.53(c)(2) require that the ER include a description of the affected environment.

ISSUE: The NRC staff is preparing a site-specific EIS that considers the site-specific environmental impacts of subsequent license renewal for VCSNS. As part of the preparing the site-specific EIS, the staff must be able to review the recent intake and discharge water temperature data as it is relevant to assessing surface water impacts.

REQUEST: Provide plots of monthly intake and discharge temperatures over the 2017-2023 period. Also, please clarify whether "average" temperatures in the figure E3.6-4 and E3.6-5 titles refers to monthly average temperatures.

9) RAI TER-2a

REQUIREMENT: 10 CFR 51.45(b) and 51.53(c)(2) require that the ER include a description of the affected environment.

ISSUE: The NRC staff is preparing an EIS that considers the environmental impacts of subsequent license renewal for VCSNS. As part of the preparing the EIS, the staff must consider whether there has been any new information related to terrestrial resources. During the May 2024 environmental audit, Terrestrial Resources breakout session, and in response to information need TER-2, Dominion provided a bird deaths and injury report.

REQUEST: Please provide reports of bird deaths or injuries from 2013-2023 at VCSNS, and include all of the following information: species, count, conditions, incident date, and cause in a table for the time period 2013-2023 for avian incidents on site in a condensed table.

10) RAI TER-2b

REQUIREMENT: 10 CFR 51.45(b) and 51.53(c)(2) require that the ER include a description of the affected environment.

ISSUE: The NRC staff is preparing a site-specific EIS that considers the site-specific environmental impacts of subsequent license renewal for VCSNS. As part of the preparing the site-specific EIS, the staff must consider whether there has been any new information related to terrestrial resources. During the May 2024 environmental audit, Terrestrial Resources breakout session, and in response to information need TER-2, Dominion provided a bird deaths and injury report.

REQUEST: Please provide more detail for the bald eagle incident that occurred on June 11, 2015, regarding what happened to the eagle.