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SCE&G®
A SCANA COMPANY

December 2, 2009
NND-09-0329

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

ATTN: Document Control Desk

Subject: Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 Combined License Application (COLA) - Docket Numbers 52-027 and 52-028
Response to NRC Request for Additional Information (RAI) Letter No.071 Related to Probabilistic Risk Assessment and Severe Accident Evaluation

Reference:
1. Letter from Manny Comar (NRC) to Alfred M. Paglia (SCE&G), Request for Additional Information Letter No. 071 Related to SRP Section 19.0 for the Virgil C. Summer Nuclear Station Units 2 and 3 Combined License Application, dated November 3, 2009.

2. Letter from Ronald B. Clary (SCE&G) to Document Control Desk (NRC), Response to NRC Request for Additional Information (RAI) Letter No. 019, dated July 14, 2009.

The enclosure to this letter provides the South Carolina Electric & Gas Company (SCE&G) response to RAI items 19-77 through 19-80 included in the above referenced letter. The response to RAI 19-81 is still under development and will be provided by December 18, 2009. The enclosure also identifies any associated changes that will be incorporated in a future revision of the VCSNS Units 2 and 3 COLA.

Should you have any questions, please contact Mr. Al Paglia by telephone at (803) 345-4191, or by email at apaglia@scana.com.

D083
NRO

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 2nd day of December, 2009.

Sincerely,

Ronald B. Clary
Vice President
New Nuclear Deployment

AMM/RBC/jg

Enclosure

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NRC RAI Letter No. 071 Dated November 3, 2009

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

QUESTIONS from PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

NRC RAI Number: 19-77

Follow-up to NRC RAI No. 19-1

In your RAI response dated 7/14/2009, there is a table of external events. One column of this table is labeled "Applicable to Site? (Y/N)." The staff considers all events that are physically possible to be "applicable" and expects that they will be discussed. For example, if there is no dam at a higher elevation in the same watershed as the site, flooding due to dam failure would not apply. If such a dam exists, the staff would consider the event to be "applicable" even if the applicant can demonstrate that the frequency with which its failure could challenge the plant flooding design is negligible and no further analysis is required. Some of the assessments documented in the response are not consistent with this understanding. Please clarify what is meant by "applicable" in your response and ensure that the response is consistent with this meaning.

VCSNS RESPONSE:

An event was considered applicable to the site if the initiating event frequency is greater than 1E-07 or if a quantitative consequence evaluation demonstrated that there are site specific parameters that exceed the parameters used in APP-GW-GLR-101, "AP1000 Probabilistic Risk Assessment Site-Specific Considerations" (AP1000 DCD Reference 19.59-4). Therefore, an event was considered to be "not applicable" to the site if the initiating event frequency is less than 1E-07 or if the quantitative consequence evaluation demonstrated that the event would not adversely impact the safe operation of VCSNS Units 2 and 3. The External Event Frequencies for VCSNS Units 2 and 3 Table provided with SCE&G response to NRC RAI 19-1 (Reference 2) will be revised to reflect the above description of applicable and will be included in a future update as Table 19.58-201.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

See response to RAI 19-78.

ASSOCIATED ATTACHMENTS:

See response to RAI 19-78.

NRC RAI Letter No. 071 Dated November 3, 2009

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

QUESTIONS from PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

NRC RAI Number: 19-78

Follow-up to NRC RAI No. 19-1

The staff agrees that the events applicable to a site may be screened from further evaluation because they are bounded by the generic analysis documented in the referenced design certification. The remaining events applicable to a site may be screened from further evaluation because they are so infrequent that their contribution to risk is too small to affect the plant CDF or LRF, even if core damage is assumed to result. Other events that are considered to be less frequent than 1E-06 per year may also be screened if the conditional core damage probability is so low that the risk from all such sequences taken together is too small to affect CDF or LRF. Both the basis for screening events (data and logic used to screen the event) and an assessment of risk from events that cannot be screened (including appropriate references for numerical values) must be reported in the VCSNS Final Safety Analysis Report (FSAR) along with other PRA results and assumptions. Please document these PRA results in the FSAR per 10 CFR 52.79(c)(1). (Format and content expectations are documented in Appendix A to Section C.I.19 of RG 1.206, "Combined License Applications for Nuclear Power Plants.")

VCSNS RESPONSE:

The requested information will be added to the FSAR as shown below.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

1. COLA Part 2, FSAR Chapter 19, Section 19.58 will be revised as follows:

   This section of the referenced DCD is incorporated by reference with ~~no~~the following departures and/or supplements.

2. COLA Part 2, FSAR Chapter 19, Section 19.58 will be revised to add new Subsection 19.58.3 that reads:

VCS SUP 19.58-1 Table 19.58-201 documents the site specific external events evaluation that has been performed to VCSNS Units 2 and

3. This table provides a general explanation of the evaluation and resultant conclusions and provides a reference to applicable sections of the FSAR where more supporting information (including data used, methods and key assumptions) regarding the specific event is located. Based upon this evaluation, it is concluded that the VCSNS Units 2 and 3 site is bounded by the High Winds, Floods and Other External Events analysis documented in DCD Section 19.58 and APP-GW-GLR-101 (Reference 201) and no further evaluations are required at the COL application stage.

3. COLA Part 2, FSAR Chapter 19, Section 19.58 will be revised to add new Subsection 19.58.4 that reads:

   19.58.4 References

   201. Westinghouse Electric Company LLC, "AP1000 Probabilistic Risk Assessment Site-Specific Considerations," Document Number APP-GW-GLR-101, Revision 1, October 2007.

4. COLA Part 2, FSAR Chapter 19, Section 19.58, add new Table 19.58-201 as shown in Attachment 1 to this RAI response.

5. COLA Part 2, FSAR Chapter 19, Subsection 19.59.10.5, revise fourth paragraph as follows:

   As discussed in Section 19.58.3, ~~I~~it has been confirmed that the Winds, Floods, and Other External Events analysis documented in DCD Section 19.58 is applicable to the site. The site-specific design has been evaluated and is consistent with the AP1000 PRA assumptions. Therefore, ~~Chapter~~Section 19.58 of the AP1000 DCD is applicable to this design.

ASSOCIATED ATTACHMENTS:

Attachment 1 – New FSAR Table 19.58-201, External Event Frequencies for VCSNS Units 2 and 3, 7 total pages.

NRC RAI Letter No. 071 Dated November 3, 2009

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

QUESTIONS from PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

NRC RAI Number: 19-79

Follow-up to NRC RAI No. 19-1

Section 19.58 of the AP1000 Design Control Document (DCD) classifies tornadoes according to the enhanced Fujita scale. To allow direct comparison between the FSAR and the referenced DCD, please re-classify tornadoes reported in the FSAR using the enhanced Fujita scale.

VCSNS RESPONSE:

The Texas Tech University (TTU) research publication "A Recommendation for an Enhanced Fujita Scale (EF-Scale)" correlates the Fujita-Scale wind speeds with the EF-Scale wind speeds and states that a tornado rated according to the Fujita Scale will have the same "F-Number" in the EF Scale, e.g., F3 translates into EF3, although the wind ranges are different. TTU developed the linear regression function demonstrating the correlation between the two scales and the resulting table:

$$Y = 0.6246X + 36.393$$

Fujita Scale		EF Scale	
Fujita Scale	**3-Second Wind Gust Speed, mph**	**EF Scale**	**3-Second Wind Gust Speed, mph**
F0	45 - 78	EF0	65 - 85
F1	79 - 117	EF1	86 - 109
F2	118 - 161	EF2	110 - 137
F3	162 - 209	EF3	138 - 167
F4	210 - 261	EF4	168 - 199
F5	262 - 317	EF5	200 - 234

where Y is the EF-Scale wind speed and X is the Fujita-Scale wind speed.

FSAR Table 2.3-227 (presented in SCE&G Letter NND-09-0170, Response to RAI 02.03.01-1) will be revised to include the Enhanced Fujita Scale values. Also FSAR Table 19.58-201 (included as Attachment 1 to this response) will be revised to present

the events using the Enhanced Fujita Scale, refer to RAI 19-78 response for associated COLA markup.

References for Response

1. Texas Tech University, Wind Science and Engineering Center, "A Recommendation for an Enhanced Fujita Scale (EF-Scale)," June, 2004.

2. http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms, accessed November 24, 2009.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

1. COLA Part 2, FSAR Table 2.3-227 will be revised to include the Enhanced Fujita Scale as presented below:

Table 2.3-227
Tornadoes That Occurred In Counties Surrounding VCSNS (Saluda, Chester, Lancaster, Newberry, Lexington, Kershaw, Richland, Union and Fairfield) During the Period from January 1950 Through August 2003[a]

County	Location or County	Date	Time[b]	Magnitude	Magnitude (EF Scale)
Saluda	1 SALUDA	3/13/1955	2100	F2	EF2
Saluda	2 SALUDA	11/22/1992	1755	F3	EF3
Saluda	3 SALUDA	11/22/1992	1800	F2	EF2
Saluda	4 Ward	5/7/1998	7:12 PM	F1	EF1
Saluda	5 Saluda	6/2/1998	10:28 AM	F0	EF0
Saluda	6 Saluda	4/24/1999	3:39 PM	F0	EF0
Saluda	7 Ward	5/6/2003	12:45 AM	F0	EF0
Chester	1 CHESTER	4/6/1955	1230	F1	EF1
Chester	2 CHESTER	5/15/1975	1200	F1	EF1

County	Location or County	Date	Time[b]	Magnitude	Magnitude (EF Scale)
Chester	3 CHESTER	4/19/1981	1845	F1	EF1
Chester	4 Lowrys	4/16/1994	0111	F2	EF2
Chester	5 Chester	8/16/1994	1755	F1	EF1
Chester	6 Chester 9 Wnw	5/1/1995	2305	F0	EF0
Chester	7 Richburg	5/29/1996	5:00 PM	F1	EF1
Chester	8 Ft Lawn	7/24/1997	12:00 AM	F1	EF1
Chester	9 Chester	6/4/1998	5:30 PM	F0	EF0
Lancaster	1 LANCASTER	4/5/1957	1930	F1	EF1
Lancaster	2 LANCASTER	4/8/1957	1600	F4	EF4
Lancaster	3 LANCASTER	10/1/1969	2245	F0[c]	EF0[c]
Lancaster	4 LANCASTER	3/4/1977	1120	F1	EF1
Lancaster	5 LANCASTER	3/28/1984	1725	F4	EF4
Lancaster	6 LANCASTER	6/16/1989	1715	F1	EF1
Lancaster	7 LANCASTER	9/22/1989	0045	F1	EF1
Newberry	1 NEWBERRY	4/5/1957	0714	F1	EF1
Newberry	2 NEWBERRY	3/30/1960	1906	F2	EF2
Newberry	3 NEWBERRY	4/18/1969	1600	F1	EF1
Newberry	4 NEWBERRY	12/13/1973	1425	F3	EF3
Newberry	5 NEWBERRY	12/13/1973	1503	F3	EF3
Newberry	6 NEWBERRY	12/13/1973	1616	F2	EF2
Newberry	7 NEWBERRY	12/13/1973	1645	F2	EF2

County	Location or County	Date	Time[(b)]	Magnitude	Magnitude (EF Scale)
Newberry	8 NEWBERRY	5/15/1975	1350	F1	EF1
Newberry	9 NEWBERRY	3/28/1984	1620	F2	EF2
Newberry	10 NEWBERRY	3/28/1984	1645	F3	EF3
Newberry	11 NEWBERRY	5/23/1988	1540	F0	EF0
Newberry	12 NEWBERRY	11/22/1992	1830	F3	EF3
Newberry	13 NEWBERRY	11/22/1992	1913	F2	EF2
Newberry	14 NEWBERRY	8/16/1994	1332	F1	EF1
Newberry	15 Prosperity	1/14/1995	0814	F0	EF0
Newberry	16 Pomaria	1/14/1995	0829	F0	EF0
Newberry	17 ?	5/15/1995	1553	F0	EF0
Newberry	18 Chappells	4/24/1999	3:37 PM	F0	EF0
Newberry	19 Silverstreet	11/11/2002	6:42 AM	F1	EF1
Newberry	20 Pomaria	11/11/2002	7:35 AM	F1	EF1
Lexington	1 LEXINGTON	4/5/1957	0645	F2	EF2
Lexington	2 LEXINGTON	9/28/1963	1800	F1	EF1
Lexington	3 LEXINGTON	1/10/1972	1405	F1	EF1
Lexington	4 LEXINGTON	2/22/1974	0400	F1	EF1
Lexington	5 LEXINGTON	2/11/1981	0015	F1	EF1
Lexington	6 LEXINGTON	2/21/1989	0800	F1	EF1
Lexington	7 To 4 Ene	2/22/1993	0115	F1	EF1
Lexington	8 Gilbert	8/16/1994	1200	F2	EF2

County	Location or County	Date	Time[b]	Magnitude	Magnitude (EF Scale)
Lexington	9 LEXINGTON	8/16/1994	1216	F0	EF0
Lexington	10 Of Lexington	8/16/1994	1227	F2	EF2
Lexington	11 Lexington	8/16/1994	1235	F3	EF3
Lexington	12 Columbia	8/16/1994	1253	F0	EF0
Lexington	13 Lexington	8/16/1994	1335	F3	EF3
Lexington	14 Pelion	1/14/1995	1156	F1	EF1
Lexington	15 Gaston	11/2/1995	1545	F3[c]	EF3[c]
Lexington	16 Cayce	11/7/1995	1515	F0	EF0
Lexington	17 South Congaree	11/7/1995	1523	F0[c]	EF0[c]
Lexington	18 Lexington	11/7/1995	1530	F1	EF1
Lexington	19 Gaston	7/23/1997	10:53 PM	F2	EF2
Kershaw	1 KERSHAW	8/29/1964	1600	F1	EF1
Kershaw	2 KERSHAW	8/16/1965	1540	F0[c]	EF0[c]
Kershaw	3 KERSHAW	4/7/1967	1420	F1	EF1
Kershaw	4 KERSHAW	4/18/1969	1345	F1	EF1
Kershaw	5 KERSHAW	4/18/1969	1705	F2	EF2
Kershaw	6 KERSHAW	5/4/1978	1700	F1	EF1
Kershaw	7 KERSHAW	3/6/1983	1800	F1	EF1
Kershaw	8 KERSHAW	3/28/1984	1720	F4	EF4
Kershaw	9 KERSHAW	2/16/1990	1324	F0	EF0
Kershaw	10 KERSHAW	8/16/1994	1400	F0	EF0

County	Location or County	Date	Time[(b)]	Magnitude	Magnitude (EF Scale)
Kershaw	11 Camden	3/16/1996	10:38 PM	F0	EF0
Kershaw	12 Cassatt	5/29/1996	6:44 PM	F0	EF0
Kershaw	13 Camden	7/23/1997	11:48 PM	F2	EF2
Kershaw	14 Bethune	7/24/1997	12:20 AM	F1	EF1
Richland	1 RICHLAND	6/11/1955	1030	F0	EF0
Richland	2 RICHLAND	7/3/1964	0125	F2	EF2
Richland	3 RICHLAND	8/29/1964	1515	F2	EF2
Richland	4 RICHLAND	3/26/1965	915	F0	EF0
Richland	5 RICHLAND	5/29/1967	1800	F2	EF2
Richland	6 RICHLAND	11/24/1967	1810	F1	EF1
Richland	7 RICHLAND	5/12/1971	1530	F1	EF1
Richland	8 RICHLAND	1/10/1972	1405	F1	EF1
Richland	9 RICHLAND	11/12/1975	1915	F2	EF2
Richland	10 RICHLAND	5/15/1976	130	F2	EF2
Richland	11 RICHLAND	6/19/1977	2000	F1	EF1
Richland	12 RICHLAND	5/20/1980	1010	F1	EF1
Richland	13 RICHLAND	2/11/1981	0000	F1	EF1
Richland	14 RICHLAND	4/20/1981	1505	F1	EF1
Richland	15 RICHLAND	8/31/1987	1515	F2	EF2
Richland	16 RICHLAND	6/16/1989	1500	F0	EF0
Richland	17 McEntire	8/16/1994	1230	F0	EF0

County	Location or County	Date	Time[b]	Magnitude	Magnitude (EF Scale)
Richland	18 Ballentine	8/16/1994	1318	F1	EF1
Richland	19 Near Ballentine	1/6/1995	2210	F1	EF1
Richland	20 Columbia	10/27/1995	1745	F0[c]	EF0[c]
Richland	21 Columbia	11/7/1995	1521	F0[c]	EF0[c]
Richland	22 Columbia	7/23/1997	11:14 PM	F1	EF1
Richland	23 Columbia	7/23/1997	11:32 PM	F0	EF0
Richland	24 Ft Jackson	3/16/2000	3:30 PM	F0	EF0
Richland	25 Mc Entire	3/16/2000	5:52 PM	F0	EF0
Richland	26 Eastover	3/29/2001	4:12 PM	F0	EF0
Richland	27 Ft Jackson	6/13/2001	1:22 PM	F0	EF0
Union	1 UNION	4/8/1957	1500	F2	EF2
Union	2 UNION	8/17/1985	1315	F0	EF0
Union	3 UNION	6/4/1992	1050	F0	EF0
Union	4 UNION	6/4/1992	1115	F0	EF0
Union	5 Southside To	4/15/1993	1626	F2	EF2
Union	6 Union	7/26/1996	4:25 PM	F0	EF0
Union	7 Carlisle	6/6/1998	4:10 PM	F1	EF1
Union	8 Adamsburg	5/25/2000	7:00 PM	F1	EF1
Union	9 Carlisle	6/9/2001	2:15 PM	F0	EF0
Fairfield	1 FAIRFIELD	3/6/1983	1730	F1	EF1
Fairfield	2 FAIRFIELD	3/28/1984	1653	F3	EF3

County	Location or County	Date	Time[(b)]	Magnitude	Magnitude (EF Scale)
Fairfield	3 FAIRFIELD	3/28/1984	1700	F4	EF4
Fairfield	4 FAIRFIELD	11/22/1992	1945	F0	EF0
Fairfield	5 FAIRFIELD	11/22/1992	2012	F0	EF0
Fairfield	6 FAIRFIELD	5/4/1993	1745	F0	EF0
Fairfield	7 Strother To	8/16/1994	1343	F0	EF0
Fairfield	8 Ridgeway	8/16/1994	1530	F2	EF2
Fairfield	9 Winnsboro	8/16/1994	1644	F0	EF0
Fairfield	10 Centerfield	1/6/1995	2214	F1	EF1
Fairfield	11 Ridgeway	3/16/1996	10:17 PM	F0	EF0
Fairfield	12 Jenkinsville	7/22/2000	1:15 PM	F0	EF0

ASSOCIATED ATTACHMENTS:

See response to RAI 19-78.

NRC RAI Letter No. 071 Dated November 3, 2009

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

QUESTIONS from PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

NRC RAI Number: 19-80

Follow-up to NRC RAI No. 19-1

In Table 1 of the 7/14/2009 letter, FSAR Table 2.3-227 is cited, but the last table in FSAR Section 2.3 is numbered Table 2.3-226. Please revise the FSAR to include data on tornado activity near the VCSNS site. Provide the basis for concluding that a sufficient number of events have been observed over a large enough area to provide a representative sample.

VCSNS RESPONSE:

FSAR Table 2.3-227 was added in response to RAI 02.03.01-1, dated June 24, 2009 per SCE&G Letter NND-09-0170. This letter did not meet the cutoff date for Revision 1 of the VCSNS COLA, and therefore was intended to be included in Revision 2 of the application. This table is revised in response to RAI 19-79 in this letter to include the Enhanced Fujita scale and will be included in a future revision of the application.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

See response to RAI 19-79.

ASSOCIATED ATTACHMENTS:

None

NRC RAI Letter No. 071 Dated November 3, 2009

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

QUESTIONS from PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

NRC RAI Number: 19-81

Follow-up to NRC RAI No. 19-1

Table 1 of the 7/14/2009 letter states that extratropical storms observed within a 25-mile radius of the proposed site were evaluated. Since many of these storms affect a very large area and storm tracks are difficult to predict, the basis for this choice is unclear. The data within this limited area are very sparse, making the uncertainty associated with the reported value relatively large. For these reasons, the staff does not consider that this class of event has been shown to be bounded by the generic assessment.

Provide the basis for concluding that a sufficient number of events have been observed over a large enough area to provide a representative sample and confirm that the generic assessment is representative. Alternatively, provide the basis for screening this event from further analysis. Otherwise, extratropical storms cannot be screened from further analysis and a more detailed discussion of the risk associated with extratropical storms must be provided in Section 19.58 of the FSAR.

VCSNS RESPONSE:

This response will be provided at a future date.

This response is PLANT SPECIFIC.

ASSOCIATED VCSNS COLA REVISIONS:

No COLA Revisions have been identified as a result of this response.

ASSOCIATED ATTACHMENTS:

None

Table 19.58-201
External Event Frequencies for VCSNS Units 2 and 3

Category	Event	Applicable to site? (Y/N)[1]	Explanation of Applicability Evaluation	Event Frequency
High Winds	EF0 Tornado	Y	Tornado activity in the surrounding counties of the VCSNS Units 2 and 3 site is provided in FSAR Table 2.3-227 from 1950 through August 2003. Due to the relative proximity of Laurens County to the other surrounding counties, activity in this area was also included within the evaluation. The event frequency was determined for each tornado category using a point probability method **[PS=n(a/A)]**. First, the average impacted area (**a**) was calculated by averaging the area of each category of tornado activity (events with an area of zero value were conservatively disregarded in determining the average area). Second, the tornado frequency (**n**) was calculated by dividing the total count of tornado events in each category including those with zero area by the measured duration (54 years). Third, the point probability of a tornado impacting a square mile (site area estimated as 1 mi^2.) is calculated by taking the product of the average impacted area and the average tornado frequency and dividing by the total area of the surrounding counties (**A**). This computation assumes that tornadoes with a zero path length have an area equal to the average area of the category.	1.17E-05
	EF1 Tornado	Y		1.26E-05
	EF2 Tornado	Y		8.38E-05
	EF3 Tornado	Y		7.34E-05
	EF4 Tornado	Y		3.91E-05
	EF5 Tornado	Y		No Recorded Events
	Cat. 1 Hurricane	Y	Historical data for tropical weather is archived by the National Coastal Services Center and covers from 1851 to 2006. FSAR Subsection 2.3.1.3.3 summarizes the frequencies of occurrence of the various	4.52E-02
	Cat. 2 Hurricane	Y		1.94E-02
	Cat. 3 Hurricane	Y		6.45E-03
	Cat. 4 Hurricane	Y		6.45E-03

Category	Event	Applicable to site? (Y/N)[1]	Explanation of Applicability Evaluation	Event Frequency
	Cat. 5 Hurricane	Y	categories of hurricanes that have tracked within approximately 100 nautical miles of the VCSNS site This data was used to analyze the event frequency of hurricane activity (in an extremely conservative manner since the site is located greater than 100 miles inland from the coast) traveling in the vicinity of the VCSNS site. The storms were sorted to remove duplicate values. The event frequency is determined by dividing the number of occurrences of tropical weather by the measured duration (155 years).	No Recorded Events
	Extratropical Cyclones	Y	The 100 nautical mile area was considered to be excessively conservative for the evaluation of extratropical storms (which by nature of the event are storms expected to occur more inland than hurricanes) and therefore a 25 mile radius around the site was evaluated for these events. The event frequency is determined by dividing the number of occurrences of tropical weather by the measured duration (155 years), and while the event frequency slightly exceeded that given in Table 3.0-1 of APP-GW-GLR-101, this has been attributed to rounding, by Westinghouse, of the information that was provided by the NuStart member utilities. As documented in COLA FSAR Table 2.0-201, the VCSNS site characteristic tornado wind loadings are equal to the AP1000 DCD site characteristic tornado wind loadings. The VCSNS site characteristic operating basis wind speed (102 mph) is below the DCD site characteristic operating basis wind speed of 145 mph. Therefore, it is concluded that the safety features of the AP1000 are unaffected and the resultant CDFs given in APP-GW-GLR-101 Table 3.0-1 for these events are applicable to VCSNS Units 2 and 3.	3.22E-02

Category	Event	Applicable to site? (Y/N)[1]	Explanation of Applicability Evaluation	Event Frequency
External Flood	External Flood	N	As discussed in COLA FSAR Subsections 2.4.1.1 and 2.4.10 the site grade of 400 ft NAVD88 (which corresponds to DCD grade elevation 100 ft.) is about 150 ft above the Broad River flood plain. Additionally, as discussed in COLA FSAR Subsections 2.4.2.2 and 2.4.2.3, the maximum water level in the power block area due to any local PMP flood event is below the entrance and openings to safety related structures. Therefore, no external flood protection measures are required for VCSNS Units 2 and 3. Subsections 2.4.3 and 2.4.4 also discuss other natural and man-made (dams) flooding scenarios which further reinforce the VCSNS site is not susceptible to any external floods which would adversely impact safe operation of VCSNS Units 2 and 3.	N/A
Transportation and Nearby Facility Accidents	Aviation (commercial/general/ military)	N	Subsections 2.2.2.7 and 2.2.2.7.6 provide the detailed evaluation that confirms the probability of an aviation accident is less than 10E-07 and therefore requires no further evaluation. Therefore, it is concluded that the PRA remains applicable.	N/A
	Marine (ship/barge)	N	As discussed in FSAR Subsection 2.2.2.4, since neither the Broad River, Parr Reservoir, nor the Monticello Reservoir is used as commercial transport waterways, the potential safety effect to the site is regarded as being insignificant. Thus, no further analysis is necessary	N/A
	Pipeline (gas/oil)	N	As stated in FSAR Subsection 2.2.2.3.1, the only pipeline in the general vicinity of the site is a 12 inch natural gas buried pipeline located greater than a mile from VCSNS Units 2 and 3. This pipeline is bounded by the evaluation performed in APP-QW-GLR-101, and therefore no further evaluation is necessary.	N/A

Category	Event	Applicable to site? (Y/N)[1]	Explanation of Applicability Evaluation	Event Frequency
	Railroad	N	Potential explosion and flammable vapor cloud hazards to VCSNS Units 2 and 3 resulting from railroad accidents are discussed in FSAR Subsection 2.2.3.1.1.3. The results of this evaluation concluded that no adverse impacts to VCSNS Units 2 and 3 are expected. Based upon the quantitative consequence evaluations performed, no risk-important events related to rail transportation have been identified for VCSNS Units 2 and 3. Therefore, the potential for hazards from these sources are minimal and will not adversely affect safe operation of VCSNS Units 2 and 3.	N/A
	Truck	N	Potential hazards resulting from trucks were discussed in FSAR 2.2.2.5. The evaluation that was performed to address the explosion of a tanker truck on site as it filled on-site storage tanks was considered bounding for any highway accident and therefore no additional evaluation was required. The evaluations to address these onsite truck hazards are described in FSAR Subsections 2.2.3.1.1.1 and 2.2.3.1.2.1, and the results of these evaluations concluded that the hazards do not result in any significant damage to the plant.	N/A

Notes:

1. An event is applicable (Y) to the VCSNS site if the initiating event frequency is greater than 1E-07, or if a quantitative consequence evaluation has demonstrated that there are site specific parameters that exceed the parameters used in APP-GW-GLR-101. An event is not applicable (N) to the VCSNS site if the initiating event frequency is less than 1E-07 or if the quantitative consequence evaluation has demonstrated that the event will not adversely impact the safe operation of VCSNS Units 2 and 3.