Chapter 3 Design of Structures, Components, Equipment, and Systems

3.5.1.6 Aircraft Hazards

Airports and airways in the VEGP site vicinity are discussed in Section 2.2.2.6. Aircraft hazards related to these airports and airways (shown in Figure 3.5-1) have been evaluated in accordance with Regulatory Standard 002, *Processing Applications for Early Site Permits*, May 2004 (RS-002), and NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*, Draft Revision 3, 1996 (NUREG-0800), Section 3.5.1.6.

3.5.1.6.1 Airports

RS-002 acceptance criteria provide a distance threshold for evaluating aircraft hazards due to nearby airports.

All airports in the VEGP site vicinity are greater than 10 mi from the site. The hazard probability for these airports is considered acceptable if the projected annual number of operations is less than 1,000 D^2, where D is the site-to-airport distance.

Bush Field is the closest (17 mi) and largest commercial airport in the VEGP site vicinity. The Federal Aviation Administration (FAA) **(APO 2006)** has projected the number of aircraft that will be in operation at Bush Field for every year up to 2025 for each of the following four types of aircraft: general aviation, air taxi and commuter, air carrier and commercial, and military. The projected flight data (which include landings and takeoffs) are provided in Table 3.5-1. As noted in the table, the total number of projected aircraft operations is substantially less than 1,000 D^2 (289,000).

The other airports in the vicinity are much smaller than Bush Field. Since they are all at least 10 mi from the VEGP site, their aircraft hazard threshold is greater than 100,000 operations, which significantly exceeds their annual traffic.

As discussed in Section 2.2.2.6.1, a small unimproved grass airstrip is located immediately north of the VEGP site (north of Hancock Landing Road and west of the Savannah River). This privately owned and operated airstrip has a 1,650-foot turf runway oriented 80° East – 260° West. The airstrip is for personal use and the associated traffic consists only of small single-engine aircraft. In addition, there is a small helicopter landing pad on the VEGP site. This facility exists for corporate use and for use in case of emergency. The traffic associated with either of these facilities may be characterized as sporadic. Due to the small amount and the nature of the traffic, these facilities do not present a safety hazard to the VEGP site.

3.5.1.6.2 Airway V185

The VEGP site is approximately 1.5 mi east of the centerline of Federal Airway V185, which runs between Augusta and Savannah. A more detailed review of aircraft hazards was performed because the VEGP site is within the 2 statute mile limit. This review is summarized below.

Airways are typically used by commercial flights and by general aviation for inclement weather and nighttime operations. In general, military aircraft do not use the federal airways. To be allowed to fly in a federal airway, an aircraft needs to have the proper communication equipment and the pilot needs to have specific qualifications. In addition, most general aviation flights do not use a federal airway in favorable weather conditions. When these factors are considered, along with the fact that there are no regularly scheduled direct commercial flights between Augusta and Savannah, it is expected that the total number of aircraft using Airway V185 is relatively small.

Although the FAA does not maintain records of air traffic in Airway V185, informal communications with air traffic control personnel at the Augusta airport revealed that the southeast quadrant of the air space around the airport (of which Airway V185 is a part) has the least air traffic compared to the other quadrants and that the total traffic in Airway V185 is a fraction of the total operations into and out of the Augusta airport.

Because of the unavailability of traffic data for Airway V185, the following evaluation calculates the maximum number of airway flights per year above which the acceptance guideline probability of 10^{-7} per year contained in RS-002 and NUREG-0800 is exceeded. Regulation 14 CFR 71 provides the criteria for determining the width of the airway. It is 4 nautical miles on either side of the centerline, for a total width of 8 nautical miles (9.2 mi).

$$P_{FA} = C \times N \times A / W$$

where:

P_{FA} = probability per year of an aircraft crashing into a VEGP Units 3 and 4 safety-related structure, 1×10^{-7}

C = in-flight crash rate per mile for aircraft using airway = 4×10^{-10} (RS-002)

N = number of flights per year along the airway

A = effective area of plant or site area in square miles, see below

W = airway width, 9.2 mi

By rearranging this equation, the maximum number of flights corresponding to the acceptance guideline probability of 10^{-7} may be calculated.

NUREG-0800 and RS-002 also provide alternate guidance on the acceptable method for calculating area A. RS-002 specifies the use of the site area because, for ESP Applications where the type of power plant has not been selected, the plant cross-sectional area cannot be defined. However, because the Westinghouse AP1000 design has been selected, the effective area of the plant was used in this analysis.

The effective plant area (A) depends on the length, width, and height of the facility, as well as the aircraft's wingspan, skid distance, and impact angle **(DOE 1996)**.

The safety-related structures of the AP1000 design include only the containment and the auxiliary building; the remainder of the structures is not safety related. The AP1000 containment height is about 234 ft above grade, and the diameter is about 146 ft **(Westinghouse 2001)**.

For traffic in Airway V185, the fractions of the types of aircraft using the airway were assumed to be the same as the fractions of the types of aircraft using Bush Field. Representative values for wingspan, skid distance, and impact angle for each aircraft type follow those suggested in DOE (1996). For military aviation, large aircraft are conservatively used in the estimates. The effective areas for general aviation, air taxi and commercial, air carrier, and military aircraft are 0.025, 0.061, 0.073, and 0.086 sq mi, respectively. Using these effective areas and the fractions of aircraft types (52.9, 12.8, 29.3, and 5 percent for GA, air carrier, air taxi, and military, respectively), the average of the weighted effective plant area, 0.045 mi^2, is determined for the calculation.

Among the representative wingspans, the large military aircraft has the longest wingspan of 223 ft **(DOE 1996)**. The physical separation of the new reactor buildings is about 650 ft. Since this distance is longer than the largest representative wingspan (223 ft), the estimate of the effective area involves only one unit. In addition, Section 3.5.1.6 of NUREG-0800 also suggests the use of an effective area of one unit of the plant.

To reach the permissible crash probability of 1×10^{-7}, the total number of flights traveling along Airway V185 would need to be about 51,100 per year. This value is higher than the total of all projected itinerant flights for 2025 at Bush Field (see Table 3.5-2).

Although the flight data associated with Airway V185 are not available from the FAA, the number of flights in this airway is expected to be only a fraction of the total Bush Field flights. Therefore, the presence of Airway V185 is not a safety concern for the VEGP site.

Table 3.5-1 Augusta APO Terminal Area Forecast Summary Report – Itinerant Operations

Year	General Aviation	Air Taxi & Commercial	Air Carrier & Commercial	Military	Total
1990	22,023	14,941	6,495	4,522	47,981
1991	19,175	9,462	6,576	3,242	38,455
1992	17,872	9,393	7,196	3,221	37,682
1993	16,902	8,821	6,455	4,068	36,246
1994	16,896	5,961	6,473	3,727	33,057
1995	16,597	8,876	5,024	3,511	34,008
1996	17,016	9,325	4,225	2,780	33,346
1997	18,995	8,304	4,599	2,561	34,459
1998	19,611	7,518	5,028	2,271	34,428
1999	22,653	6,954	5,183	2,841	37,631
2000	21,975	6,663	4,969	3,354	36,961
2001	19,961	7,378	4,929	2,954	35,222
2002	20,085	7,164	4,286	3,082	34,617
2003	17,622	9,058	4,393	2,843	33,916
2004	18,658	9,441	4,934	2,528	35,561
2005	13,307	8,226	4,585	1,799	27,917
2006	13,618	8,328	4,585	1,799	28,330
2007	13,937	8,432	4,585	1,799	28,753
2008	14,263	8,537	4,585	1,799	29,184
2009	14,597	8,644	4,585	1,799	29,625
2010	14,939	8,751	4,585	1,799	30,074
2011	15,288	8,860	4,585	1,799	30,532
2012	15,646	8,971	4,585	1,799	31,001
2013	16,012	9,083	4,585	1,799	31,479
2014	16,387	9,196	4,585	1,799	31,967
2015	16,611	9,310	4,585	1,799	32,305
2016	16,837	9,426	4,585	1,799	32,647
2017	17,067	9,544	4,585	1,799	32,995
2018	17,300	9,663	4,585	1,799	33,347
2019	17,536	9,783	4,585	1,799	33,703
2020	17,776	9,905	4,585	1,799	34,065
2021	18,018	10,028	4,585	1,799	34,430
2022	18,264	10,153	4,585	1,799	34,801
2023	18,514	10,280	4,585	1,799	35,178
2024	18,766	10,408	4,585	1,799	35,558
2025	19,023	10,538	4,585	1,799	35,945

Source: APO 2006

Table 3.5-2 Augusta APO Terminal Area Forecast Summary Report – Total Operations

Year	Itinerant Operations	Local Operations	Total Operations
1990	47,981	21,708	69,689
1991	38,455	16,861	55,316
1992	37,682	11,516	49,198
1993	36,246	7,452	43,698
1994	33,057	6,404	39,461
1995	34,008	7,171	41,179
1996	33,346	8,708	42,054
1997	34,459	8,871	43,330
1998	34,428	8,171	42,599
1999	37,631	14,223	51,854
2000	36,961	13,839	50,800
2001	35,222	10,770	45,992
2002	34,617	9,427	44,044
2003	33,916	7,881	41,797
2004	35,561	8,340	43,901
2005	27,917	5,386	33,303
2006	28,330	5,440	33,770
2007	28,753	5,491	34,244
2008	29,184	5,542	34,726
2009	29,625	5,593	35,218
2010	30,074	5,646	35,720
2011	30,532	5,699	36,231
2012	31,001	5,752	36,753
2013	31,479	5,806	37,285
2014	31,967	5,861	37,828
2015	32,305	5,917	38,222
2016	32,647	5,973	38,620
2017	32,995	6,030	39,025
2018	33,347	6,088	39,435
2019	33,703	6,146	39,849
2020	34,065	6,206	40,271
2021	34,430	6,266	40,696
2022	34,801	6,326	41,127
2023	35,178	6,387	41,565
2024	35,558	6,450	42,008
2025	35,945	6,513	42,458

Source: APO 2006

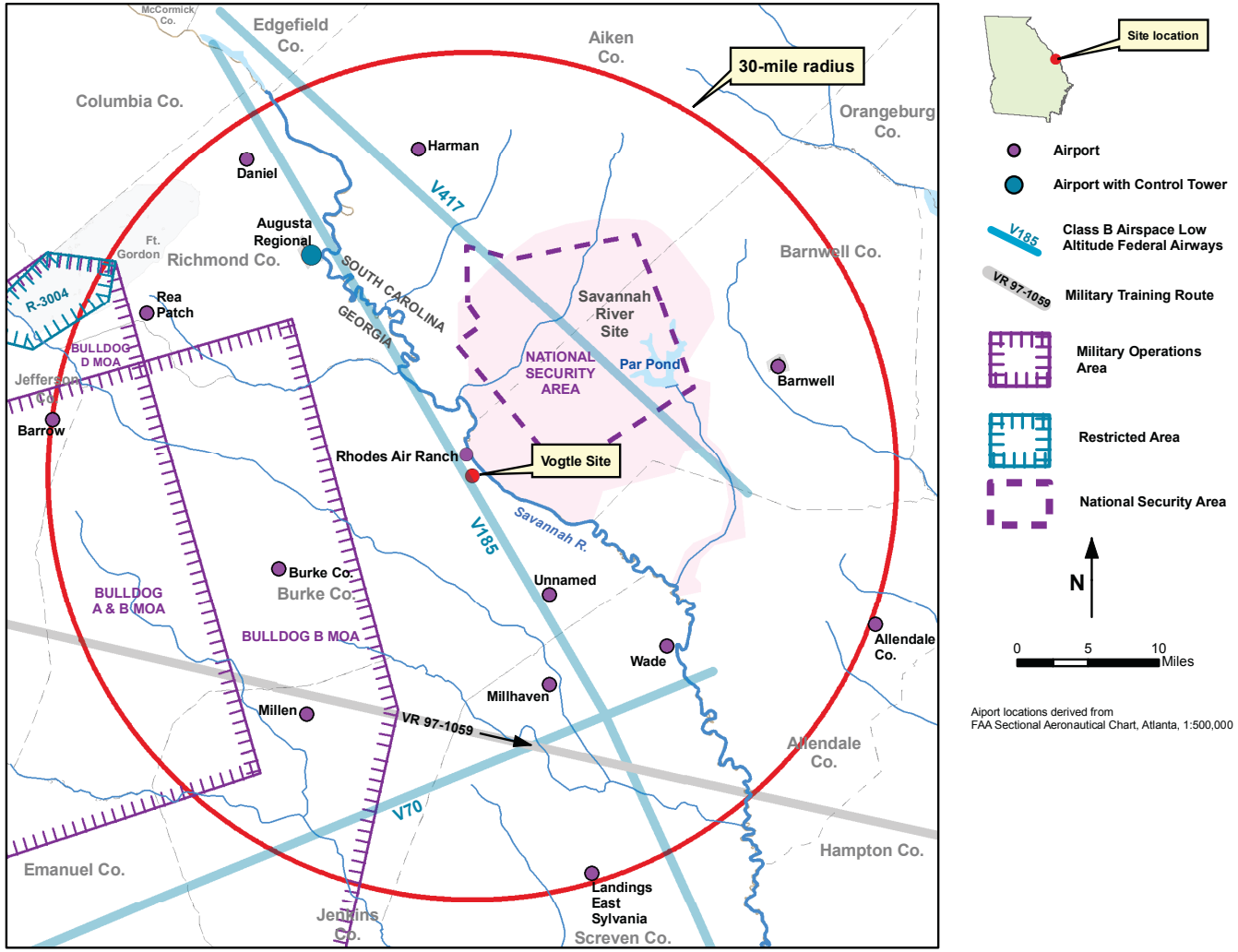

Figure 3.5-1 Airports Within 30 Miles of Vogtle Facility

Section 3.5 References

(APO 2006) *APO Terminal Area Forecast Summary Report*, Federal Aviation Administration, http://www.apo.data.faa.gov/wtaf/, issued February 2006, accessed 5/2/2006.

(Atlanta 2005) *Atlanta Sectional Aeronautical Chart*, 74th Edition, U.S. Department of Transportation, Federal Aviation Administration, March 17, 2005.

(DOE 1996) *Accident Analysis for Aircraft Crash into Hazardous Facilities*, DOE Standard, DOE-STD-3014-96, US Department of Transportation, October 1996.

(Westinghouse 2001) *Nuclear Island General Arrangement, AP1000 Advanced Passive Light Water Reactor*, Rev. 0, Section B-B, DCD Number APP 1000 P2 902, Westinghouse Electric Company, 08/06/2001.

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Chapter 13 Conduct of Operations

13.3 Emergency Planning

This section, in conjunction with Part 5 (*Emergency Plan*) of the Early Site Permit (ESP) Application, describes emergency planning for the proposed addition of two Westinghouse Electric Company, LLC (Westinghouse) AP1000 reactor units at the Vogtle Electric Generating Plant (VEGP) site. This section contains the information required by 10 CFR 52.17, *Contents of Applications*, involving review of the VEGP site physical characteristics for significant impediment to development of revised VEGP emergency plans. In addition, Southern Nuclear Operating Company, Inc. (SNC) has chosen to submit a proposed complete and integrated emergency plan (Part 5) for approval by the U.S. Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 52.17(b)(2)(ii).

The proposed emergency plan is designed to comply with 10 CFR 50.47(b) and 10 CFR 50 Appendix E. The emergency plan was developed using the current VEGP Emergency Plan **(SNC 2005)** and the guidance contained in:

- NUREG 0654/FEMA-REP-1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,* Revision 1, U. S. Nuclear Regulatory Commission, November 1980 (NUREG-0654)
- NEI 99-01, *Methodology for Development of Emergency Action Levels* **(NEI 2003)**
- NUREG 0654/FEMA-REP-1, Revision1, Supplement 2, *Criteria for Emergency Planning in an Early Site Permit Application*, Draft Report Comment, U.S. Nuclear Regulatory Commission, April 1, 1996.

Because details of some elements of the emergency plan can not be completed during the ESP application phase, a set of Inspection Test Analysis and Acceptance Criteria (ITAAC) were developed and are included as appendices to the proposed VEGP Emergency Plan (i.e., ESP Application Part 5, Annex V2 Appendices 3 and 4).

13.3.1 Physical Characteristics

13.3.1.1 Site Description

SNC proposes to add two Westinghouse AP1000 pressurized water reactor units (new Units 3 and 4) to the existing VEGP site. The VEGP currently consists of two Westinghouse 1,200

megawatts electrical (MWe) pressurized water reactor units. The plant is on a 3,169-acre site located in the eastern portion of Burke County, Georgia, approximately 30 river miles upstream from the intersection of the Savannah River with U.S. Highway 301, as shown on Figure 13.3-1. With the exception of existing VEGP Units 1 and 2, and the Georgia Power Company (GPC) combustion turbine plant, Plant Wilson, there are no commercial, industrial, institutional, recreational, or residential structures within the proposed four unit site area. The nearest point to the exclusion area boundary (EAB) is the property line located approximately 3,500 ft southwest of the Unit 4 power block area. Figure 13.3-2 shows the site and the locations of the existing buildings on the site. The locations of the VEGP emergency facilities are also shown on Figure 13.3-2.

The site is located in a sparsely populated section of eastern Georgia near the Savannah River approximately 15 miles east-northeast of the City of Waynesboro. The area near the site is lowlands and is not used for commercial or industrial purposes. The site is adjacent to the Savannah River which is a major river in the southeastern United States, forming most of the border between South Carolina and Georgia. The river flows southeasterly and is approximately 350 miles long. The Savannah River is used primarily to support industry, recreation, and natural habitat development.

Adjacent to the site on the South Carolina side of the Savannah River is the United States Department of Energy's (DOE's) Savannah River Site (SRS). As described in an agreement **(DOE 1999)** between the DOE and SNC, DOE's SRS is responsible for all emergency planning for the area included in the VEGP emergency planning zones (EPZs) that lie within the boundaries of the SRS.

Land within about 10 miles of the site is primarily forested with limited agricultural and some rural housing. State highways that transverse the area within about ten miles of the site include Georgia Highways 23, 56, and 80 and South Carolina Highway 125. Several paved county roads also traverse the area within about 10 miles of the site. One railroad spur of the Norfolk Southern railroad line transverses the area within about 10 miles of the site and terminates at the VEGP site.

13.3.1.2 Area Population

The small population center of Girard, Georgia (population 227 from 2000 census) is located approximately seven miles south of VEGP site. Also, the town of Sardis, Georgia (population 1,171 from 2000 census) is located approximately 12 miles south of the VEGP site.

The permanent population within about 10 miles of the VEGP site is estimated to be 3,017. Transient populations consist of daytime populations, recreation populations, and employment data. Most of the transient population will consist of areas used by hunters and fishermen along

the Savannah River. These will be congregated near three public boat landings – Two in Burke County, Georgia(the Vogtle boat landing and Brigham's Landing); and one in Aiken County, South Carolina (Gray's Landing). The total peak transient population is estimated to be 750 **(IEM 2006)**. Two special facility populations are located within about 10 miles of the site. One is the VEGP site itself. Approximately 850 people work at the site. In addition, a private school (Lord's House of Praise Christian School) is located approximately 10 miles west of the Site. The school population consists of approximately 50 students and 20 teachers and staff.

Workforce populations for the SRS are described in the SRS emergency plan **(DOE 2005)**.

SNC concludes that there are no physical characteristics, unique to the VEGP site, which poses a significant impediment to development of the revised emergency plans for the VEGP.

13.3.2 Emergency Plan

Part 5 of the ESP Application contains the complete and integrated VEGP Emergency Plan.

13.3.3 Emergency Planning Zones

The emergency planning zones (EPZs) for the VEGP are based on the requirements contained in 10 CFR 50 Appendix E which require the plume exposure pathway to be an area about 10 miles in radius and the ingestion pathway EPZ to be an area about 50 miles in radius. The VEGP EPZs meet this requirement and are defined as the area about 10 miles and 50 miles in radius respectively, from a point midway between VEGP Units 1 and 2. The defined EPZs for the proposed AP1000 units will use the same EPZs as are currently defined for VEGP Units 1 and 2. The plume exposure EPZ is shown on Figure 13.3-3 and the ingestion pathway EPZ is shown on Figure 13.3-4.

13.3.A.1 Plume Exposure Pathway

Using the guidance contained in NUREG-0654, SNC has further defined the plume exposure into a set of geopolitical zones as described in Table 13.3-2, and shown in Figure 13.3-3.

13.3.A.2 Ingestion Pathway

The EPZ for ingestion exposure includes an area within a 50 mile radius of the VEGP. Table 13.3-1 below shows the respective counties in each State that are located within the ingestion pathway.

Table 13.3-1 VEGP Ingestion Pathway Counties

Georgia Counties		South Carolina Counties	
Bulloch	Burke	Aiken	Allendale
Candler	Columbia	Bamburg	Barnwell
Effingham	Emanuel	Colleton	Edgefield
Glasscock	Jefferson	Hampton	Lexington
Jenkins	Johnson	McCormick	Orangeburg
Lincoln	McDuffie	Saluda	Jasper
Richmond	Screven		
Warren	Washington		

Planning for the ingestion exposure pathway is a responsibility of the States of Georgia and South Carolina. Detailed information about the ingestion exposure pathway EPZ can be obtained from the States' Radiological Emergency Plans **(Georgia 2005a, 2005b; South Carolina 2004)**. The ingestion exposure pathway EPZ is shown in Figure 13.3-4.

13.3.4 Evacuation Time Estimates

To support the Vogtle ESP application for the proposed new AP1000 units at the VEGP, SNC contracted with Innovative Emergency Management, Inc. (IEM) to produce new evacuation time estimates (ETE) for the VEGP plume exposure pathway. IEM conducted the analysis using estimated 2006 population data and projected 2010 population data. The methods used to obtain population data and to estimate the ETEs are documented in an IEM report **(IEM 2006)**.

The total permanent resident populations within the 10-mile EPZ for the VEGP are estimated to be 3,017 for 2006 and 3,162 for 2010. This population is broken down by protective action zone (PAZ) and by sector and ring within the report. There is not a major change in the permanent population figures because the power station is located in a densely wooded rural area, and no significant changes in the land use pattern is expected around the plant in the next four years. Transient population consists of workers employed within the area and recreational sportsmen on the Savannah River. Special facilities populations are composed of students, teachers, and other employees at the Lord's House of Praise Christian School, and employees of the VEGP.

Based on experiences following the construction of Units 1 and 2, the permanent population within the 10 mile EPZ is not expected to increase significantly during the construction and subsequent operation of Units 3 and 4.

IEM used PTV Vision VISUM, a computer simulation model, to perform the ETEs. In order to represent the most realistic emergencies, ETEs have been prepared for several temporal, seasonal, and weather conditions. Evacuations for the nine geographical evacuation areas were modeled individually in each of three seasonal scenarios: Winter Weekday, Winter Weeknight, and Fall Weekend. The winter weekday and weeknight scenarios represent summer weekday and weeknight scenarios because the populations are the same. The fall weekend scenarios are the same as the other weekends except for the areas on and around the Savannah River, which includes an increased population due to recreational sportsmen. These scenarios were considered under both fair and adverse weather conditions. ETEs for 2006 fair weather ranged from 1 hour and 25 minutes to 1 hour and 45 minutes. ETEs for 2006 adverse weather conditions ranged from 1 hour 40 minutes to 1 hour 55 minutes. ETEs for 2010 fair weather conditions ranged from 1 hour 45 minutes to 1 hour 55 minutes. ETEs for 2010 adverse weather conditions ranged from 2 hours 5 minutes to 2 hours 45 minutes. No significant traffic congestion was observed for simulations for either 2006 or 2010.

13.3.5 Contacts and Agreements

SNC currently maintains letters of agreement or contracts with State and local government agencies, the DOE SRS, medical support facilities, and independent industry support organizations (all referred to as simply ‘agencies’), in support of emergency planning at the VEGP for existing Units 1 and 2. Table 13.3-3 identifies the agencies in which SNC maintains current letters of agreements or contracts with, including the point of contact for each agency; with the exception of communication agencies. Agreements with communication agencies will be transferred to the respective State and/or local emergency plans. Copies of the existing letters of agreement and contracts will be submitted under separate correspondence.

In support of this ESP Application, SNC contacted each of these agencies by letter (i.e., supplemental letters of agreement) notifying them of the proposed addition of two new AP1000 reactor plants at the VEGP site and the revised emergency plans for VEGP. Each agency received one of two types of supplemental letters of agreement, depending on the type of agency. One type of supplemental letter of agreement requested the agency to commit to continued participation in any further development of the VEGP emergency plans. The second type of supplemental letter of agreement requested the agency to concur that the proposed VEGP emergency plans are practicable and to commit to participating in any further development of the VEGP emergency plans, including required field demonstrations under the plans. Each agency committed to their requested responsibilities specified in the supplemental letters of agreement by signing the letter. Therefore, the executed supplemental letters of agreement, along with the existing letters of agreement, certify that (1) the proposed VEGP Emergency Plan is practicable; (2) the agencies are committed to participating in any further

development of the proposed VEGP Emergency Plan, including any required field demonstrations; and (3) the agencies are committed to executing their responsibilities under the VEGP Emergency Plan in the event of an emergency. Item (3) is addressed in the existing letters of agreement and contracts with State and local government agencies, the DOE SRS, medical support facilities, and independent industry support organizations. Copies of the supplemental letters of agreement are provided in Appendix 13.3A.

Table 13.3-2 Geographical Boundaries of Evacuation Zones

Evacuation Zones	Geographical Boundaries
A	Northeast - Savannah River
	Southeast, South/Southwest and West Northwest - 2-mile area
B-5	North - 2-mile area
	West-Ebenezer Road
	Southwest - GA Highway 23
	South - Chance Road
	Southeast - Griffin's Landing Road
	Northeast - Savannah River
B-10	Northwest - Griffin's Landing Road
	West-Dixon Road and City of Girard eastern boundary
	Southwest – Stony Bluff Road
	Southwest – Royal Road and the 10-mile area
	Northeast – Savannah River
C-5	Northwest – Jack Delaigle Road
	Southwest – GA Highway 23
	East – Ebenezer Church Road
C-10	North – Chance Road
	West – Briar Creek Road, Buck Road, and GA Highway 23
	South – Johnson Road, Ellison Road, Murray Hill Road, and the 10-mile area
	Southeast – Stony Bluff Road
	East – City of Girard eastern boundary and Dixon Road
D-5	North – Hancock Landing Road
	West – Hancock Landing Road and Thomas Road
	Southwest – Hatchers Mill Road and Thompson Bridge Road
	South – Gordon Road and Tom Bargeron Road
	East – GA Highway 23, Brier Creek Road, and Buck Road
E-5	North – Ben Hatcher Road
	East – River Road
	South – Hancock Landing Road
	West – Nathaniel Howard road

Table 13.3-2 (cont.) Geographical Boundaries of Evacuation Zones

E-10	Northeast – Nathaniel Howard Road
	North – GA Highway 80, GA Highway 23, and Ben Hatcher Road
	West – 10-mile area and Bates Road
	South – Thompson Bridge, Seven Oaks Road, and Botsford Church Road
	East – Hancock Landing Road
F-5	North – Savannah River
	East – Savannah River
	West – 5-mile radius and River Road
	South – 2-mile area
F-10	Northeast – Savannah River
	West – 10-mile radius and GA Highway 23
	South – Ben Hatcher Road
	East – River Road and the 5-mile area
G-10	North – Gray's Landing on the Savannah River to the CSX railroad track and Cowden Plantation road
	East – SRS boundary and the CSX boundary
	South – Savannah River and the SRS boundary
	West – Savannah River
H-10	North – SRS boundary and South Carolina Highway 125 extending into Allendale County's northern boundary
	East – Creek Plantation Road
	South – Savannah River
	West – SRS boundary

Table 13.3-3 Agency Agreements and Points of Contact

Agency	Contact/Title	Address
Aiken County Emergency Services	David Ruth/ EP Coordinator	828 Richland Ave. West Aiken, SC 29801
Allendale County EPA	Linda Sanders/ Director	P.O. Box 129 Allendale, SC 29810
AREVA ANP, Inc.	Mr. Ed Petterson Manager, SG Business Development	155 Mill Ridge Road Lynchburg, VA 24502
Barnwell County EMA	Roger Riley/ Director	57 Wall St. Barnwell, SC 29812
Bechtel Power Corporation	J. E. Love/ NOPS Project Manager	5275 Westview Drive Frederick, Maryland
Burke County EMA	Rusty Sanders/ Director	P.O. Box 51-B Waynesboro, GA 30830
Burke County Sheriff's Department	Mr. Gregory T. Coursey/Sheriff	25 Highway 24 South P.O. Box 702 Waynesboro, GA 30830
Burke Medical Center	Jennifer A. Royal/ Administrator	351 Liberty Street Waynesboro, Georgia 30830
Doctors Hospital	Mr. C. Shayne George President/CEO	3651 Wheeler Road Augusta, GA 30909
Dr. B. Lamar Murray	Dr. B. Lamar Murray	311 4th Street Waynesboro, Georgia 30830
Georgia DNR	James Hardeman/ Manager, Radiological Programs	4244 International Parkway, Suite 114 Atlanta, Georgia 30354
Georgia OHS	Charles English/ Acting Director	P.O. Box 18055 Atlanta, GA 30316-0055
Joseph M. Still Burn Centers Inc.	Dr. Robert F. Mullins	P.O. Box 3725 Augusta, Georgia 30914-3725
Medical Specialists, Inc.	Dr. Joseph L. Jackson Sr.	305 Jones Ave. Waynesboro, GA 30830
National Oceanic and Atmospheric Administration (NWS)	Dean P. Gulezian/ Director, NWS Eastern Region	630 Johnson Ave. Bohemia, NY 11716

Table 13.3-3 (Cont.) Agency Agreements and Points of Contact

Agency	Contact/Title	Address
Radiation Management Consultants, Inc.	Dr. Roger Linnemann/ President	3019 Darnell Road Philadelphia, PA
South Carolina DHEC	Sandra Threatt/ Manager, Nuclear Response & Environmental Surveillance	2600 Bull Street Columbia, SC 29201
South Carolina EMD	Ron Osborne/ Director	1100 Fish Hatchery Road West Columbia, SC 29172
US DOE	Cindy Brizes	P.O. Box A Aiken, South Carolina
Westinghouse Electric Co. Nuclear Services	E. C. Arnold/ Manager, Southern Nuclear Projects	P. O. Box 355 Pittsburgh PA 15230-0355
WSRC Emergency Management	Debra Foutch	Building 703-43A, Room 34-6 Aiken, SC 29808

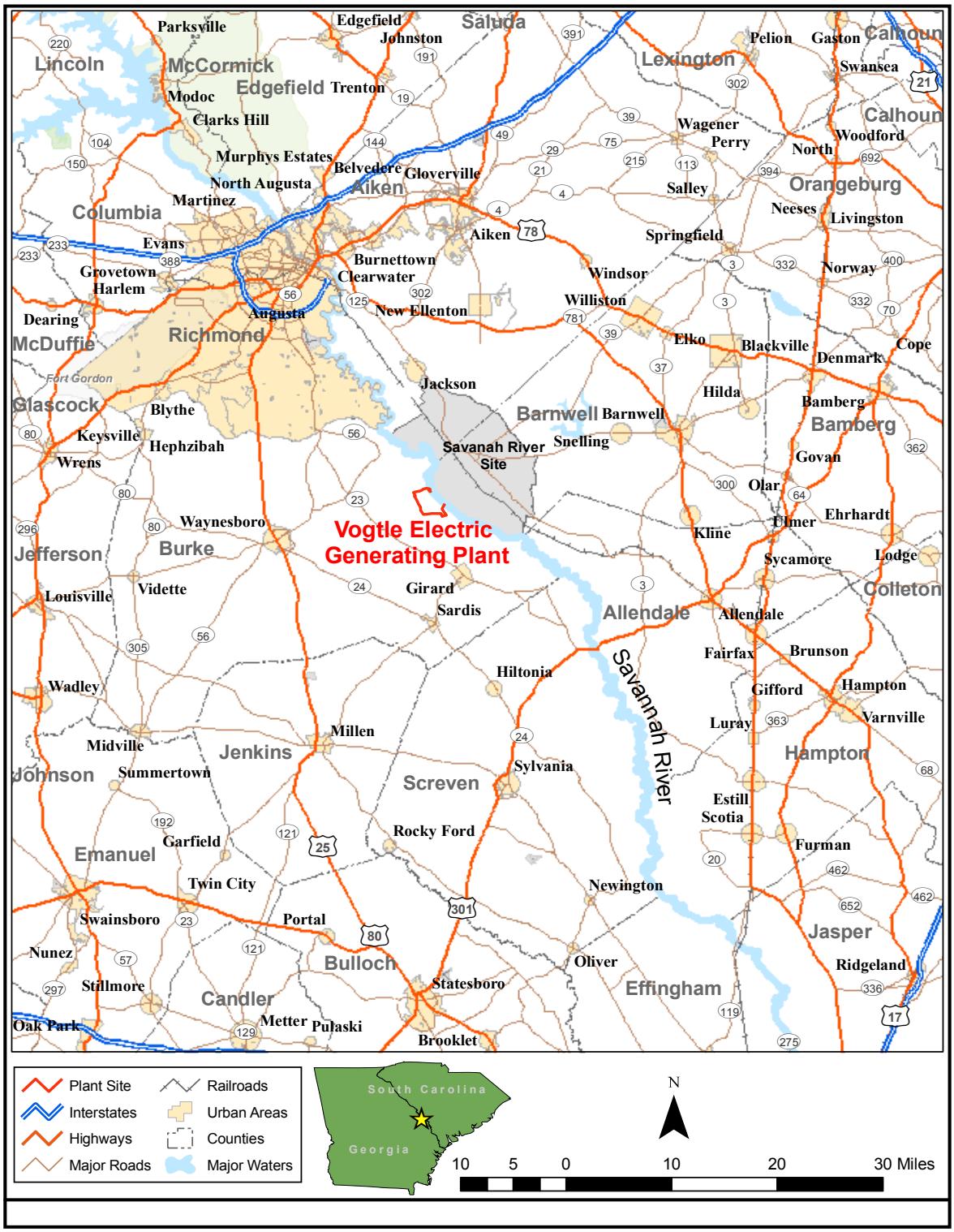


Figure 13.3-1 VEGP Site Vicinity Map

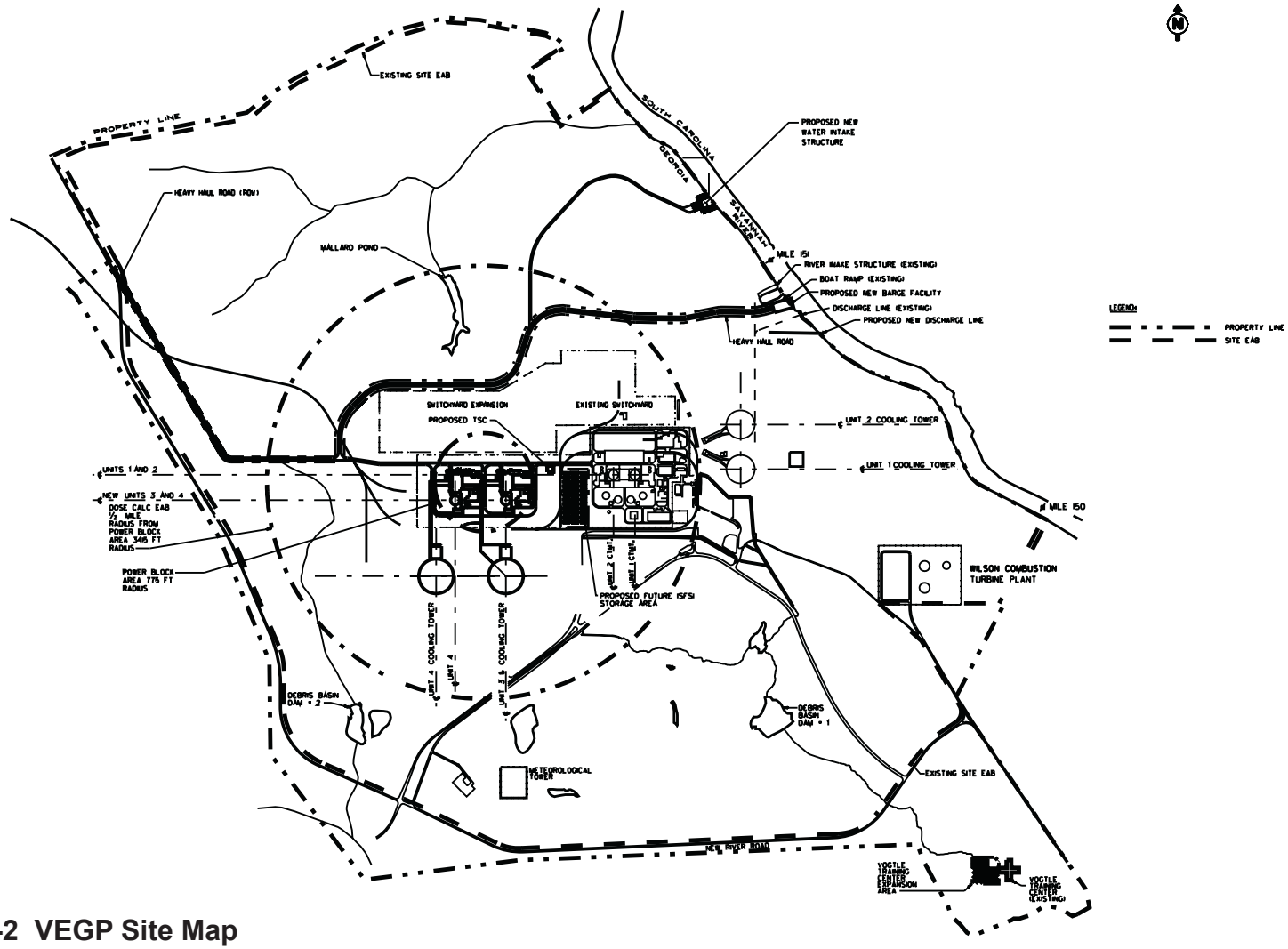


Figure 13.3-2 VEGP Site Map

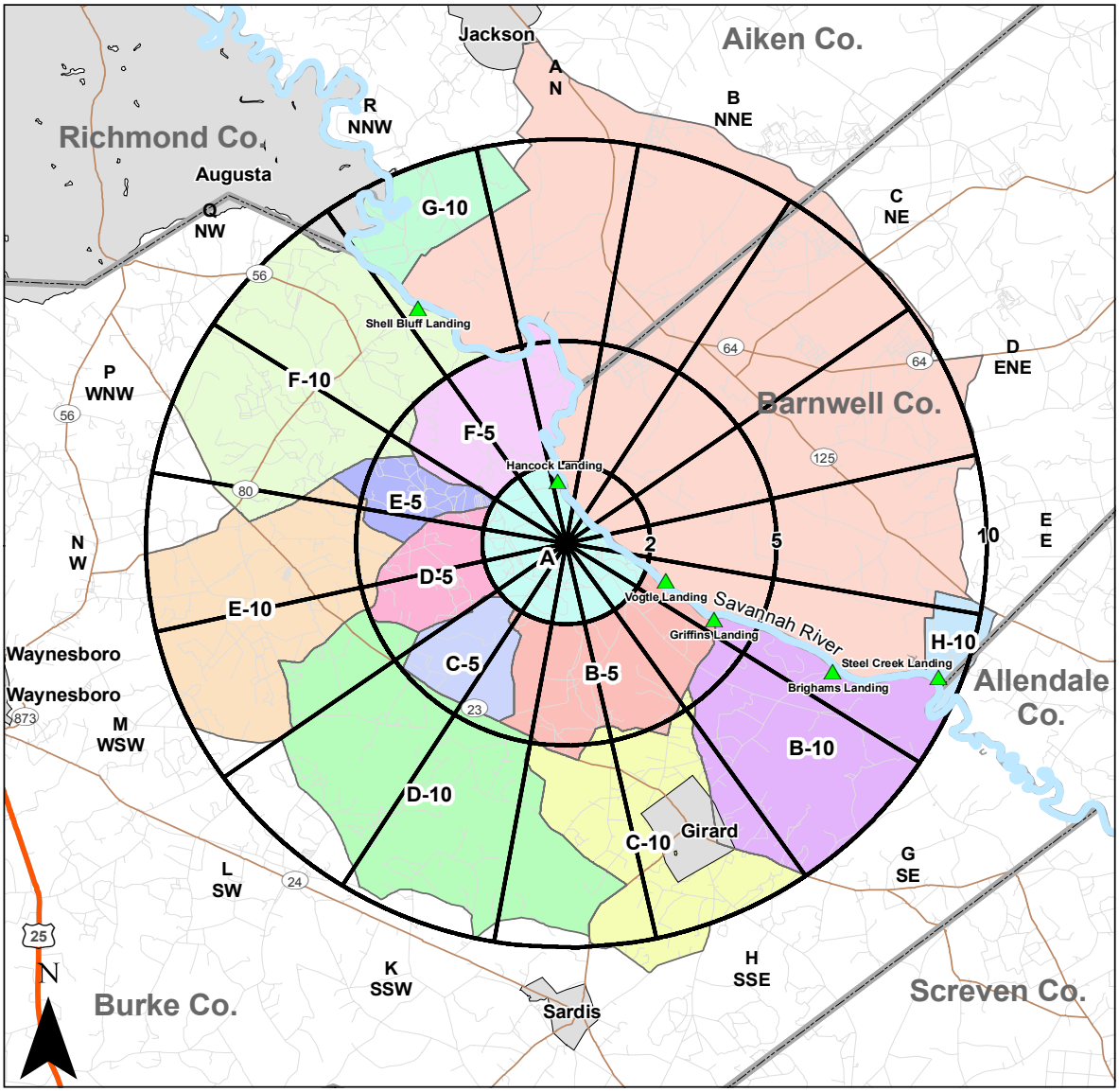
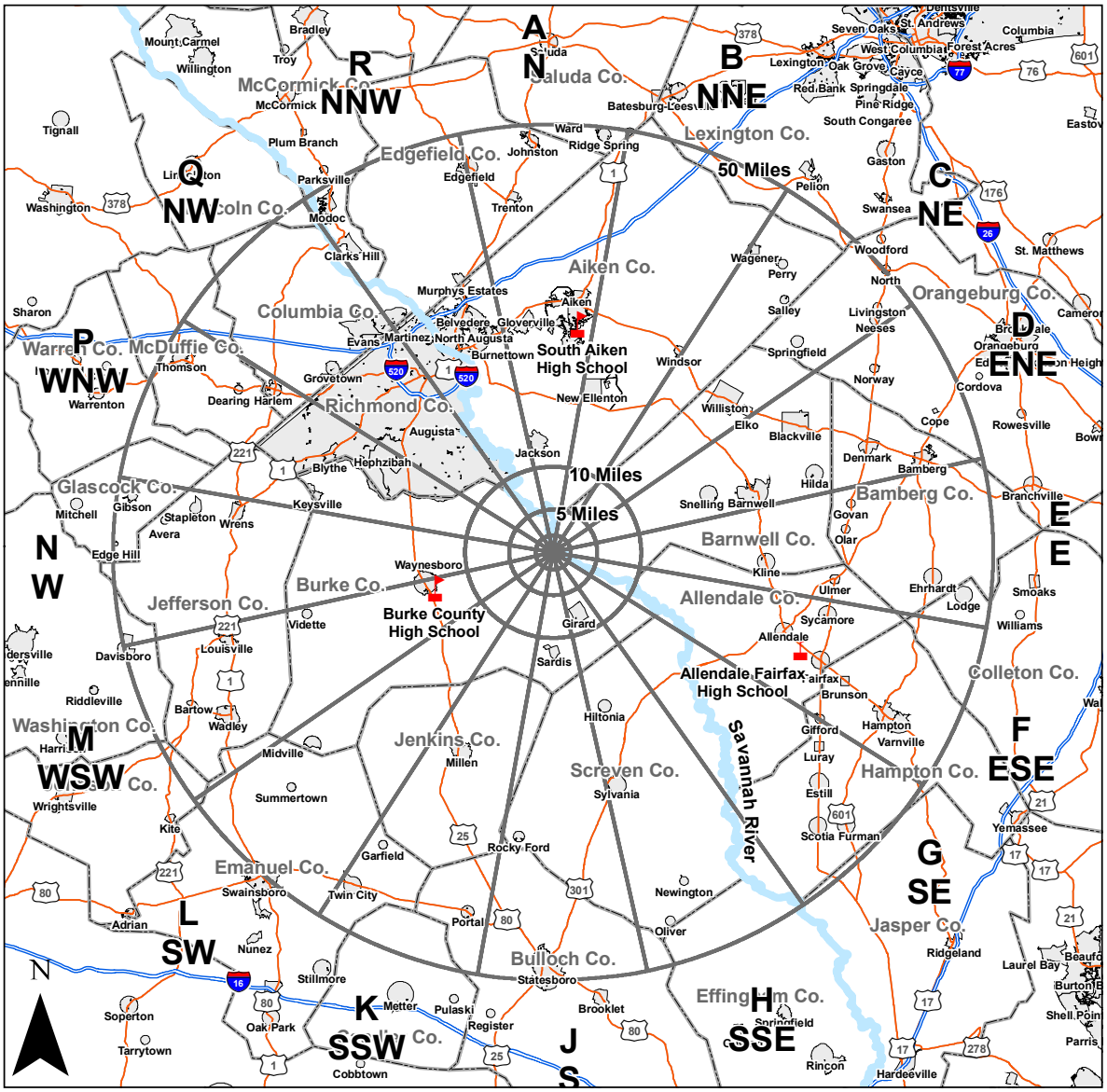


Figure 13.3-3 VEGP Plume Exposure Geopolitical Zones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10 Miles
5 Miles
Aiken Co.
Columbia Co.
Richmond Co.
Edgefield Co.
Lexington Co.
Orangeburg Co.
Bamberg Co.
Barnwell Co.
Allendale Co.
Burke Co.
Jefferson Co.
Jenkins Co.
Screven Co.
Hampton Co.
Colleton Co.
Jasper Co.
Bulloch Co.
Emanuel Co.
Glascock Co.
Warren Co.
McDuffie Co.
McCormick Co.
Saluda Co.
Savannah River
South Aiken High School
Burke County High School
Allendale Fairfax High School
Augusta
Aiken
Columbia
Lexington
Orangeburg
Bamberg
Barnwell
Allendale
Waynesboro
Statesboro
Swainsboro
Sylvania
Millen
Hiltonia
Sardis
Girard
Vidette
Louisville
Wadley
Midville
Summertown
Wrightsville
Kite
Garfield
Twin City
Rocky Ford
Portal
Nunez
Adrian
Stillmore
Soperton
Tarrytown
Oak Park
Metter
Pulaski
Register
Cobbtown
Brooklet
Newington
Oliver
Ridgeland
Hardeeville
Rincon
Springfield
Estill
Scotia
Furman
Gifford
Luray
Varnville
Hampton
Brunson
Fairfax
Allendale
Sycamore
Olar
Govan
Denmark
Bamberg
Blackville
Elko
Williston
Snelling
Barnwell
Hilda
Kline
Ulmer
Ehrhardt
Lodge
Smoaks
Williams
Branchville
Rowesville
Cordova
Norway
Cope
Windsor
Springfield
Salley
Livingston
Neeses
Woodford
North
Wagener
Perry
Pelion
Swansea
Gaston
Batesburg-Leesville
Ridge Spring
Ward
Johnston
Edgefield
Trenton
Modoc
Parksville
Plum Branch
McCormick
Clarks Hill
Murphys Estates
Belvedere
Gloverville
Evans
Martinez
North Augusta
Burnettown
New Ellenton
Jackson
Hephzibah
Blythe
Keysville
Grovetown
Dearing
Harlem
Thomson
Warrenton
Washington
Tignall
Mount Carmel
Willington
Bradley
Troy
Mitchell
Gibson
Stapleton
Wrens
Avera
Edge Hill
Davisboro
Riddleville
Bartow
Harris
Seven Oaks
St. Andrews
West Columbia
Forest Acres
Cayce
Oak Grove
Red Bank
Springdale
Pine Ridge
South Congaree
Columbia
Eastover
St. Matthews
Cameron
Orangeburg
Branchville
Yemassee
Laurel Bay
Beaufort
Burton
Shell Point
Parris
Effingham Co.
Jasper Co.
Hampton Co.
Colleton Co.
Washington Co.
Glascock Co.
Warren Co.
McDuffie Co.
McCormick Co.
Saluda Co.
Aiken Co.
Columbia Co.
Richmond Co.
Edgefield Co.
Lexington Co.
Orangeburg Co.
Bamberg Co.
Barnwell Co.
Allendale Co.
Burke Co.
Jefferson Co.
Jenkins Co.
Screven Co.
Hampton Co.
Colleton Co.
Jasper Co.
Bulloch Co.
Emanuel Co.
Effingham

Section 13.3 References

(DOE 1999) Savannah River Operations Office Memorandum of Agreement with the Vogtle Electric Generating Plant, April 1999

(DOE 2005) Savannah River Site Emergency Plan (U), September 2005

(Georgia 2005a) State of Georgia Radiological Emergency Plan – Base Plan, Office of Homeland Security, April 2005

(Georgia 2005b) State of Georgia Radiological Emergency Plan – Annex D, Plant Vogtle, Office of Homeland Security, May 2005

(IEM 2006) Report, *Evacuation Time Estimates for the Vogtle Electric Generating Plant,* Innovative Emergency Management, Inc., May 2006

(NEI 2003) Technical Report NEI 99-01, *Methodology for Development of Emergency Action Levels*, Revision 4, Nuclear Energy Institute, January 2003.

(South Carolina 2004) State of South Carolina Radiological Emergency Response Plan, Office of Adjutant General, June 2004

(SNC 2005) Vogtle Electric Generating Plant Emergency Plan, Revision 40, Southern Nuclear Operating Company, May 2005.

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Appendix

13.3A Supplemental Letters of Agreement

Copies of the supplemental letters of agreement follow in order from the below listed agencies:

Aiken County Emergency Services
Allendale County EPA
AREVA ANP
Barnwell county EMA
Bechtel Power Corporation
Burke County EMA
Burke County Sheriff's Department
Burke Medical Center
Doctors Hospital
Dr. B. Lamar Murray
Georgia DNR
Georgia OHS
Joseph M. Still Burn Centers Inc.
Medical Specialists, Inc.
National Oceanic and Atmospheric Administration (NWS)
Radiation Management Consultants, Inc.
South Carolina DHEC
South Carolina EMD
US DOE
Westinghouse Electric Co. Nuclear Services
WSRC Emergency Management

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Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0775

Mr. David Ruth
EP Coordinator, Aiken County Emergency Services
828 Richland Avenue West
Aiken, SC 29801

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Ruth:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the ESP Application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR Part 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Aiken County Emergency Services are aware of the SNC ESP proposed revision to the existing VEGP EP to include provisions for the addition of two new reactors at the VEGP site. Aiken County Emergency Services concur that the proposed EP is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

David Ruth, EP Coordinator
Aiken County Emergency Services

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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AR-06-0776

April 17, 2006

Ms. Linda Sanders
Director, Allendale County EPA
P. O. Box 129
Allendale, SC 29810

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Ms. Sanders:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP)

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP Property. Included in the ESP Application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR Part 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Allendale County EPA is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Allendale County EPA concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

Linda Sanders, Director
Allendale County EPA

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
P. O. Box 1295
Birmingham, Alabama 35201-1295
Tel 205.992.5000

SOUTHERN COMPANY
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JUL 17 2006

AR-06-1555

Mr. Ed Petterson
Manager, SG Business Development
AREVA NP Inc.
155 Mill Ridge Road
Lynchburg, VA 24502

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Mayer:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan. Southern Nuclear understands that commitment to support is bounded by existing Purchase Order SN040082 with Framatome (now Areva) and that Areva would support expanding the scope of this PO to cover the additional VEGP units described.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by July 21, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

AREVA NP Inc. (formerly Framatome ANP, Inc.) is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. AREVA NP, Inc. commits to continuing support in further development of emergency plans. Commitment to support is bounded by existing Purchase Order SN040082 with Framatome (now Areva). Areva supports expanding the scope of this PO to cover the additional VEGP units

Ed Peterson for JD Gale 8/8/06
~~Charlie Mayer, Product Manager~~ JD Gale, VP Sh Services
Framatome ANP, Inc.

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.O1.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0778

Mr. J. E. Love
NOPS Project Manager
Bechtel Power Corporation
5275 Westview Drive
Frederick, MD 21703-8306

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Love:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Bechtel Power Corporation is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Bechtel Power Corporation commits to continuing participation in any further development of emergency plans.

J. E. Love, NOPS Project Manager
Bechtel Power Corporation

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0777

Mr. Roger Riley
Director, Barnwell County EMA
57 Wall Street
Barnwell, SC 29812

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Riley:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Barnwell County EMA is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Barnwell County EMA concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

Roger Riley

Roger Riley, Director
Barnwell County EMA

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0779

Mr. Rusty Sanders
Director, Burke County EMA
P. O. Box 51-B
Waynesboro, GA 30830

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Sanders:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP Application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP EP to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Burke County EMA is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Burke County EMA concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

Rusty Sanders

Rusty Sanders, Director
Burke County EMA

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0780

Ms. Jennifer A Royal
Administrator, Burke Medical Center
351 Liberty Street
Waynesboro, GA 30830

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Ms. Royal:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of

emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Burke Medical Center is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Burke Medical Center commits to continuing participation in any further development of emergency plans.

Jennifer Royal, Administrator
Burke Medical Center

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
Energy to Serve Your World™

JUN 12 2006

AR-06-1263

Mr. Gregory T. Coursey
Sheriff
Burke County, Georgia
25 Highway 24 South
P.O. Box 702
Waynesboro, GA 30830

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Sheriff Coursey:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by July 11, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

The Burke County Sheriff's ~~Department~~ Office is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. The Burke County Sheriff's Department commits to continuing participation in any further development of emergency plans.

Gregory T. Coursey, Sheriff
Burke County, Georgia

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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AR-06-1264

Mr. Terry J. Guinn
President, CEO
Doctors Hospital
3651 Wheeler Road
Augusta, GA 30909

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Guinn:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

RECEIVED JUN 1 3 2006

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by July 11, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Doctors Hospital is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Doctors Hospital commits to continuing participation in any further development of emergency plans.

7/19/06

~~Terry J. Guinn, President/CEO~~ Shayne George, CEO
Doctors Hospital

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0782

Dr. B. Lamar Murray
311 4th Street
Waynesboro, GA 30830

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Dr. Murray:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of

emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Dr. B. Lamar Murray is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Dr. Murray commits to continuing participation in any further development of emergency plans.

Dr. B. Lamar Murray

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0785

Mr. James Hardeman
Manager, Radiological Programs
Georgia Department of Natural Resources
4244 International Parkway, Suite 114
Atlanta, GA 30354

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Hardeman:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR Part 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to

those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Georgia Department of Natural Resources is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Georgia Department of Natural Resources concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

J. Hardeman

James Hardeman, Manager ~~Radiological Programs~~ Environmental Radiation Program
Georgia Department of Natural Resources Environmental Protection Division

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Georgia Department of Natural Resources
4220 International Parkway, Suite 100, Atlanta, Georgia 30354
Noel Holcomb, Commissioner
Carol A. Couch, Ph.D., Director
Environmental Protection Division

April 27, 2006

Mr. Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Dear Mr. Pierce :

This letter is in response to your letter to me of April 17, 2006, in which you requested concurrence on Southern Nuclear's efforts to revise the Vogtle Electric Generating Plant (VEGP) Emergency Plan to reflect the addition of two (2) new Westinghouse AP1000 reactors on the Vogtle site. In particular, you requested that I return a signed copy of the letter to you, with my signature indicating that this agency a) is aware of the proposed revision to the VEGP Emergency Plan to incorporate provisions for two (2) new AP1000 reactors at the Vogtle site, b) concurs that the revised VEGP Emergency Plan is practicable, and c) commits to continuing participation in the development of the VEGP emergency plan, including participation in field demonstrations.

We have been working for some time with Southern Nuclear emergency preparedness staff in this effort, primarily with Mr. Walt Lee, and (prior to his illness) Mr. Chris Boone. We are indeed familiar with Southern Nuclear's plans to submit an Early Site Permit (ESP) application to NRC in the near future, and we have been and remain supportive of Southern Nuclear's efforts to revise the VEGP Emergency Plan to reflect the additional two (2) planned units.

I am pleased to return the signed "Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP" in accordance with your request.

If I can be of additional assistance, please contact me by letter, by telephone at (404) 362-2675 or by electronic mail at Jim_Hardeman@dnr.state.ga.us

Sincerely,

J. Hardeman

James C. Hardeman, Jr., Manager
Environmental Radiation Program

cc: Walt Lee (electronic)

Attachment as stated

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

RECEIVED

APR 2 5 2006

GEMA

SOUTHERN COMPANY
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April 17, 2006

AR-06-0788

Mr. Charles English
Acting Director, OHS GEMA
P. O. Box 18055
Atlanta, GA 30316-0055

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. English:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR Part 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

OHS GEMA is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. OHS GEMA concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of emergency plans, including any required field demonstrations.

Charles English, Acting Director
OHS GEMA

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

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May 02, 2006 AR-06-0781

Dr. Robert F. Mullins
Joseph M. Still Burn Centers Inc.
P. O. Box 3725
Augusta, GA 30914-3725

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Dr. Mullins:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of

emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Joseph M. Still Burn Centers Inc. is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Joseph M. Still Burn Centers Inc. commits to continuing participation in any further development of emergency plans.

Dr. Robert F. Mullins
Joseph M. Still Burn Centers Inc.

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0786

Dr. Joseph L. Jackson Sr.
Medical Specialists, Inc.
305 Jones Avenue
Waynesboro, GA 30830

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Dr. Jackson:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of

emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Medical Specialists, Inc. is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Medical Specialists, Inc. commits to continuing participation in any further development of emergency plans.

Dr. Joseph L. Jackson Sr.
Medical Specialists, Inc.

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

AUGUSTA, GA

SOUTHERN COMPANY
Energy to Serve Your World℠

April 17, 2006

AR-06-0787

Mr. Dean P. Gulezian
Director, NWS Eastern Region
U. S. Department of Commerce
National Oceanic and Atmospheric Administration
630 Johnson Avenue
Bohemia, NY 11716

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Gulezian:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

National Oceanic and Atmospheric Administration NATIONAL WEATHER SERVICE is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. National Oceanic and Atmospheric Administration NATIONAL WEATHER SERVICE commits to continuing participation in any further development of emergency plans.

Dean P. Gulezian

Mr. Dean P. Gulezian
Director, NWS Eastern Region
National Oceanic and Atmospheric Administration

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service – Eastern Region
Airport Corporate Center
630 Johnson Avenue
Bohemia, New York 11716

May 5, 2006

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Dear Mr. Pierce:

Please find enclosed the concurrence you requested I sign regarding the National Oceanic and Atmospheric Administration/National Weather Service commitment to work with your company in further development of emergency plans for the Vogtle Plant. Please work directly with our Columbia, SC Weather Forecast Office on future emergency planning for the plant. Kimberly Campbell, Meteorologist-in-Charge, will be your point of contact. Ms. Campbell can be reached at 803-765-5501 or Kimberly.campbell@noaa.gov .

We look forward to assisting you with this project.

Sincerely,

Dean P. Gulezian
Director, Eastern Region
National Weather Service

Enclosure

cc: Kimberly Campbell

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0789

Dr. Roger E. Linnemann
President
Radiation Management Consultants, Inc.
3019 Darnell Road
Philadelphia, PA 19154-3201

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Dr. Linnemann:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Radiation Management Consultants, Inc. is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Radiation Management Consultants, Inc. commits to continuing participation in any further development of emergency plans.

Roger Linnemann

Dr. Roger H. Linnemann, President
Radiation Management Consultants, Inc.

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
Energy to Serve Your World℠

April 17, 2006

AR-06-0790

Ms. Sandra Threatt
South Carolina DHEC
2600 Bull Street
Columbia, SC 29201

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Ms. Threatt:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

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APR 2 6 2006
SC DHEC BUREAU OF
LAND & WASTE MANAGEMENT

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

South Carolina DHEC is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. South Carolina DHEC concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

~~Sandra Threatt~~ Chris Staton, Director
South Carolina DHEC Division of Waste Assessment & Emergency Response

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

April 17, 2006

AR-06-0791

Mr. Ron Osborne
Director, South Carolina EMD
1100 Fish Hatchery Road
West Columbia, SC 29172

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Osborne:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

South Carolina EMD is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. South Carolina EMD concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

R Osborne

Ron Osborne, Director
South Carolina EMD

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0792

Ms. Cindy Brizes
U. S. Department of Energy
P. O. Box A
Aiken, SC 29802

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Ms. Brizes:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce

Charles R Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

U. S. Department of Energy (DOE) is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. DOE concurs that the proposed emergency plan is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

Cindy Brizes
U. S. Department of Energy

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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April 17, 2006

AR-06-0793

Mr. E. C. Arnold
Manager, Southern Nuclear Projects
Westinghouse Electric Company
Nuclear Services
P. O. Box 355
Pittsburgh, PA 15230-0355

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Mr. Arnold:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit Application's proposed four-unit Emergency Plan.

SNC intends to submit an Early Site Permit application, pursuant to 10 CFR 52, "Early Site Permits; Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The Early Site Permit Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. 10 CFR Part 52 requires, in part, that the Emergency Plan submitted with the Early Site Permit application include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revision to the Emergency Plan for VEGP. In completing the Emergency Plan revision, SNC has concluded that this process provides no additional requirements to the established emergency plans and commitments.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new nuclear reactors at the VEGP site and your continuing commitment to participation in any further development of emergency plans.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the Early Site Permit Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R. Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

Westinghouse Electric Company is aware of the SNC Early Site Permit proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. Westinghouse Electric Company commits to continuing participation in any further development of emergency plans.

E. C. Arnold, Manager, Southern Nuclear Projects
Westinghouse Electric Company

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Westinghouse

Westinghouse Electric Company
Nuclear Services
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

GP-17923
May 4, 2006

Mr. D. E. Grissette
Vice President, Nuclear Vogtle Project
Southern Nuclear Operating Company, Inc.
P. O. Box 1295
Birmingham, Alabama 35201

Ref: AR-06-0793

ATTN: Charles Pierce

SOUTHERN NUCLEAR OPERATING COMPANY
VOGTLE ELECTRIC GENERATING PLANT UNITS 1 AND 2
Transmittal of Signed Copy of Proposed Four-Unit Emergency Plan

Dear Mr. Grissette:

Enclosed is a signed copy of the reference letter, indicating Westinghouse concurrence to support the Vogtle proposed four unit Emergency Plan as requested by the reference. The original of this enclosure has been mailed to Walter Lee at Southern Nuclear.

Should you have any questions or comments on this please contact me at 412-374-3365.

Very truly yours,

E C Arnold

E. C. Arnold, Manager
Southern Nuclear Projects

/jag

Encl.

Original electronically approved in EDMS 2000

Mr. Grissette

GP-17923
May 4, 2006

cc: R. H. Parker (SNC Document Mgmt.)
J. G. Aufdenkampe
R. S. Cowman
T. E. Tynan
S. C. Swanson
C. R. Pierce
W. H. Lee *
J. L. Tain
P. D. Rushton

* w/att.

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
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AR-06-0794

April 17, 2006

Ms. Debra Foutch
WSRC Emergency Management
Building 703-43A, Room 34-6
Aiken, SC 29808

Re: Vogtle Electric Generating Plant Early Site Permit
Request for Commitment to Support a Future Four-Unit Emergency Plan for VEGP

Dear Ms. Foutch:

Southern Nuclear Operating Company (SNC) is requesting your commitment in support of the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) Application's proposed four-unit Emergency Plan (EP).

SNC intends to submit an ESP application, pursuant to 10 CFR 52, "Early Site Permits, Standard Design Certification, and Combined Licenses for Nuclear Power Plants," in August 2006. The ESP Application evaluates the addition of two Westinghouse AP1000 advanced reactor plants on the VEGP property. Included in the application will be a Complete and Integrated Emergency Plan, as defined in 10 CFR 52 and under guidance contained in NUREG-0654 FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." 10 CFR 52 requires, in part, that the submitted EP include a description of contacts and arrangements made with local and State agencies with emergency planning responsibilities. Contacts are being accomplished with this written correspondence; arrangements are the plans and commitments already in place to protect public health and safety in case of a nuclear accident.

SNC has prepared a revised EP for VEGP. The revised plan will consist of a base plan (applicable to all four nuclear units) and two annexes, one for each of the two plant designs (existing and AP1000). The base plan and each annex contain appendices that are applicable to the respective annex.

SNC is also in the process of conducting a new evacuation time estimate (ETE) study for the VEGP site. Preliminary results suggest that no major changes in evacuation plans and procedures will be required to support the addition of two new nuclear units at the VEGP site.

The revised EP is similar to the existing plan, but has been modified to incorporate the addition of two advanced Westinghouse AP1000 units. In support of the addition of new nuclear units at the VEGP site, SNC intends to add a separate facility that will contain the technical support center (TSC) for the site. Communication equipment and operational procedures will be very similar to those currently used at VEGP. Using a single TSC should help minimize the impact of the revised plan on State and county emergency planning. Changes to the plan include:

- Revision of staffing tables for the new nuclear units
- Addition of site specific Emergency Action Levels (EALs) for the new nuclear units
- Addition of two operational support centers, one each for the new nuclear units
- Addition of a new TSC to be used for all four units
- Revisions to reflect the new ETE study

In completing the ESP Application's EP, SNC has concluded that this process provides no additional requirements to the established EPs for evacuation or the implementation of other protective actions.

Enclosed are two original copies of this letter. Please sign both, retain one for your files and return one to me. Your signature will attest to your awareness of SNC's intent to revise the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site, your concurrence that the proposed EP is practicable, and your continuing commitment to participation in any further development of emergency plans, including any required field demonstrations.

SNC will continue to support your emergency planning efforts. Please direct comments and questions to Walter H. Lee, SNC's Emergency Planning Supervisor, at (205) 992-5627.

To support our schedule for the ESP Application, SNC would appreciate receiving your written concurrence by May 15, 2006. We thank you again for your continued support of emergency planning at the VEGP site, and we look forward to working with you and your staff in the future.

Respectfully,

Charles R Pierce

Charles R Pierce
Early Site Permit Manager
Southern Nuclear Operating Company
40 Inverness Center Parkway
Birmingham, AL 35242

Agency Concurrence:

WSRC Emergency Management is aware of the SNC ESP proposed revision to the existing VEGP Emergency Plan to include provisions for the addition of two new reactors at the VEGP site. WSRC Emergency Management concurs that the proposed EP is practicable, and commits to continuing participation in any further development of the plans, including any required field demonstrations.

Richard G. Davis

~~Debra~~ Foutch RICHARD G. DAVIS
WSRC Emergency Management

cc: Document Services RTYPE: AR01
D. P. Burford
J. T. Davis
W. H. Lee
AR File No.: AR.01.01.05

Charles -

I had my manager sign since he is the Manager for Emergency Management and has the authority to make this commitment.

Deb Fowler

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13.6 Industrial Security

The footprint area for the two new Westinghouse AP1000 units is west of, and adjacent to, the existing units on the VEGP site. There will be a protected area encompassing the new units. Like the existing units, physical protection of the new units will be based on controlling access to the VEGP site and the new units (VEGP Units 3 and 4), screening operating personnel, monitoring security equipment, designing and arranging station features, and obtaining assistance from local law enforcement personnel. Once construction reaches conclusion on the first new unit, a Vehicle Barrier System will be implemented at the appropriate stand-off distance

The characteristics of the VEGP Units 3 and 4 footprint are such that implementation of the applicable requirements of 10 CFR 73.55, *Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage*, and NRC Regulatory Guide 4.7, *General Site Suitability Criteria for Nuclear Power Stations*, as well as the post-9/11 NRC Orders, can be met. The VEGP site is sufficiently large to provide adequate distances between structures and the probable location of the security boundaries.

The VEGP site is bordered on the east by the Savannah River. For the existing units, SNC has an approved security program in place in compliance with the post-9/11 NRC Orders and in accordance with NEI 03-12, Template for Security Plan and Training and Qualification Plan. In the event that new units are added to the VEGP site, those requirements would continue to be met and would be extended to include the new units.

The final design of the VEGP Units 3 and 4 power block and supporting buildings would utilize design features as appropriate to assure that the existing security spatial distances outlined in the regulations above, as well as the Design Basis Threat requirements, are adequate. In accordance with 10 CFR 100.21(f), SNC will ensure that site characteristics are adequate to provide security plans and measures. The COL application would address the specific design features to assure site security as well as include the design of security monitoring equipment and methods to screen station operating personnel. A security assessment will be conducted as part of the COL application and will address all aspects of security for the new units.

There are no security hazards in the vicinity of the VEGP site. The VEGP site is located in Burke County in the State of Georgia. Written letters of agreement with the Burke County Sheriff and the Georgia State Patrol are currently in place to establish for law enforcement response in the event of a VEGP security (or radiological) emergency **(Burke County Sheriff 2004; Georgia State Patrol 2004)**. Burke County has mutual aid agreements with surrounding counties in place, if necessary, to provide support during VEGP emergencies.

Section 13.6 References:

(Burke County Sheriff 2004) Burke County Sheriff's Office letter of agreement for law enforcement support for VEGP security and radiological emergencies, dated April 15, 2004.

(Georgia State Patrol 2004) Georgia State Patrol letter of agreement for law enforcement support for VEGP security and radiological emergencies, dated April 22, 2004.

Chapter 15 Accident Analyses

This chapter presents the required 10 CFR 52.17(a)(1), "Contents of Applications," early site permit (ESP) application analysis and evaluation of the major structures, systems, and components of the facility that bear significantly on the acceptability of the site with respect to the radiological consequence evaluation factors identified in 10 CFR 50.34(a)(1).

15.1 Selection of Accidents

The *AP1000 Design Control Document (DCD)* design bases accidents are considered in this chapter **(Westinghouse 2005)**. Table 15-1 shows the NUREG-0800 Standard Review Plan (SRP) section numbers and accident descriptions, as well as the corresponding accidents as defined in the AP1000 DCD. Although only those accidents identified in Regulatory Guide 1.183, *Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors*, July 2000 (RG 1.183), are required to be evaluated, the radiological consequences of all the accidents listed in Table 15-1 are assessed to demonstrate that new units could be sited at the VEGP site without undue risk to the health and safety of the public.

15.2 Evaluation Methodology

The AP1000 DCD presents the radiological consequences for the accidents identified in Table 15-1. The DCD design basis analyses are updated with VEGP site data to demonstrate that the DCD analyses are bounding for the VEGP site. The basic scenario for each accident is that some quantity of activity is released at the accident location inside a building and this activity is eventually released to the environment. The transport of activity within the plant is independent of the site and specific to the AP1000 design. Details about the methodologies and assumptions pertaining to each of the accidents, such as activity release pathways and credited mitigation features, are provided in the DCD.

The dose to an individual located at the exclusion area boundary (EAB) or the low population zone (LPZ) is calculated based on the amount of activity released to the environment, the atmospheric dispersion of the activity during the transport from the release point to the offsite location, the breathing rate of the individual at the offsite location, and activity-to-dose conversion factors. The only site-specific parameter is atmospheric dispersion. Site-specific doses are obtained by adjusting the DCD doses to reflect site-specific atmospheric dispersion factors (χ/Q values). Since the site-specific χ/Q values are bounded by the DCD χ/Q values, this approach demonstrates that the site-specific doses are within those calculated in the DCD.

Short-term accident χ/Q values are calculated using the methodology of Regulatory Guide 1.145, *Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants*, Revision 1 (RG 1.145) with site-specific meteorological data. As indicated in Section 2.3.4, the RG 1.145 methodology is implemented in the NRC-sponsored PAVAN computer program. This program computes χ/Q values at the EAB and the LPZ for each combination of wind speed and atmospheric stability for each of 16 downwind direction sectors and then calculates overall (non direction-specific) χ/Q values. For a given location, either the EAB or the LPZ, the 0 – 2 hour χ/Q value is the top 5th percentile overall value calculated by PAVAN, meaning that conditions would be more favorable for dispersion 95% of the time. For the LPZ, the χ/Q values for all subsequent times are calculated by logarithmic interpolation between the top 5th percentile χ/Q value and the annual average χ/Q value. Releases are assumed to be at ground level, and the shortest distances between the power block and the offsite locations are selected to conservatively maximize the χ/Q values.

The accident doses are expressed as total effective dose equivalent (TEDE), consistent with 10 CFR 50.34. The TEDE consists of the sum of the committed effective dose equivalent (CEDE) from inhalation and the effective dose equivalent (EDE) from external exposure. The CEDE is determined using the dose conversion factors in Federal Guidance Report 11 **(EPA 1988)**, while the EDE is based on the dose conversion factors in Federal Guidance Report 12 **(EPA 1993)**. Appendix 15A of the AP1000 DCD provides information on the methodologies used to calculate CEDE and EDE values. As indicated in RG 1.183, the dose conversion factors in Federal Guidance Reports 11 and 12 are acceptable to the NRC staff.

15.3 Source Terms

The design basis accident source terms in the AP1000 DCD are calculated in accordance with RG 1.183, based on 102 percent of rated core thermal power of 3400 MW. The time-dependent isotopic activities released to the environment from each of the evaluated accidents are presented in Tables 15-2 to 15-10.

15.4 Radiological Consequences

For each of the accidents identified in Table 15-1, the site-specific dose for a given time interval is calculated by multiplying the AP1000 DCD dose by the ratio of the site χ/Q value, developed in Section 2.3.4.2, to the DCD χ/Q value as indicated in *AP1000 Accident Releases and Doses as Function of Time* **(Westinghouse 2006b)**. The time-dependent DCD χ/Q values and the time-dependent site χ/Q values and their ratios are shown in Table 15-11. As all site χ/Q values are bounded by DCD χ/Q values, site-specific doses for all accidents are also bounded by DCD doses. The total doses are summarized in Table 15-12, based on the individual accident doses

presented in Tables 15-13 to 15-22. For each accident, the EAB dose shown is for the two-hour period that yields the maximum dose, in accordance with RG 1.183.

The results of the VEGP site analysis contained in the referenced tables demonstrate that all accident doses meet the site acceptance criteria of 10 CFR 50.34. The acceptance criteria in 10 CFR 50.34 apply to accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation. For events with a higher probability of occurrence, more restrictive dose limits are specified in RG 1.183. Where applied, the more restrictive dose limit is either 10 or 25 percent of the 10 CFR 50.34 limit of 25 rem TEDE.

The TEDE dose limits shown in Tables 15-12 to 15-22 are from RG 1.183, Table 6, for all accidents except Reactor Coolant Pump Shaft Break (SRP Section 15.3.4) and Failure of Small Lines Carrying Primary Coolant Outside Containment (SRP Section 15.6.2). Although RG 1.183 does not address these two accidents, NUREG-0800 indicates a dose limit of 2.5 rem for these accidents. All doses are within the acceptance criteria.

Table 15-1 Selection of Accidents

SRP/DCD Section	SRP Description	DCD Description	Identified in RG 1.183	Comment
15.1.5	Steam System Piping Failures Inside and Outside of Containment (PWR)	Steam System Piping Failure	Yes	
15.2.8	Feedwater System Pipe Breaks Inside and Outside Containment	Feedwater System Pipe Break	No	In the DCD, this is bounded by Section 15.1.5 accident
15.3.3	Reactor Coolant Pump Rotor Seizure	Reactor Coolant Pump Shaft Seizure (Locked Rotor)	Yes	
15.3.4	Reactor Coolant Pump Shaft Break	Reactor Coolant Pump Shaft Break	No	In the DCD, this is bounded by Section 15.3.3 accident
15.4.8	Spectrum of Rod Ejection Accidents (PWR)	Spectrum of Rod Cluster Control Assembly Ejection Accidents	Yes	
15.6.2	Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment	Failure of Small Lines Carrying Primary Coolant Outside Containment	No	
15.6.3	Radiological Consequences of Steam Generator Tube Failure	Steam Generator Tube Rupture	Yes	
15.6.5A	Radiological Consequences of a Design Basis Loss of Coolant Accident Including Containment Leakage Contribution	Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary	Yes	Addressed in DCD Section 15.6.5
15.6.5B	Radiological Consequences of a Design Basis Loss of Coolant Accident: Leakage From Engineered Safety Feature Components Outside Containment	Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary	Yes	Addressed in DCD Section 15.6.5
15.7.4	Radiological Consequences of Fuel Handling Accidents	Fuel Handling Accident	Yes	

Table 15-2 Activity Releases for Steam System Piping Failure with Pre-Existing Iodine Spike

	Activity Release (Ci)				
Isotope	**0-2 hr**	**2-8 hr**	**8-24 hr**	**24-72 hr**	**Total**
Kr-85m	6.86E-02	1.14E-01	6.80E-02	6.18E-03	2.57E-01
Kr-85	2.82E-01	8.46E-01	2.25E+00	6.69E+00	1.01E+01
Kr-87	2.76E-02	1.34E-02	5.29E-04	8.60E-08	4.15E-02
Kr-88	1.12E-01	1.37E-01	4.04E-02	8.27E-04	2.91E-01
Xe-131m	1.28E-01	3.79E-01	9.81E-01	2.70E+00	4.19E+00
Xe-133m	1.59E-01	4.51E-01	1.04E+00	2.05E+00	3.70E+00
Xe-133	1.18E+01	3.45E+01	8.64E+01	2.16E+02	3.49E+02
Xe-135m	3.04E-03	1.33E-05	0.00E+00	0.00E+00	3.06E-03
Xe-135	3.10E-01	6.90E-01	8.35E-01	3.38E-01	2.17E+00
Xe-138	3.99E-03	1.14E-05	0.00E+00	0.00E+00	4.00E-03
I-130	3.59E-01	1.42E-01	2.09E-01	1.33E-01	8.44E-01
I-131	2.40E+01	1.21E+01	3.10E+01	8.22E+01	1.49E+02
I-132	3.05E+01	4.14E+00	8.06E-01	6.55E-03	3.55E+01
I-133	4.34E+01	1.90E+01	3.53E+01	3.98E+01	1.37E+02
I-134	6.74E+00	1.63E-01	1.43E-03	4.54E-09	6.91E+00
I-135	2.60E+01	8.16E+00	7.54E+00	1.71E+00	4.34E+01
Cs-134	1.90E+01	1.95E-01	5.19E-01	1.54E+00	2.12E+01
Cs-136	2.82E+01	2.86E-01	7.43E-01	2.06E+00	3.13E+01
Cs-137	1.37E+01	1.41E-01	3.74E-01	1.11E+00	1.53E+01
Cs-138	1.01E+01	1.02E-03	4.42E-07	0.00E+00	1.01E+01
Total	2.15E+02	8.15E+01	1.68E+02	3.56E+02	8.21E+02

Table 15-3 Activity Releases for Steam System Piping Failure with Accident-Initiated Iodine Spike

	Activity Release (Ci)				
Isotope	**0-2 hr**	**2-8 hr**	**8-24 hr**	**24-72 hr**	**Total**
Kr-85m	6.86E-02	1.14E-01	6.80E-02	6.18E-03	2.57E-01
Kr-85	2.82E-01	8.46E-01	2.25E+00	6.69E+00	1.01E+01
Kr-87	2.76E-02	1.34E-02	5.29E-04	8.60E-08	4.15E-02
Kr-88	1.12E-01	1.37E-01	4.04E-02	8.27E-04	2.91E-01
Xe-131m	1.28E-01	3.79E-01	9.81E-01	2.70E+00	4.19E+00
Xe-133m	1.59E-01	4.51E-01	1.04E+00	2.05E+00	3.70E+00
Xe-133	1.18E+01	3.45E+01	8.64E+01	2.16E+02	3.49E+02
Xe-135m	3.04E-03	1.33E-05	0.00E+00	0.00E+00	3.06E-03
Xe-135	3.10E-01	6.90E-01	8.35E-01	3.38E-01	2.17E+00
Xe-138	3.99E-03	1.14E-05	0.00E+00	0.00E+00	4.00E-03
I-130	4.20E-01	9.95E-01	1.58E+00	1.01E+00	4.01E+00
I-131	2.60E+01	5.73E+01	1.56E+02	4.13E+02	6.53E+02
I-132	4.62E+01	9.74E+01	2.24E+01	1.82E-01	1.66E+02
I-133	4.91E+01	1.14E+02	2.27E+02	2.55E+02	6.45E+02
I-134	1.34E+01	1.86E+01	2.65E-01	8.42E-07	3.23E+01
I-135	3.24E+01	7.74E+01	7.83E+01	1.77E+01	2.06E+02
Cs-134	1.90E+01	1.95E-01	5.19E-01	1.54E+00	2.12E+01
Cs-136	2.82E+01	2.86E-01	7.43E-01	2.06E+00	3.13E+01
Cs-137	1.37E+01	1.41E-01	3.74E-01	1.11E+00	1.53E+01
Cs-138	1.01E+01	1.02E-03	4.42E-07	0.00E+00	1.01E+01
Total	2.51E+02	4.03E+02	5.78E+02	9.20E+02	2.15E+03

Table 15-4 Activity Releases for Reactor Coolant Pump Shaft Seizure

	Activity Release (Ci)				
	No Feedwater	Feedwater Available			
Isotope	**0-1.5 hr**	**0-2 hr**	**2-8 hr**	**6-8 hr**	**Total**
Kr-85m	8.16E+01	1.05E+02	1.74E+02	4.13E+01	2.79E+02
Kr-85	7.58E+00	1.01E+01	3.03E+01	1.01E+01	4.04E+01
Kr-87	1.20E+02	1.43E+02	6.97E+01	5.43E+00	2.13E+02
Kr-88	2.08E+02	2.62E+02	3.20E+02	6.05E+01	5.82E+02
Xe-131m	3.77E+00	5.03E+00	1.49E+01	4.95E+00	1.99E+01
Xe-133m	2.02E+01	2.69E+01	7.64E+01	2.48E+01	1.03E+02
Xe-133	6.66E+02	8.87E+02	2.60E+03	8.57E+02	3.49E+03
Xe-135m	3.24E+01	3.28E+01	1.43E-01	2.68E-06	3.30E+01
Xe-135	1.59E+02	2.08E+02	4.64E+02	1.32E+02	6.72E+02
Xe-138	1.29E+02	1.30E+02	3.72E-01	3.01E-06	1.30E+02
I-130	8.45E-01	1.17E-01	1.33E+00	5.65E-01	1.45E+00
I-131	3.77E+01	5.39E+00	7.51E+01	3.46E+01	8.05E+01
I-132	2.79E+01	3.45E+00	1.48E+01	3.95E+00	1.83E+01
I-133	4.86E+01	6.86E+00	8.29E+01	3.64E+01	8.98E+01
I-134	2.88E+01	2.76E+00	2.98E+00	2.09E-01	5.74E+00
I-135	4.19E+01	5.68E+00	5.22E+01	2.05E+01	5.79E+01
Cs-134	1.29E+00	1.82E-01	2.40E+00	1.11E+00	2.59E+00
Cs-136	5.63E-01	8.45E-02	7.79E-01	3.47E-01	8.63E-01
Cs-137	7.74E-01	1.10E-01	1.41E+00	6.51E-01	1.52E+00
Cs-138	6.08E+00	7.29E-01	3.35E+00	1.13E+00	4.08E+00
Rb-86	1.33E-02	1.83E-03	2.73E-02	1.27E-02	2.91E-02
Total	1.62E+03	1.84E+03	3.99E+03	1.23E+03	5.82E+03

Note: The release period of 6-8 hr yields the maximum 2-hr EAB dose with feedwater available.

Table 15-5 Activity Releases for Spectrum of Rod Cluster Control Assembly Ejection Accidents

	Activity Release (Ci)					
Isotope	**0-2 hr**	**2-8 hr**	**8-24 hr**	**24-96 hr**	**96-720 hr**	**Total**
Kr-85m	1.12E+02	6.48E+01	3.87E+01	1.77E+00	2.51E-05	2.18E+02
Kr-85	5.01E+00	5.60E+00	1.49E+01	3.35E+01	2.88E+02	3.47E+02
Kr-87	1.82E+02	2.60E+01	1.03E+00	8.37E-05	0.00E+00	2.09E+02
Kr-88	2.91E+02	1.18E+02	3.49E+01	3.59E-01	8.41E-09	4.45E+02
Xe-131m	4.94E+00	5.46E+00	1.42E+01	2.86E+01	1.16E+02	1.69E+02
Xe-133m	2.67E+01	2.81E+01	6.49E+01	8.45E+01	5.31E+01	2.57E+02
Xe-133	8.79E+02	9.58E+02	2.40E+03	4.27E+03	8.45E+03	1.70E+04
Xe-135m	7.34E+01	5.30E-02	4.33E-09	0.00E+00	0.00E+00	7.35E+01
Xe-135	2.15E+02	1.72E+02	2.09E+02	4.35E+01	1.79E-01	6.39E+02
Xe-138	2.99E+02	1.38E-01	3.19E-09	0.00E+00	0.00E+00	2.99E+02
I-130	4.90E+00	7.28E+00	4.32E+00	2.03E-01	2.95E-04	1.67E+01
I-131	1.36E+02	2.45E+02	2.31E+02	3.10E+01	1.68E+01	6.60E+02
I-132	1.53E+02	9.94E+01	9.85E+00	8.24E-03	0.00E+00	2.62E+02
I-133	2.72E+02	4.40E+02	3.18E+02	2.28E+01	2.41E-01	1.05E+03
I-134	1.66E+02	2.85E+01	1.37E-01	4.48E-08	0.00E+00	1.95E+02
I-135	2.39E+02	2.97E+02	1.19E+02	2.39E+00	7.32E-05	6.57E+02
Cs-134	3.08E+01	6.22E+01	6.03E+01	7.76E+00	5.16E+00	1.66E+02
Cs-136	8.79E+00	1.75E+01	1.67E+01	2.05E+00	6.58E-01	4.57E+01
Cs-137	1.79E+01	3.62E+01	3.51E+01	4.52E+00	3.05E+00	9.68E+01
Cs-138	1.09E+02	7.05E+00	1.68E-03	0.00E+00	0.00E+00	1.16E+02
Rb-86	3.62E-01	7.27E-01	6.96E-01	8.67E-02	3.42E-02	1.91E+00
Total	3.23E+03	2.62E+03	3.58E+03	4.53E+03	8.93E+03	2.29E+04

Table 15-6 Activity Releases for Failure of Small Lines Carrying Primary Coolant Outside Containment

	Activity Release (Ci)
Isotope	**0-2 hr**
Kr-85m	1.24E+01
Kr-85	4.40E+01
Kr-87	7.05E+00
Kr-88	2.21E+01
Xe-131m	1.99E+01
Xe-133m	2.50E+01
Xe-133	1.84E+03
Xe-135m	2.59E+00
Xe-135	5.20E+01
Xe-138	3.65E+00
I-130	1.89E+00
I-131	9.26E+01
I-132	3.49E+02
I-133	2.01E+02
I-134	1.58E+02
I-135	1.68E+02
Cs-134	4.16E+00
Cs-136	6.16E+00
Cs-137	3.00E+00
Cs-138	2.21E+00
Total	3.02E+03

Table 15-7 Activity Releases for Steam Generator Tube Rupture with Pre-Existing Iodine Spike

	Activity Release (Ci)			
Isotope	**0-2 hr**	**2-8 hr**	**8-24 hr**	**Total**
Kr-85m	5.53E+01	1.93E+01	7.53E-03	7.46E+01
Kr-85	2.20E+02	1.09E+02	1.34E-01	3.29E+02
Kr-87	2.39E+01	3.61E+00	9.12E-05	2.75E+01
Kr-88	9.22E+01	2.65E+01	5.43E-03	1.19E+02
Xe-131m	9.96E+01	4.88E+01	5.91E-02	1.48E+02
Xe-133m	1.24E+02	5.91E+01	6.61E-02	1.83E+02
Xe-133	9.19E+03	4.47E+03	5.29E+00	1.37E+04
Xe-135m	3.44E+00	5.86E-03	0.00E+00	3.45E+00
Xe-135	2.46E+02	1.02E+02	7.10E-02	3.47E+02
Xe-138	4.56E+00	5.07E-03	0.00E+00	4.57E+00
I-130	1.79E+00	5.39E-02	2.68E-01	2.12E+00
I-131	1.21E+02	5.27E+00	3.06E+01	1.56E+02
I-132	1.42E+02	7.43E-01	1.92E+00	1.44E+02
I-133	2.16E+02	7.63E+00	4.06E+01	2.64E+02
I-134	2.74E+01	4.40E-03	4.23E-03	2.74E+01
I-135	1.27E+02	2.70E+00	1.17E+01	1.42E+02
Cs-134	1.63E+00	6.05E-02	2.16E-01	1.90E+00
Cs-136	2.42E+00	8.86E-02	3.14E-01	2.82E+00
Cs-137	1.17E+00	4.37E-02	1.56E-01	1.37E+00
Cs-138	5.64E-01	2.91E-06	5.73E-07	5.64E-01
Total	1.07E+04	4.85E+03	9.14E+01	1.56E+04

Table 15-8 Activity Releases for Steam Generator Tube Rupture with Accident-Initiated Iodine Spike

	Activity Release (Ci)			
Isotope	**0-2 hr**	**2-8 hr**	**8-24 hr**	**Total**
Kr-85m	5.53E+01	1.93E+01	7.53E-03	7.46E+01
Kr-85	2.20E+02	1.09E+02	1.34E-01	3.29E+02
Kr-87	2.39E+01	3.61E+00	9.12E-05	2.75E+01
Kr-88	9.22E+01	2.65E+01	5.43E-03	1.19E+02
Xe-131m	9.96E+01	4.88E+01	5.91E-02	1.48E+02
Xe-133m	1.24E+02	5.91E+01	6.61E-02	1.83E+02
Xe-133	9.19E+03	4.47E+03	5.29E+00	1.37E+04
Xe-135m	3.44E+00	5.86E-03	0.00E+00	3.45E+00
Xe-135	2.46E+02	1.02E+02	7.10E-02	3.47E+02
Xe-138	4.56E+00	5.07E-03	0.00E+00	4.57E+00
I-130	8.87E-01	1.62E-01	8.24E-01	1.87E+00
I-131	4.36E+01	1.14E+01	6.76E+01	1.23E+02
I-132	1.47E+02	4.86E+00	1.29E+01	1.65E+02
I-133	9.33E+01	2.00E+01	1.08E+02	2.22E+02
I-134	5.59E+01	6.04E-02	5.94E-02	5.60E+01
I-135	7.61E+01	9.88E+00	4.38E+01	1.30E+02
Cs-134	1.63E+00	6.05E-02	2.16E-01	1.90E+00
Cs-136	2.42E+00	8.86E-02	3.14E-01	2.82E+00
Cs-137	1.17E+00	4.37E-02	1.56E-01	1.37E+00
Cs-138	5.64E-01	2.91E-06	5.73E-07	5.64E-01
Total	1.05E+04	4.88E+03	2.40E+02	1.56E+04

Table 15-9 Activity Releases for Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary

	Activity Release (Ci)					
Isotope	**1.4-3.4 hr**	**0-8 hr**	**8-24 hr**	**24-96 hr**	**96-720 hr**	**Total**
I-130	5.64E+01	1.12E+02	5.37E+00	7.10E-01	1.27E-02	1.18E+02
I-131	1.68E+03	3.49E+03	2.66E+02	2.39E+02	7.19E+02	4.71E+03
I-132	1.23E+03	2.14E+03	1.64E+01	1.46E-02	0.00E+00	2.15E+03
I-133	3.23E+03	6.54E+03	3.83E+02	1.04E+02	1.04E+01	7.04E+03
I-134	6.60E+02	1.14E+03	2.96E-01	6.79E-08	0.00E+00	1.14E+03
I-135	2.56E+03	4.89E+03	1.58E+02	6.09E+00	3.16E-03	5.06E+03
Kr-85m	1.42E+03	3.77E+03	1.87E+03	8.56E+01	1.22E-03	5.73E+03
Kr-85	8.31E+01	2.97E+02	7.06E+02	1.59E+03	1.36E+04	1.62E+04
Kr-87	1.10E+03	1.95E+03	4.97E+01	4.05E-03	0.00E+00	1.99E+03
Kr-88	3.11E+03	7.26E+03	1.70E+03	1.75E+01	4.09E-07	8.97E+03
Xe-131m	8.26E+01	2.94E+02	6.79E+02	1.37E+03	5.57E+03	7.91E+03
Xe-133m	4.43E+02	1.54E+03	3.15E+03	4.11E+03	2.58E+03	1.14E+04
Xe-133	1.47E+04	5.19E+04	1.16E+05	2.06E+05	4.07E+05	7.80E+05
Xe-135m	1.06E+01	3.59E+01	2.14E-07	0.00E+00	0.00E+00	3.59E+01
Xe-135	3.15E+03	9.64E+03	1.01E+04	2.11E+03	8.68E+00	2.19E+04
Xe-138	3.11E+01	1.20E+02	1.58E-07	0.00E+00	0.00E+00	1.20E+02
Rb-86	3.04E+00	6.32E+00	2.99E-01	9.83E-02	5.13E-01	7.23E+00
Cs-134	2.58E+02	5.38E+02	2.57E+01	9.11E+00	7.74E+01	6.50E+02
Cs-136	7.33E+01	1.52E+02	7.16E+00	2.28E+00	9.88E+00	1.72E+02
Cs-137	1.51E+02	3.13E+02	1.50E+01	5.32E+00	4.57E+01	3.79E+02
Cs-138	1.50E+02	3.30E+02	2.18E-03	0.00E+00	0.00E+00	3.30E+02
Sb-127	2.42E+01	4.80E+01	2.29E+00	5.67E-01	7.82E-01	5.16E+01
Sb-129	5.10E+01	8.94E+01	1.51E+00	4.95E-03	4.90E-08	9.09E+01
Te-127m	3.15E+00	6.30E+00	3.16E-01	1.11E-01	8.71E-01	7.60E+00
Te-127	2.05E+01	3.83E+01	1.15E+00	2.75E-02	1.33E-04	3.94E+01
Te-129m	1.07E+01	2.15E+01	1.07E+00	3.65E-01	2.36E+00	2.52E+01

Table 15-9 (cont.) Activity Releases for Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary

	Activity Release (Ci)					
Isotope	**1.4-3.4 hr**	**0-8 hr**	**8-24 hr**	**24-96 hr**	**96-720 hr**	**Total**
Te-129	1.88E+01	2.83E+01	2.69E-02	3.54E-08	0.00E+00	2.84E+01
Te-131m	3.17E+01	6.20E+01	2.64E+00	3.35E-01	7.81E-02	6.50E+01
Te-132	3.23E+02	6.40E+02	3.02E+01	7.04E+00	7.83E+00	6.85E+02
Sr-89	9.23E+01	1.85E+02	9.24E+00	3.19E+00	2.26E+01	2.20E+02
Sr-90	7.95E+00	1.59E+01	7.99E-01	2.84E-01	2.44E+00	1.94E+01
Sr-91	9.68E+01	1.81E+02	5.46E+00	1.35E-01	7.06E-04	1.87E+02
Sr-92	6.83E+01	1.13E+02	1.01E+00	5.15E-04	0.00E+00	1.14E+02
Ba-139	5.44E+01	8.30E+01	1.49E-01	9.91E-07	0.00E+00	8.32E+01
Ba-140	1.63E+02	3.25E+02	1.61E+01	5.11E+00	2.17E+01	3.68E+02
Mo-99	2.15E+01	4.25E+01	1.98E+00	4.29E-01	3.78E-01	4.53E+01
Tc-99m	1.47E+01	2.66E+01	6.05E-01	5.27E-03	1.33E-06	2.72E+01
Ru-103	1.73E+01	3.46E+01	1.73E+00	5.93E-01	3.99E+00	4.09E+01
Ru-105	8.18E+00	1.44E+01	2.48E-01	8.86E-04	1.17E-08	1.46E+01
Ru-106	5.70E+00	1.14E+01	5.73E-01	2.03E-01	1.70E+00	1.39E+01
Rh-105	1.03E+01	2.02E+01	8.81E-01	1.29E-01	4.14E-02	2.12E+01
Ce-141	3.89E+00	7.78E+00	3.88E-01	1.32E-01	8.45E-01	9.15E+00
Ce-143	3.46E+00	6.78E+00	2.93E-01	4.05E-02	1.14E-02	7.13E+00
Ce-144	2.94E+00	5.89E+00	2.96E-01	1.05E-01	8.68E-01	7.15E+00
Pu-238	9.16E-03	1.83E-02	9.21E-04	3.27E-04	2.82E-03	2.24E-02
Pu-239	8.06E-04	1.61E-03	8.10E-05	2.88E-05	2.48E-04	1.97E-03
Pu-240	1.18E-03	2.37E-03	1.19E-04	4.22E-05	3.63E-04	2.89E-03
Pu-241	2.66E-01	5.31E-01	2.67E-02	9.48E-03	8.14E-02	6.49E-01
Np-239	4.48E+01	8.87E+01	4.08E+00	8.15E-01	5.70E-01	9.41E+01
Y-90	8.08E-02	1.60E-01	7.44E-03	1.59E-03	1.35E-03	1.70E-01
Y-91	1.19E+00	2.37E+00	1.19E-01	4.12E-02	3.00E-01	2.83E+00
Y-92	7.89E-01	1.35E+00	1.80E-02	2.86E-05	0.00E+00	1.37E+00

Table 15-9 (cont.) Activity Releases for Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary

	Activity Release (Ci)					
Isotope	**1.4-3.4 hr**	**0-8 hr**	**8-24 hr**	**24-96 hr**	**96-720 hr**	**Total**
Y-93	1.21E+00	2.28E+00	7.08E-02	1.98E-03	1.42E-05	2.35E+00
Nb-95	1.60E+00	3.19E+00	1.59E-01	5.44E-02	3.55E-01	3.76E+00
Zr-95	1.59E+00	3.18E+00	1.59E-01	5.52E-02	4.08E-01	3.80E+00
Zr-97	1.43E+00	2.74E+00	1.03E-01	6.73E-03	3.71E-04	2.85E+00
La-140	1.67E+00	3.29E+00	1.46E-01	2.36E-02	9.62E-03	3.47E+00
La-141	1.03E+00	1.79E+00	2.71E-02	6.41E-05	2.01E-10	1.81E+00
La-142	5.38E-01	8.31E-01	2.09E-03	3.39E-08	0.00E+00	8.33E-01
Nd-147	6.16E-01	1.23E+00	6.06E-02	1.90E-02	7.29E-02	1.38E+00
Pr-143	1.39E+00	2.78E+00	1.37E-01	4.40E-02	1.94E-01	3.15E+00
Am-241	1.20E-04	2.39E-04	1.20E-05	4.27E-06	3.68E-05	2.92E-04
Cm-242	2.82E-02	5.65E-02	2.83E-03	9.98E-04	8.08E-03	6.84E-02
Cm-244	3.46E-03	6.93E-03	3.48E-04	1.24E-04	1.06E-03	8.47E-03
Total	3.53E+04	9.85E+04	1.35E+05	2.15E+05	4.30E+05	8.79E+05

Table 15-10 Activity Releases for Fuel Handling Accident

	Activity Release (Ci)
Isotope	**0-2 hr**
Kr-85m	3.42E+02
Kr-85	1.11E+03
Kr-87	6.00E-02
Kr-88	1.07E+02
Xe-131m	5.54E+02
Xe-133m	2.80E+03
Xe-133	9.66E+04
Xe-135m	1.26E+03
Xe-135	2.49E+04
I-130	2.51E+00
I-131	3.76E+02
I-132	3.01E+02
I-133	2.40E+02
I-135	3.94E+01
Total	1.29E+05

Table 15-11 Atmospheric Dispersion Factors

Accident	Location	Time (hr)	DCD χ/Q (sec/m^3)	Site χ/Q (sec/m^3)	χ/Q Ratio (Site/DCD)
LOCA	**EAB**	0 – 2	5.10E-04	3.11E-04	0.610
	LPZ	0 – 8	2.20E-04	6.25E-05	0.284
		8 – 24	1.60E-04	4.70E-05	0.294
		24 – 96	1.00E-04	2.53E-05	0.253
		96 – 720	8.00E-05	1.04E-05	0.130
Other Accidents	**EAB**	0 – 2	8.00E-04	3.11E-04	0.389
	LPZ	0 – 8	5.00E-04	6.25E-05	0.125
		8 – 24	3.00E-04	4.70E-05	0.157
		24 – 96	1.50E-04	2.53E-05	0.169
		96 – 720	8.00E-05	1.04E-05	0.130

Note: The DCD χ/Q values for LOCA are consistent with AP1000 DCD Table 15A-5. Although not indicated as such in the DCD, a different set of χ/Q values was used by Westinghouse to calculate doses for accidents other than LOCA **(Westinghouse 2006b)**. It is seen that the site χ/Q values are bounded by the DCD χ/Q values for all time steps.

Table 15-12 Summary of Design Basis Accident Doses

DCD/SRP Section	Accident	Site Dose (rem TEDE) EAB	LPZ	Limit	Dose Table
15.1.5	**Steam System Piping Failure**				
	Pre-Existing Iodine Spike	0.31	0.10	25	15-13
	Accident-Initiated Iodine Spike	0.35	0.28	2.5	15-14
15.2.8	**Feedwater System Pike Break**	[a]	[a]		
15.3.3	**Reactor Coolant Pump Shaft Seizure**				
	No Feedwater	0.27	0.05	2.5	15-15
	Feedwater Available	0.19	0.10	2.5	15-16
15.3.4	**Reactor Coolant Pump Shaft Break**	[b]	[b]		
15.4.8	**Spectrum of Rod Cluster Control Assembly Ejection Accidents**	1.1	0.71	6.3	15-17
15.6.2	**Failure of Small Lines Carrying Primary Coolant Outside Containment**	0.66	0.13	2.5	15-18
15.6.3	**Steam Generator Tube Rupture**				
	Pre-Existing Iodine Spike	0.70	0.16	25	15-19
	Accident-Initiated Iodine Spike	0.35	0.10	2.5	15-20
15.6.5	**Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary**	15	6.6	25	15-21
15.7.4	**Fuel Handling Accident**	2.2	0.43	6.3	15-22

[a]Feedwater System Pipe Break is bounded by Steam System Piping Failure, as indicated in the AP1000 DCD.

[b]Reactor Coolant Pump Shaft Break is bounded by Reactor Coolant Pump Shaft Seizure, as indicated in the AP1000 DCD.

Table 15-13 Doses for Steam System Piping Failure with Pre-Existing Iodine Spike

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	8.0E-01		3.89E-01	3.11E-01	
0-8 hr		5.81E-01	1.25E-01		7.26E-02
8-24 hr		7.18E-02	1.57E-01		1.12E-02
24-96 hr		1.08E-01	1.69E-01		1.82E-02
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	8.0E-01	7.61E-01		3.11E-01	1.02E-01
Limit				25	25

Table 15-14 Doses for Steam System Piping Failure with Accident-Initiated Iodine Spike

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	9.00E-01		3.89E-01	3.50E-01	
0-8 hr		1.02E+00	1.25E-01		1.28E-01
8-24 hr		3.77E-01	1.57E-01		5.91E-02
24-96 hr		5.36E-01	1.69E-01		9.04E-02
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	9.00E-01	1.94E+00		3.50E-01	2.77E-01
Limit				2.5	2.5

Table 15-15 Doses for Reactor Coolant Pump Shaft Seizure with No Feedwater

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	7.00E-01		3.89E-01	2.72E-01	
0-8 hr		3.89E-01	1.25E-01		4.86E-02
8-24 hr		0.00E+00	1.57E-01		0.00E+00
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	7.00E-01	3.89E-01		2.72E-01	4.86E-02
Limit				2.5	2.5

Table 15-16 Doses for Reactor Coolant Pump Shaft Seizure with Feedwater Available

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
6-8 hr	5.00E-01		3.89E-01	1.94E-01	
0-8 hr		7.94E-01	1.25E-01		9.93E-02
8-24 hr		0.00E+00	1.57E-01		0.00E+00
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	5.00E-01	7.94E-01		1.94E-01	9.93E-02
Limit				2.5	2.5

Table 15-17 Doses for Spectrum of Rod Cluster Control Assembly Ejection Accidents

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	2.90E+00		3.89E-01	1.13E+00	
0-8 hr		4.58E+00	1.25E-01		5.73E-01
8-24 hr		7.84E-01	1.57E-01		1.23E-01
24-96 hr		6.32E-02	1.69E-01		1.07E-02
96-720 hr		2.06E-02	1.30E-01		2.68E-03
Total	2.90E+00	5.45E+00		1.13E+00	7.09E-01
Limit				6.3	6.3

Table 15-18 Doses for Failure of Small Lines Carrying Primary Coolant Outside Containment

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	1.70E+00		3.89E-01	6.61E-01	
0-8 hr		1.02E+00	1.25E-01		1.28E-01
8-24 hr		0.00E+00	1.57E-01		0.00E+00
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	1.70E+00	1.02E+00		6.61E-01	1.28E-01
Limit				2.5	2.5

Table 15-19 Doses for Steam Generator Tube Rupture with Pre-Existing Iodine Spike

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	1.80E+00		3.89E-01	7.00E-01	
0-8 hr		1.16E+00	1.25E-01		1.45E-01
8-24 hr		7.24E-02	1.57E-01		1.13E-02
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	1.80E+00	1.23E+00		7.00E-01	1.57E-01
Limit				25	25

Table 15-20 Doses for Steam Generator Tube Rupture with Accident-Initiated Iodine Spike

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	9.00E-01		3.89E-01	3.50E-01	
0-8 hr		6.27E-01	1.25E-01		7.84E-02
8-24 hr		1.69E-01	1.57E-01		2.65E-02
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	9.00E-01	7.96E-01		3.50E-01	1.05E-01
Limit				2.5	2.5

Table 15-21 Doses for Loss-of-Coolant Accident Resulting from a Spectrum of Postulated Piping Breaks Within the Reactor Coolant Pressure Boundary

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
1.4-3.4 hr	2.43E+01		6.10E-01	1.48E+01	
0-8 hr		2.17E+01	2.84E-01		6.16E+00
8-24 hr		7.69E-01	2.94E-01		2.26E-01
24-96 hr		3.71E-01	2.53E-01		9.39E-02
96-720 hr		8.70E-01	1.30E-01		1.13E-01
Total	2.43E+01	2.37E+01		1.48E+01	6.60E+00
Limit				25	25

Table 15-22 Doses for Fuel Handling Accident

	DCD Dose (rem TEDE)		χ/Q Ratio	Site Dose (rem TEDE)	
Time	**EAB**	**LPZ**	**(Site/DCD)**	**EAB**	**LPZ**
0-2 hr	5.60E+00		3.89E-01	2.18E+00	
0-8 hr		3.44E+00	1.25E-01		4.30E-01
8-24 hr		0.00E+00	1.57E-01		0.00E+00
24-96 hr		0.00E+00	1.69E-01		0.00E+00
96-720 hr		0.00E+00	1.30E-01		0.00E+00
Total	5.60E+00	3.44E+00		2.18E+00	4.30E-01
Limit				6.3	6.3

Chapter 15 References

(EPA 1988) Federal Guidance Report 11, *Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion,* US Environmental Protection Agency, EPA-520/1-88-020, 1988.

(EPA 1993) Federal Guidance Report 12, *External Exposure to Radionuclides in Air, Water, and Soil,* US Environmental Protection Agency, EPA-402-R-93-081, 1993.

(Westinghouse 2005) AP1000 Document APP-GW-GL-700, *AP1000 Design Control Document,* Revision 15, Westinghouse Electric Company, 2005.

(Westinghouse 2006b) Westinghouse Document No. LTR-CRA-06-21, *AP1000 Accident Releases and Doses as Function of Time,* Westinghouse Electric Company, February 1, 2006.

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Chapter 17 Quality Assurance

17.1 ESP Quality Assurance

The Quality Assurance Program, used for development of the Vogtle Electric Generating Plant Early Site Permit (ESP) application, is described in the Southern Nuclear Operating Company, Inc. (SNC) Nuclear Development Quality Assurance Manual. This manual, and associated implementing procedures, provide for control of SNC activities that have the potential to affect the quality of safety related nuclear plant structures, systems, and components of the proposed new units. The SNC Nuclear Development Quality Assurance Manual, included as Appendix 17.1A, is a separately controlled document and therefore, does not conform to the ESP application formatting.

Appendix

17.1A Nuclear Development Quality Assurance Manual

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SOUTHERN COMPANY

Energy to Serve Your World®

Quality Assurance Manual

Title: Nuclear Development Quality Assurance Manual

Process/Program Owner: **Quality Assurance Manager**

	Version Number	Effective Date
	3.0	**August 3, 2006**

Revision Summary

Version 3.0:
Revised to appropriately reflect responsibilities and titles and ensure alignment with the submitted SNC QA Topical Report.

Reviewed By/Date:	Approved By/Date:
Original signed by W. D. Drinkard / 07/27/06 SNC QA Manager	Original signed by J. A. Miller / 08/02/06 Senior Vice President Nuclear Development

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SOUTHERN NUCLEAR OPERATING COMPANY, INC

POLICY STATEMENT

Southern Nuclear Operating Company, Inc. (SNC) shall design, procure and construct nuclear plants in a manner that will ensure the health and safety of the public and workers. These activities shall be performed in compliance with the requirements of the Code of Federal Regulations (CFR), the applicable Nuclear Regulatory Commission (NRC) Facility Operating Licenses, and applicable laws and regulations of the state and local governments.

The SNC Nuclear Development Quality Assurance Program (NDQAP) described in the SNC Nuclear Development Quality Assurance Manual (NDQAM) and associated implementing documents provides for control of SNC activities that affect the quality of safety related nuclear plant structures, systems, and components and includes all planned and systematic activities necessary to provide adequate confidence that such structures, systems, and components will perform satisfactorily in service. The NDQAP may also be applied to certain equipment and activities that are not safety related, but support safe plant operations, or where other NRC guidance establishes program requirements.

The NDQAM is the top-level policy document that establishes the manner in which quality is to be achieved and presents SNC's overall philosophy regarding achievement and assurance of quality. Implementing documents assign more detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the NDQAM. Compliance with the NDQAM and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the SNC NDQAP.

Signed Original signed by J. B. Beasley, Jr.
J. Barnie Beasley
President and Chief Executive Officer
Southern Nuclear Operating Company, Inc.

July 2006

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PART I INTRODUCTION

SECTION 1 GENERAL

This Southern Nuclear Operating Company, Inc. (SNC) Nuclear Development Quality Assurance Manual (NDQAM) is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for plants designed and constructed by SNC. The NDQAM describes the methods and establishes quality assurance program and administrative control requirements that meet 10CFR50, Appendix B. The NDQAM is based on the requirements of ASME NQA–1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I and II, except as specified in this NDQAM.

The Nuclear Development Quality Assurance Program (NDQAP) is defined by the NRC approved regulatory document that describes the quality assurance program elements (the NDQAM), along with the associated corporate, site, and supplier implementing documents. Certain common program elements, procedures and organizations described in the NDQAM exist for currently operating SNC nuclear plants. Procedures and instructions that control Nuclear Development activities that are not addressed by existing SNC procedures and instructions will be developed prior to commencement of those activities. Corporate Policies and Guidelines establish high level responsibilities and authority for carrying out important administrative functions which are outside the scope of the NDQAP. Nuclear fleet wide procedures establish practices for certain activities which are common to all SNC organizations performing those activities such that the activity is controlled and carried out in a manner that meets NDQAP requirements. Site or organization specific procedures establish detailed implementation requirements and methods, and may be used to implement Corporate Policies and Guidelines and nuclear fleet wide procedures or be unique to particular functions or work activities.

1.1 Scope / Applicability

This NDQAM applies to activities affecting the quality and performance of safety-related structures, systems, and components, including, but not limited to:

Designing	Receiving	Testing
Constructing	Storing	Licensing
Procuring	Erecting	Startup
Fabricating	Installing	ESP Development
Cleaning	Repairing	COL Development
Handling	Training	
Shipping	Inspecting	

This manual is initiated for the development of ESP applications and may be revised as the Nuclear Development organization and related activities evolve. The NDQAM applies to these activities until turnover to SNC Operations. It does not apply to SNC's operating units at Plants Farley, Hatch and Vogtle.

Safety related systems, structures, and components, under the control of the NDQAM, are identified by design documents. The technical aspects of these items are considered when determining program applicability, including, as appropriate, the item's design safety function.

The NDQAP may be applied to certain activities where regulations other than 10CFR50 establish QA program requirements for activities within their scope.

The policy of SNC is to assure a high degree of availability and reliability of its nuclear plants while ensuring the health and safety of its workers and the public. To this end, selected elements of the Quality Assurance Program are also applied to certain equipment and activities that are not safety related or important to safety, but support safe, economic, and reliable plant operations, or where other NRC guidance establishes program requirements. These include, but may not be limited to security and fire protection. Implementing documents establish program element applicability.

1.2 Responsibilities

SNC personnel engaged in activities described in this NDQAM shall comply with the requirements of the Nuclear Development Quality Assurance Program. Contractors, suppliers or other organizations supporting SNC, are required to comply with the NDQAP established by this NDQAM, or with their own programs determined by SNC to include sufficient controls to meet the applicable requirements of 10CFR50, Appendix B. All facilities shall be designed and constructed in compliance with the applicable Code of Federal Regulations and the applicable laws and regulations of the state and local governments in which the facility is located.

Quality assurance personnel have the authority to stop work actions when they perceive that work is not progressing in a manner that meets the quality assurance program.

1.3 Interfaces with Owners

Agreements exist between Southern Nuclear Operating Company, Inc. and the nuclear power plant owner organizations to establish responsibilities and authorities for the design and construction of said facilities.

1.4 NQA-1-1994 Commitment

- In establishing, implementing, and maintaining the NDQAM, SNC commits as described in this NDQAM to compliance with ASME NQA-1-1994. NDQAM revisions are reviewed by the SNC QA Manager and approved by the SNC Senior Vice President Nuclear Development. Changes to this NDQAM will be governed by and made in accordance with Part II, Section 2.5.

PART II QUALITY ASSURANCE PROGRAM DETAILS

SECTION 1 ORGANIZATION

This Section describes the SNC organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying NDQAP implementation. The organizational structure includes corporate and onsite functions for nuclear development. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of this NDQAM. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

The SNC Nuclear Development (ND) organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within SNC which implement and support the NDQAP. These organizations include, but are not limited to Nuclear Development, Technical Support, Corporate Services, Nuclear Fleet Security and Emergency Planning, General Counsel, and Quality Assurance.

Design, engineering and environmental services are provided to the SNC Nuclear Development Organization by three primary contractors in accordance with their Quality Assurance Programs. These three contractors are Bechtel Power Corporation, Inc. (Bechtel), Westinghouse Electric Company LLC (Westinghouse), and Tetra Tech NUS, Inc. (TtNUS).

The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting the Nuclear Development QA Program. The Southern Nuclear Organization and the Nuclear Development Organization are shown in Figures II.1-1 and II.1-2 respectively.

1.1 President and CEO

The president/CEO is responsible for all aspects of design and construction of Southern Company's nuclear plants. The president/CEO is also responsible for all technical and administrative support activities provided by SNC and contractors. The president/CEO directs the chief nuclear officer/executive vice president, the senior vice president-nuclear development, the vice president and general counsel, the vice president corporate services, and the vice president technical support in fulfillment of their responsibilities. The president/CEO reports to the SNC Board of Directors with respect to all matters.

1.2 Nuclear Development

Southern Nuclear Operating Company, Nuclear Development (ND) organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operational development activities.

1.2.1 Senior Vice President – Nuclear Development

The Senior Vice President - Nuclear Development (SVPND) reports to the SNC President and Chief Executive Officer (CEO) and is responsible for the administration of the Nuclear Development QA Program described in this manual. The SVPND also directs the planning and development of the Nuclear Development staff, and organization resources. The SVPND is also responsible for establishing and managing the Westinghouse contract for the development of new nuclear generation.

1.2.1.1 Nuclear Technology and Start-up Director

The Nuclear Technology and Start-up Director (NTSD) reports to the Senior Vice President – Nuclear Development and is responsible for new plant standardized design and support for construction, start-up and operations development, including initial operations staffing and training.

1.2.1.2 Vogtle Deployment Director

The Vogtle Deployment Director (VDD) reports to the Senior Vice President – Nuclear Development and is responsible for the effective implementation of the NDQAP for Vogtle site new nuclear plant licensing, procurement, and construction activities. The VDD is responsible for ESP and COL license applications and the supporting site specific engineering activities. The VDD is responsible for the planning and oversight of new Vogtle nuclear plant construction and procurement activities.

1.2.1.2.1 Vogtle Licensing Manager

The Vogtle Licensing Manager (VLM) reports to the Vogtle Deployment Director and is responsible for the effective implementation of the NDQAP for the Vogtle site new nuclear plant licensing activities. The VLM has overall authority for all activities supporting development of the ESP and COL applications including licensing and license engineering activities. The VLM and his staff are responsible for managing the principal contractors and all contractor-related activities, such as site specific engineering, collecting and analyzing data, conducting testing for site suitability, and developing application content. The VLM and his staff are responsible for coordinating actions of the principal contractors (Bechtel and TtNUS), Southern Company and SNC resources supporting development of license applications. The VLM and his staff are also the primary interface with the NRC staff during the ESP and COL review process.

1.2.1.3 Business Services Project Manager

The Business Services Project Manager (BSPM) reports to the Senior Vice President – Nuclear Development and is responsible for the effective implementation of the NDQAP involving contract negotiations, budgets, financials, and supply chain issues as related to new nuclear plant development. In this capacity, the BSPM will serve as liaison with related groups within SNC.

1.3 Technical Support

The Technical Support organization is responsible for support of Nuclear Development organization by providing engineering, licensing and document control support where applicable.

1.3.1 Vice President – Technical Support

The Vice President - Technical Support reports to the SNC President and CEO and is responsible for the administration of engineering and nuclear fuel and activities supporting the NDQAP activities.

1.3.1.1 Vice President Engineering

The Vice President Engineering reports to the Vice President Technical Support and has corporate responsibility for SNC Engineering activities supporting the NDQAP for new nuclear generation through Plant Support and Engineering Administrative Services activities.

1.3.1.1.1 Plant Support

The Plant Support Manager reports to the Vice President Engineering and has corporate responsibility for SNC Plant Support activities supporting the NDQAP through the Probabilistic Risk Assessment (PRA) section, and Nuclear Licensing section.

The PRA Services Supervisor reports to the Plant Support Manager. The PRA section is responsible for providing specialized engineering and technical services in the areas of licensing and regulatory support. PRA Services will specifically support the Nuclear Development organization in the completion of the Westinghouse AP1000 PRA models for the new nuclear plants.

The Nuclear Licensing Manager reports to the Plant Support Manager. Nuclear Licensing performs both plant specific and generic licensing activities for the SNC operating units. Nuclear Licensing will support Nuclear Development through licensing activities addressing impacts to the existing Vogtle Units and through support of industry efforts related to new nuclear generation. Nuclear Licensing will also support Nuclear Development licensing activities after issuance of the COL.

1.3.1.1.2 Engineering Administrative Services

The Engineering Administrative Services Manager reports to the Vice President Engineering. The Engineering Administrative Services department is comprised of the Document Services and the Technical Training sections.

The Document Services section is responsible for control and management of engineering documents. This includes record scanning, database indexing, and creating and distributing compact disks (CDs). Document Services will provide document control services for Nuclear Development.

The Technical Training section is responsible for developing, coordinating, tracking and administering technical training for corporate organizations. Technical Training will be responsible for maintaining records of staff training as well as the development of curriculum for initial and ongoing staff training. Technical Training will provide support for Nuclear Development.

1.3.1.2 Nuclear Fuel

The Nuclear Fuel Manager reports to the Vice President - Technical Support. The Nuclear Fuel department is comprised of the Core Analysis, Nuclear Fuel Services and Fuel Performance sections. Nuclear Fuel will provide fuel design and procurement for Nuclear Development.

1.4 Corporate Services

The Corporate Services organization is responsible for supporting the Nuclear Development organization through performing activities related to procurement, safety and health and information technology where applicable.

1.4.1 CFO and Vice President Corporate Services

The Chief Financial Officer (CFO) and Vice President Corporate Services, reports to the SNC President and Chief Executive Officer and is responsible for managing the overall Corporate Services organization including assuring that Supply Chain Management, Safety and Health and Information Technology support Nuclear Development activities in accordance with the NDQAP.

1.4.1.1 Supply Chain Management

The Supply Chain General Manager reports to the CFO and Vice President Corporate Services and is responsible for the effective management of the Supply Chain Management organization supporting Nuclear Development activities. The Supply Chain Management Department is responsible for the preparation of procurement documents for purchasing materials and services for SNC. In support of this effort, Supply Chain Management is responsible for preparing, with appropriate input from engineering, procurement documents for purchasing certain materials, components, equipment, and services which will include provisions for material identification and control. Supply Chain Management is also responsible for the review of these specifications for adequacy of identification, control, technical, and quality requirements. Similarly, Supply Chain Management reviews and approves information included in procurement documents to verify inclusion of adequate technical and quality requirements.

1.4.1.2 Safety and Health

Safety and Health reports to the CFO and Vice President Corporate Services and is responsible for coordinating the overall Fitness-for-Duty (FFD) program among SNC management, the corporate staff, the staff at each of the SNC nuclear plants and the Nuclear Development organization. In this capacity, Safety and Health administers the FFD program's random selection process; performs drug and alcohol testing at the corporate office and at each SNC nuclear plant pursuant to 10 CFR 26; "Fitness for Duty Programs"; ensures that testing procedures are in place; trains the FFD staff; and maintains associated training records.

In addition, Safety and Health develops policies and procedures to ensure a safe and healthy workplace and compliance with standards established by the Occupational Safety and Health Administration.

1.4.1.3 Southern Company Services (SCS) Information Technology (IT)

The SCS IT Group Manager is responsible for SNC IT activities and reports administratively to the Regional Chief Information Officer-Generation and functionally to the SNC CFO and VP Corporate Services. The SCS IT Group Manager shall provide support to the Nuclear Development organization including but not limited to applications, servers, tape backup, voice and data, network infrastructure hardware, and emergency communication hardware. The IT Group Manager will provide support to Technical Support or Corporate Services under this QAP and associated SNC procedures for software control, SyncPowr disaster prevention/recovery, and emergency planning. The IT Group Manager is also responsible for maintaining controls for SNC software applications which are not required to be maintained under the SNC program described herein.

1.5 Executive Vice President Nuclear

The Executive Vice President Nuclear is the Chief Nuclear Officer (CNO) and is responsible for the safe, reliable, and efficient operation of SNC nuclear plants. The CNO directs the operating plants' Vice Presidents - Project (Vogtle, Hatch and Farley), Nuclear Fleet Security and Emergency Planning Manager, and the Quality Assurance Manager. The Executive Vice President will support Nuclear Development activities through the Vice President – Vogtle, the Nuclear Fleet Security and Emergency Planning organization, and the Quality Assurance organization.

1.5.1 Vice President – Project

The Vice Presidents - Project report to the Executive Vice President - Nuclear and are responsible for the overall safe and efficient operation of their operating plant, and for the implementation of quality assurance requirements in the areas specified by the operations Quality Assurance program.

For the purposes of this program, the description of the duties of the Vice Presidents – Project and their staff will be limited to those site activities that support the Nuclear Development new nuclear generation activities.

1.5.1.1 Site Project Organization

The Site Project Organization is responsible for operations and maintenance of the respective plant site. The Site Project Organization is responsible for operations quality inspection activities of operations on-site work, including any that support Nuclear Development ESP and COL application development, as well as controlling interfaces between the operating units and any preconstruction or construction activities.

1.5.2 Nuclear Fleet Security and Emergency Planning

The Nuclear Fleet Security and Emergency Planning (NFSEP) Manager reports to the Executive Vice President – Nuclear and is responsible for management of the NFSEP organization and the overall coordination of fleet security activities and programs, the corporate emergency planning programs (including the common Emergency Operations Facility) and the Access Authorization program. The Nuclear Fleet Security and Emergency Planning Manager will also have responsibility for site emergency response communication. The NFSEP organization is responsible for providing information and support concerning emergency plans and security to the Nuclear Development organization.

For the Access Authorization Program, the Nuclear Fleet Security and Emergency Planning Manager shall assure compliance with 10 CFR 73.56 (Access Authorization), NRC Order EA-02-261, dated January 7, 2003 (Compensatory Measures Related to Access Authorization Program); and 10 CFR 73.57 (Criminal History Check and Pre-Access Suitable Inquiries.)

1.5.3 Quality Assurance

The SNC Quality Assurance Organization is responsible for independently planning and performing activities to verify the development and effective implementation of the SNC quality assurance programs including but not limited to nuclear development, engineering, licensing, document control, corrective action program and procurement that support new nuclear plant generation.

1.5.3.1 Quality Assurance Manager

The Quality Assurance Manager reports to the Executive President - Nuclear for the operations activities and to the Senior Vice President – Nuclear Development for the new reactor activities and is responsible for developing and maintaining the SNC quality assurance programs, evaluating compliance to the programs and managing the QA organization resources.

1.5.3.1.1 Nuclear Development Quality Assurance Project Engineer

The Nuclear Development Quality Assurance Project Engineer (NDQAPE) reports administratively to the SNC QA Manager and functionally to the Senior Vice President – Nuclear Development, and is responsible for the development and verification of implementation of the NDQAP described in this manual. The NDQAPE is responsible for assuring compliance with regulatory requirements and procedures through audits and technical reviews; for monitoring organization processes to ensure conformance to commitments and licensing document requirements; for ensuring that vendors providing quality services, parts and materials to SNC are meeting the requirements of 10CFR50 Appendix B through NUPIC or SNC vendor audits. The NDQAPE has sufficient independence from other nuclear development priorities to bring forward issues affecting safety and quality and makes judgments regarding quality in all areas necessary regarding Southern Nuclear's Nuclear Development activities. The NDQAPE may make recommendations to the Nuclear Development management regarding improving the quality of work processes. If the NDQAPE disagrees with any actions taken by the ND organization and is unable to obtain resolution, the NDQAPE shall inform the QA Manager and bring the matter to the attention of the Senior Vice President - Nuclear Development who will determine the final disposition.

1.5.3.1.2 Quality Assurance Supervisor (Corporate)

The Quality Assurance Supervisor (Corporate) reports to the Quality Assurance Manager and is responsible for supporting evaluations of the quality programs of suppliers and contractors performing Nuclear Development activities within the scope of the NDQAP. This is accomplished by scheduling and conducting triennial external audits, annual supplier quality assurance program evaluations, reviewing audits conducted by external organizations (e.g., other utilities and the Nuclear Procurement Issues Committee), and maintenance of the Qualified Suppliers List. In addition, the Quality Assurance Supervisor is responsible to the Quality Assurance Manager for assuring compliance with the corporate Quality Assurance program, administration of the internal audit program, and supervising and interfacing with corporate Quality Assurance personnel.

1.5.3.1.2 Quality Assurance Supervisor (Site)

The Quality Assurance Supervisor (Site) reports to the Quality Assurance Manager and is primarily responsible for operations quality assurance activities for the existing units. He and his staff may also support Nuclear Development activities by performing oversight of onsite work which supports ESP/COL development.

1.6 Vice President and General Counsel

The Vice-President and General Counsel reports to the SNC President and CEO and is responsible for managing the various functions associated with general counsel, compliance officer, and external affairs. Reporting to this position is the Manager of Environmental Affairs.

1.6.1 Environmental Affairs

The Environmental Affairs Manager reports to the Vice President and General Counsel and is responsible for managing environmental issues such as radiological environmental, non-radiological environmental, dose and shielding calculations, and low level radioactive waste functions supporting the Nuclear Development organization. Environmental Affairs is responsible for providing various licensing, engineering and environmental related services in support of the Nuclear Development organization.

1.7 Westinghouse Electric Company, LLC

Westinghouse Electric Company, LLC (Westinghouse) provides engineering services for plant design and licensing of Westinghouse AP-1000 plants on Southern Company sites. These engineering services for new nuclear generation include site specific engineering and design necessary to support development of ESP and COL applications, preconstruction and construction activities.

1.8 Bechtel Power Corporation, Inc.

Bechtel Power Corporation, Inc (Bechtel) provides engineering services for the development of the ESP and COL applications. These engineering services include site specific license engineering, and design activities necessary to support development of the ESP and COL applications, and planning and support for preconstruction and construction of new nuclear generation.

1.9 Tetra Tech NUS, Inc.

Tetra Tech NUS, Inc (TtNUS) provides environmental services to the Nuclear Development organization in support of the development of the ESP and COL applications. These environmental services include site specific investigation and analysis necessary to support development of the ESP and COL applications, and planning and support for preconstruction and construction of new nuclear generation.

1.10 NQA-1-1994 Commitment

In establishing its organizational structure, SNC commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1.

Figure II.1-1

SNC Organization

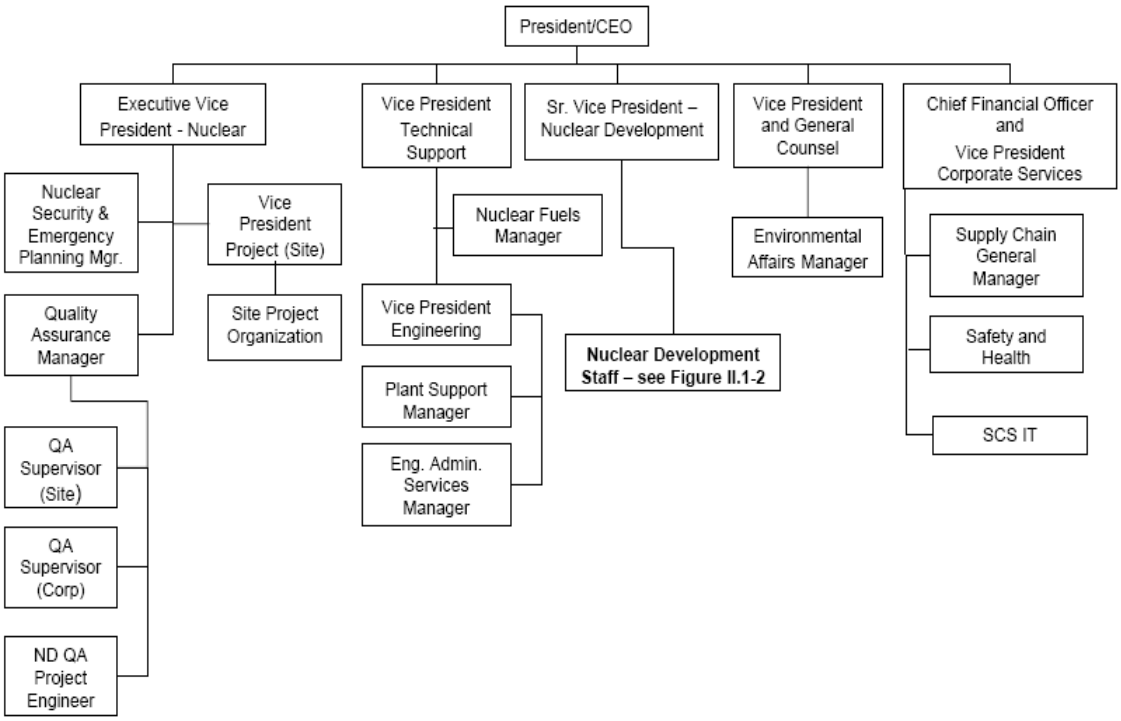
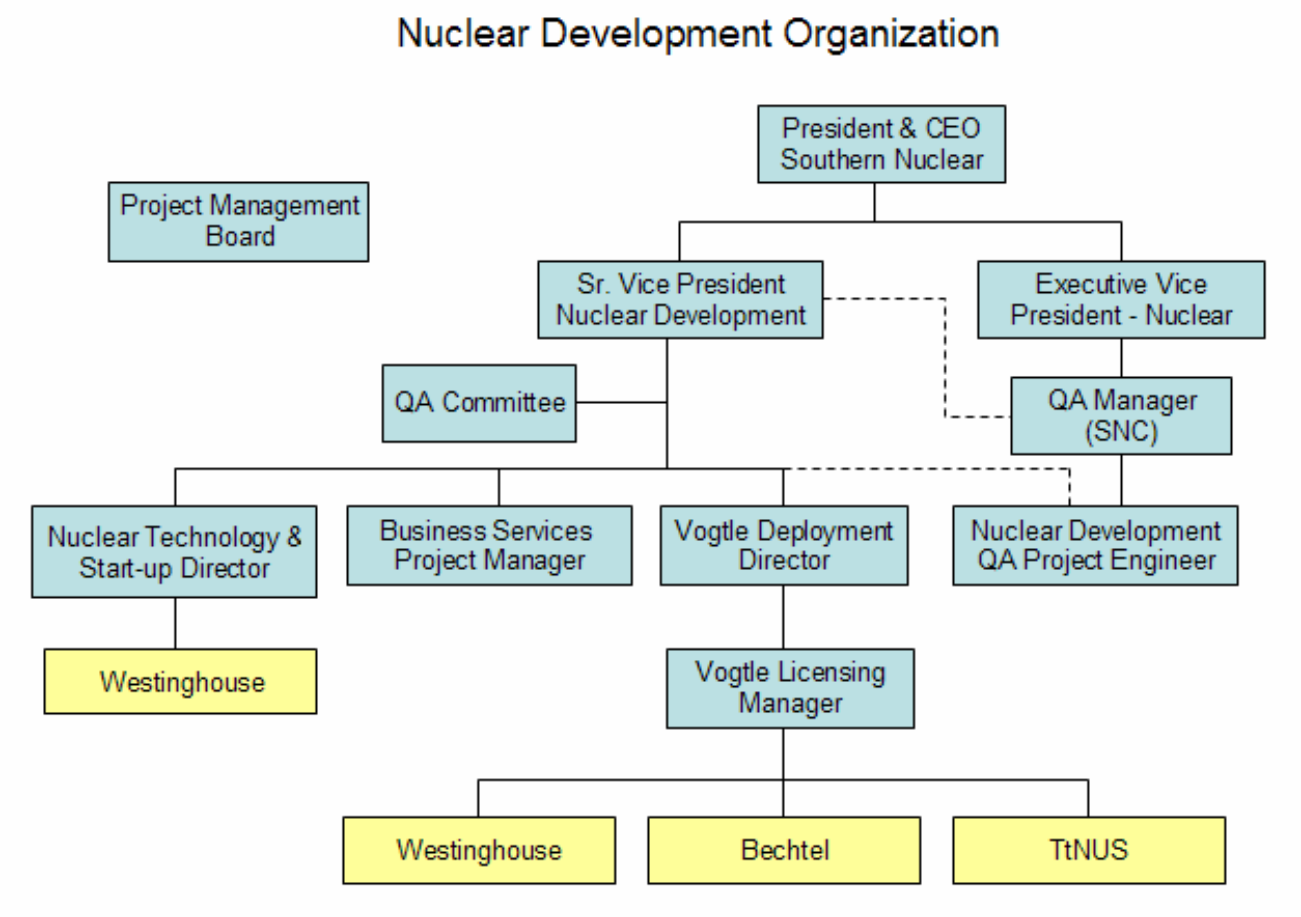


Figure II.1-2


Nuclear Development Organization
President & CEO Southern Nuclear
Project Management Board
Sr. Vice President Nuclear Development
Executive Vice President - Nuclear
QA Committee
QA Manager (SNC)
Nuclear Technology & Start-up Director
Business Services Project Manager
Vogtle Deployment Director
Nuclear Development QA Project Engineer
Westinghouse
Vogtle Licensing Manager
Westinghouse
Bechtel
TtNUS

SECTION 2 QUALITY ASSURANCE PROGRAM

SNC has established the necessary measures and governing procedures to implement the NDQAP as described in the NDQAM. SNC is committed to meeting this NDQAP in all aspects of work that are important to the safety and reliability of the nuclear plants as described and to the extent delineated in this NDQAM. Further, SNC ensures through the systematic process described herein that its suppliers of safety related equipment or services meet the applicable requirements of 10CFR 50, Appendix B. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the NDQAP through the audit functions described in the Audit Section of this NDQAM.

The objective of the NDQAP is to assure that SNC nuclear generating plants are designed and constructed in accordance with governing regulations and license requirements. The program is based on the requirements of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," as further described in this manual. The NDQAP applies to those quality-related activities that involve the functions of safety-related structures, systems, and components (SSCs) associated with the design, licensing and construction of new nuclear power plants as described in the ESP Site Safety Analysis Report and COL Final Safety Analysis Report. Examples of ESP/COL program safety-related activities include, but are not limited to, site specific engineering related to safety related SSCs, site geotechnical investigations, site engineering analysis, seismic analysis, and meteorological analysis. Cost and scheduling functions do not prevent proper implementation of the NDQAP.

Delegated responsibilities may be performed under a supplier's or principal contractor's Quality Assurance Program that has been approved by the SNC Quality Assurance organization. Periodic audits and assessments of supplier QA programs are performed to assure compliance with the approved program and implementing procedures. In addition, routine interfaces with project personnel assure that quality expectations are met.

For the ESP and COL applications, this Quality Assurance Program applies to those Nuclear Development and SNC activities that can affect either directly or indirectly the safety-related site characteristics or analysis of those characteristics. In addition, this QAP applies to engineering activities that are used to characterize the site or analyze that characterization.

New nuclear plant construction will be the responsibility of SNC's Nuclear Development organization. Detailed engineering specifications and construction procedures will be developed to implement the NDQAP and Westinghouse QA programs prior to commencement of preconstruction (ESP) and/or construction (COL) activities. Examples of Limited Work Authorization (LWA) 1 and LWA 2 activities that could impact safety-related SSCs would include impacts of construction to existing facilities and for construction of new plants, the design interface between non safety-related and safety-related SSCs and the placement of seismically designed backfill.

In general, the program requirements specified herein are detailed in implementing procedures that are either SNC implementing procedures, or supplier implementing procedures governed by a supplier quality program.

2.1 Responsibilities

Personnel who work directly or indirectly for SNC are responsible for the achievement of acceptable quality in the work covered by this NDQAM. This includes those activities delineated in Part I, Section 1.1 of this NDQAM. SNC personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the NDQAP are performed as directed by documented instructions, procedures and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The Quality Assurance Manager is responsible to verify that processes and procedures comply with NDQAM and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

2.2 Delegation of Work

SNC retains and exercises the responsibility for the scope and implementation of an effective NDQAP. Positions identified in the Organization Section of this NDQAM may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate for its nature and effect, and with any necessary technical advice or review.

2.3 ESP and COL Identification of Site Specific Safety Related Design Basis Activities

ESP site specific safety-related design basis activities are defined as those activities, including sampling, testing, data collection and supporting engineering calculations and reports that will be used to determine the bounding physical parameters of the site. The development of the SNC ESP and COL applications will involve site testing, data collection and calculations that may create or bound safety-related design basis data. Site testing and data collection of information pertaining to the physical characteristics of the site that have the potential to affect safety-related design will be considered safety related. In addition, calculations and other engineering data that bounds or characterizes the site will be classified as safety related. The ND organization will develop an ESP application Quality Criteria Document (QCD) identifying the sections of the application that include safety-related design basis activities. In addition the QCD will identify those sections of the application and supporting analysis that will be treated with appropriate quality requirements. The ND organization will develop annotated outlines for the COL application that will identify the sections safety classification and the regulatory requirements applicable to the section content.

2.4 Periodic Review of the Quality Assurance Program

Reviews of the status and adequacy of the Nuclear Development Quality Assurance Program and its implementation will be conducted on an ongoing basis via senior management review of quality assurance audit reports. The senior management review will also include reviews by the SNC Nuclear Development Quality Assurance Committee.

2.5 Issuance and Revision to NDQAM

Administrative control of the NDQAM will be the responsibility of the ND Quality Assurance Project Engineer. Changes to the NDQAM are evaluated by the ND Quality Assurance Project Engineer to ensure that such changes do not degrade previously approved quality assurance controls specified in the NDQAP. This manual shall be revised as appropriate to incorporate additional QA commitments that may be established during the ESP and COL application development process. New revisions to the manual will be reviewed, at a minimum, by the SNC Quality Assurance Manager and approved by the Senior Vice President - Nuclear Development.

2.6 Personnel Qualifications

Personnel assigned to implement elements of the NDQAP shall be capable of performing their assigned tasks. To this end SNC establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the NDQAP to assure that suitable proficiency is achieved and maintained. Plant and support staff minimum qualification requirements are as delineated in each site's Technical Specifications. Other qualification requirements may be established but will not reduce those required by Technical Specifications. Sufficient managerial depth is provided to cover absences of incumbents. When required by code, regulation, or standard, specific qualification and selection of personnel is conducted in accordance with those requirements as established in the applicable SNC procedures. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards, and the NDQAP elements to be employed. Training for positions identified in 10 CFR 50.120 is accomplished according to programs accredited by the National Nuclear Accrediting Board of the National Academy of Nuclear Training that implement a systematic approach to training. Records of personnel training and qualification are maintained.

The minimum qualifications of the Quality Assurance Manager and the Nuclear Development Quality Assurance Project Engineer are that each holds an engineering or related science degree and has a minimum of five year's experience in the areas of engineering, field construction, or plant operations. Two of these five years must involve working under a nuclear quality assurance program.

2.7 NQA-1-1994 Commitment / Exceptions

- In establishing qualification and training programs, SNC commits to compliance with NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3 and 2S-4, with the following clarifications and exceptions:
    - NQA-1-1994, Supplement 2S-1
        - SNC Supplement 2S-1 will include use of the guidance provided in Appendix 2A-1 the same as if it were part of the Supplement. The following two alternatives may be applied to the implementation of this Supplement and Appendix:
            - (1) In lieu of being certified as Level I, II, or III in accordance with NQA-1-1994, personnel performing independent quality verification inspections, examinations, measurements, or tests of

material, products, or activities will be required to possess qualifications equal to or better than those required for performing the task being verified; and the verification is within the skills of these personnel and/or is addressed by procedures. These individuals will not be responsible for the planning of quality verification inspections and tests (i.e., establishing hold points and acceptance criteria in procedures, and determining who will be responsible for performing the inspections), evaluating inspection training programs, nor certifying inspection personnel.

- (2) A qualified engineer may be used to plan inspections, evaluate the capabilities of an inspector, or evaluate the training program for inspectors. For the purpose of these functions, a qualified engineer is one who has a baccalaureate in engineering in a discipline related to the inspection activity (such as electrical, mechanical, civil) and has a minimum of five years engineering work experience with at least two years of this experience related to nuclear facilities.

- NQA-1-1994, Supplement 2S-2
  - In lieu of Supplement 2S-2, for qualification of nondestructive examination personnel, SNC will follow the applicable standard cited in the version(s) of Section III of the ASME Boiler and Pressure Vessel Code approved by the NRC for use at SNC sites.
- NQA-1-1994, Supplement 2S-3
  - The requirement that prospective Lead Auditors have participated in a minimum of five (5) audits in the previous three (3) years is replaced by the following, “The prospective lead auditor shall demonstrate his/her ability to properly implement the audit process, as implemented by SNC, to effectively lead an audit team, and to effectively organize and report results, including participation in at least one nuclear audit within the year preceding the date of qualification.”

SECTION 3 DESIGN CONTROL

SNC has established and implements a process to control the design, design changes and temporary modifications (e.g. temporary bypass lines, electrical jumpers and lifted wires, and temporary setpoints) of items that are subject to the provisions of this NDQAM. The design process includes provisions to control design inputs, outputs, changes, interfaces, records and organizational interfaces within SNC and with suppliers. These provisions assure that design inputs (such as design bases and the performance, regulatory, quality, and quality verification requirements) are correctly translated into design outputs (such as analyses, specifications, drawings, procedures, and instructions) so that the final design output can be related to the design input in sufficient detail to permit verification. Design change processes and the division of responsibilities for design related activities are detailed in SNC and supplier procedures. The design control program includes interface controls necessary to control the development, verification, approval, release, status, distribution and revision of design inputs and outputs. Design changes and disposition of nonconforming items as “use as is” or “repair” are reviewed and approved by the SNC design organization or by other organizations so authorized by SNC.

In addition, temporary design changes (temporary modifications), such as temporary bypass lines, electrical jumpers and lifted wires, and temporary trip-point settings, are controlled by procedures that include requirements for appropriate installation and removal verifications and status tracking.

3.1 Design Verification

SNC design processes provide for design verification to ensure that items and activities subject to the provisions of this NDQAM are suitable for their intended application, consistent with their effect on safety. Design changes are subjected to these controls, which include verification measures commensurate with those applied to original plant design.

Design verifications are performed by competent individuals or groups other than those who performed the original design but who may be from the same organization. The verifier shall not have taken part in the selection of design inputs, the selection of design considerations, or the selection of a singular design approach, as applicable. This verification may be performed by the originator’s supervisor provided the supervisor did not specify a singular design approach, rule out certain design considerations, did not establish the design inputs used in the design, or if the supervisor is the only individual in the organization competent to perform the verification. If the verification is performed by the originator’s supervisor, the justification of the need is documented and approved in advance by management.

The extent of the design verification required is a function of the importance to safety of the item under consideration, the complexity of the design, the degree of standardization, the state-of-the-art, and the similarity with previously proven designs. This includes design inputs, design outputs and design changes. Design verification procedures are established and implemented to assure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria are identified, and the verification is satisfactorily accomplished and documented. Verification methods may include, but are not limited to, design reviews, alternative calculations and qualification testing. Testing used to verify the acceptability of a specific design feature demonstrates acceptable performance under conditions that simulate the most adverse design conditions expected for item’s intended use.

SNC normally completes design verification activities before the design outputs are used by other organizations for design work, and before they are used to support other activities such as procurement, manufacture or construction. When such timing cannot be achieved, the design verification is completed before relying on the item to perform its intended design or safety function.

3.2 Design Records

SNC maintains records sufficient to provide evidence that the design was properly accomplished. These records include the final design output and any revisions thereto, as well as record of the important design steps (e.g., calculations, analyses and computer programs) and the sources of input that support the final output.

Plant design drawings reflect the properly reviewed and approved configuration of the plant.

3.3 Computer Application and Digital Equipment Software

The NDQAP shall govern the development, procurement, testing, maintenance, and use of computer application and digital equipment software when used in safety-related applications and designated non-safety-related applications. SNC and suppliers shall be responsible for developing, approving, and issuing procedures, as necessary, to control the use of such computer application and digital equipment software. The procedures shall require that the application software be assigned a proper quality classification and that the associated quality requirements be consistent with this classification. Each application software and revision thereto shall be approved by designated SNC and supplier management and listed in a software register for identifying active quality related applications. This NDQAP shall also be applicable to the administrative functions associated with the maintenance and security of computer hardware where such functions are considered essential in order to comply with other NDQAP requirements such as QA records.

3.4 NQA-1-1994 Commitment

In establishing its program for design control and verification, SNC commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1.

SECTION 4 PROCUREMENT DOCUMENT CONTROL

SNC has established the necessary measures and governing procedures to assure that purchased items (components, spares and replacement parts necessary for plant design and construction) and services are subject to quality and technical requirements at least equivalent to those specified for original equipment or specified by properly reviewed and approved revisions to the original requirements to assure the items are suitable for the intended service, and are of acceptable quality, consistent with their effect on safety. Procurement document changes shall be subject to the same degree of control as utilized in the preparation of the original documents. These controls include provisions such that:

- Where original technical or quality assurance requirements cannot be determined, an engineering evaluation is conducted and documented by qualified staff to establish appropriate requirements and controls to assure that interfaces, interchangeability, safety, fit and function, as applicable, are not adversely affected or contrary to applicable regulatory requirements.

- Applicable technical, regulatory, administrative, quality and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10CFR21) are invoked for procurement of items and services. Applicable design bases and other requirements necessary to assure adequate quality shall be included or referenced in documents for procurement of items and services. To the extent necessary, procurement documents shall require suppliers to have a quality assurance program consistent with the applicable requirements of this NDQAM.

4.1 Reviewer Qualification

Reviews required by this Section shall be performed by personnel who have access to pertinent information and who have an adequate understanding of the requirements and intent of the procurement documents.

4.2 NQA-1-1994 Commitment

In establishing controls for procurement, SNC commits to compliance with NQA-1-1994, Basic Requirements 4 and Supplements 4S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 4S-1

  - Section 2.3 of this Supplement 4S-1 includes a requirement that procurement documents require suppliers to have a documented quality assurance program that implements NQA-1-1994, Part 1. In lieu of this requirement, SNC may require suppliers to have a documented supplier quality assurance program that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of the procurement.

  - With regard to service performed by a supplier, SNC procurement documents may allow the supplier to work under the SNC quality assurance program, including implementing procedures, in lieu of the supplier having its own quality assurance program.

- Section 3 of this supplement 4S-1 requires procurement documents to be reviewed prior to bid or award of contract. The quality assurance review of procurement documents is satisfied through review of the applicable procurement specification, including the technical and quality procurement requirements, prior to bid or award of contract.

SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

SNC has established the necessary measures and governing procedures to ensure that activities affecting quality are prescribed by and performed in accordance with instructions, procedures or drawings of a type appropriate to the circumstances and which, where applicable, include quantitative or qualitative acceptance criteria to implement the NDQAP as described in the NDQAM. Such documents are prepared and controlled according to Part II, Section 6 of this NDQAM. In addition, means are provided for dissemination to the staff of instructions of both general and continuing applicability, as well as those of short-term applicability. Provisions are included for reviewing, updating, and canceling such procedures.

5.1 Procedure Adherence

The SNC policy is that procedures are followed, and the requirements for use of procedures have been established in administrative procedures. Where procedures cannot be followed as written, provisions are established for making changes in accordance with Part II, Section 6 of this NDQAM. Requirements are established to identify the manner in which procedures are to be implemented, including identification of those tasks that require (1) the written procedure to be present and followed step-by-step while the task is being performed, (2) the user to have committed the procedure steps to memory, (3) verification of completion of significant steps, by initials or signatures or use of check-off lists. Procedures that are required to be present and referred to directly are those developed for extensive or complex jobs where reliance on memory cannot be trusted, tasks that are infrequently performed, and tasks where steps must be performed in a specified sequence.

Administrative procedures prescribe the methods whereby procedures can be temporarily revised without undue delay when the need arises. These temporary procedure revisions may not change intent of the approved procedure. Such revisions are documented and approved by the appropriate management within 14 days of implementation. In cases of emergency, personnel are authorized to depart from approved procedures when necessary to prevent injury to personnel or damage to the plant. Such procedures are logged describing the prevailing conditions and reasons for the action taken.

5.2 NQA-1-1994 Commitment

In establishing procedural controls, SNC commits to compliance with NQA-1-1994, Basic Requirement 5.

SECTION 6 DOCUMENT CONTROL

SNC has established the necessary measures and governing procedures to control the preparation of, issuance of, and changes to documents that specify quality requirements or prescribe how activities affecting quality are controlled to assure that correct documents are being employed. Such documents, including changes thereto, shall be reviewed for adequacy and approved for release by authorized personnel. The control system shall be documented and shall provide for (a) through (c) below:

(a) identification of documents to be controlled and their specified distribution;

(b) identification of assignment of responsibility for preparing, reviewing, approving, and issuing documents;

(c) review of documents for adequacy, completeness, and correctness prior to approval and issuance.

6.1 Changes to Documents

Changes to documents, other than those defined in implementing procedures as minor changes, are considered as major changes and shall be reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organization shall have access to pertinent background data or information upon which to base their approval. Minor changes to documents, such as inconsequential editorial corrections, shall not require that the revised documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, the type of minor changes that do not require such a review and approval and the persons who can authorize such a decision shall be clearly delineated in implementing procedures.

6.2 NQA-1-1994 Commitment

In establishing provisions for document control, SNC commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

SNC has established the necessary measures and governing procedures to control the procurement of items and services to assure conformance with specified requirements. Such control shall provide for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the Supplier, source inspection, audit, and examination of items or services upon delivery or completion.

7.1 Acceptance of Item or Service

SNC establishes and implements measures to assure the quality of purchased items and services, whether purchased directly or through contractors, at intervals and to a depth consistent with the item's or service's importance to safety, complexity, quantity and the frequency of procurement. Verification actions include testing, as appropriate, during design, fabrication and construction activities. Verifications occur at the appropriate phases of the procurement process, including, as necessary, verification of activities of suppliers below the first tier.

Measures to assure the quality of purchased items and services include the following, as applicable:

- Items are inspected, identified, and stored to protect against damage, deterioration, or misuse.

- Prospective suppliers of safety-related items and services are evaluated to assure that only qualified suppliers are used. Qualified suppliers are audited on a triennial basis. SNC may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet SNC requirements. Documented annual evaluations are performed for qualified suppliers to assure they continue to provide acceptable products and services. Industry programs, such as those applied by ASME, Nuclear Procurement Issues Committee (NUPIC), or other established utility groups, are used as input or the basis for supplier qualification whenever appropriate. The results of the reviews are promptly considered for effect on a supplier's continued qualification and adjustments made as necessary (including corrective actions, adjustments of supplier audit plans, and input to third party auditing entities, as warranted). In addition, results are reviewed periodically to determine if, as a whole, they constitute a significant condition adverse to quality requiring additional action.

- Provisions are made for accepting purchased items and services, such as source verification, receipt inspection, pre- and post-installation tests, certificates of conformance, and document reviews. Acceptance actions are completed to ensure that procurement, inspection, and test requirements, as applicable, have been satisfied before relying on the item to perform its intended safety function.

- Controls are imposed for the selection, determination of suitability for intended use (critical characteristics), evaluation, receipt and acceptance of commercial-grade services or "off-the-shelf" items to assure they will perform satisfactorily in service in safety related applications.

7.2 NQA-1-1994 Commitment

In establishing procurement verification controls, SNC commits to compliance with NQA-1-1994, Basic Requirement 7 and Supplement 7S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 7S-1

  - SNC considers that other 10 CFR 50 licensees, Authorized Nuclear Inspection Agencies, National Institute of Standards and Technology, or other State and Federal agencies which may provide items or services to SNC plants are not required to be evaluated or audited.

  - When purchasing commercial grade calibration services from a calibration laboratory, procurement source evaluation and selection measures need not be performed provided each of the following conditions are met:

    (1) The purchase documents impose any additional technical and administrative requirements, as necessary, to comply with the SNC QA program and technical provisions. At a minimum, the purchase document shall require that the calibration certificate/report include identification of the laboratory equipment/standard used.

    (2) The purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance.

    (3) A documented review of the supplier's accreditation shall be performed and shall include a verification of each of the following:

      - The calibration laboratory holds an accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) or by the American Association for Laboratory Accreditation (A2LA) as recognized by NVLAP through a Mutual Recognition Arrangement (MRA).

      - The accreditation is based on ANS/ISO/IEC 17025.

      - The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, ranges, and uncertainties.

  - For Section 8.1, SNC considers documents that may be stored in approved electronic media under SNC control and not physically located on the plant site but which are accessible from the respective nuclear facility site as meeting the NQA-1 requirement for documents to be available at the site.

  - In lieu of the requirements of Section 10, Commercial Grade Items, controls for commercial grade items and services are established in SNC documents using the guidance of EPRI NP-5652 as discussed in Generic Letter 89-02 and Generic Letter 91-05.

SECTION 8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

SNC has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf life. The identification of items is maintained throughout fabrication, erection, installation and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as not to affect the function or quality of the item.

8.1 NQA-1-1994 Commitment

In establishing provisions for identification and control of items, SNC commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

SECTION 9 CONTROL OF SPECIAL PROCESSES

SNC has established the necessary measures and governing procedures to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and nondestructive examination, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Special processes are performed in accordance with applicable codes, standards, specifications, criteria or other specially established requirements. Special processes are those where the results are highly dependent on the control of the process or the skill of the operator, or both, and for which the specified quality cannot be fully and readily determined by inspection or test of the final product.

9.1 NQA-1-1994 Commitment

In establishing measures for the control of special processes, SNC commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

SECTION 10 INSPECTION

SNC has established the necessary measures and governing procedures to implement inspections that assure items, services and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures, and design documents. Inspection may also be applied to items, services and activities affecting plant reliability and integrity. Types of inspections may include those verifications related to procurement, such as source, in-process, final, and receipt inspection, as well as construction and installation activities. Inspections are carried out by properly qualified persons independent of those who performed or directly supervised the work. Inspection results shall be documented.

10.1 NQA-1-1994 Commitment / Exceptions

- In establishing inspection requirements, SNC commits to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1 and Subpart 2.4, with the clarification that follows below. In addition, SNC commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

  - Subpart 2.4 commits SNC to IEEE 336-1985. IEEE 336-1985 refers to IEEE 498-1985. Both IEEE 336 -1985 and IEEE 498-1985 use the definition of “Safety Systems Equipment” from IEEE 603- 1980. SNC commits to the definition of Safety Systems Equipment in IEEE 603-1980, but does not commit to the balance of that standard.

  - An additional exception to Subpart 2.4 is contained in Section 12 of this NDQAM.

SECTION 11 TEST CONTROL

SNC has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of this NDQAM will perform satisfactorily in service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant as a whole is satisfactory. These programs include criteria for determining when testing is required, such as proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, in-service tests, and operational tests (such as surveillance tests required by Plant Technical Specifications), to demonstrate that performance of plant systems is in accordance with design. Programs also include provisions for establishing and adjusting test schedules and maintaining status for periodic or recurring tests. Tests are performed according to applicable procedures that include, consistent with the effect on safety, (1) instructions and prerequisites to perform the test, (2) use of proper test equipment, (3) acceptance criteria, and (4) mandatory verification points as necessary to confirm satisfactory test completion. Test results are documented and evaluated by the organization performing the test and reviewed by a responsible authority to assure that the test requirements have been satisfied. If acceptance criteria are not met, retesting is performed as needed to confirm acceptability following correction of the system or equipment deficiencies that caused the failure.

11.1 NQA-1-1994 Commitment

In establishing provisions for testing, SNC commits to compliance with NQA-1-1994, Basic Requirement 11 and Supplement 11S-1.

11.2 NQA-1-1994 Commitment for Computer Program Testing

SNC establishes and implements provisions to assure that computer software used in applications affecting safety is prepared, documented, verified and tested, and used such that the expected output is obtained and configuration control maintained. To this end SNC commits to compliance with the requirements of NQA-1-1994, Supplement 11S-2 and Subpart 2.7 to establish the appropriate provisions.

SECTION 12 CONTROL OF MEASURING AND TEST EQUIPMENT

SNC has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment that is not installed as plant equipment and that provides information important to safe plant operation. The provisions of such procedures cover equipment such as indicating and actuating instruments and gages, tools, reference and transfer standards, and nondestructive examination equipment.

The provisions of this NDQAM Section are intended to assure that:

- Measuring and test equipment is calibrated at specified intervals on the basis of the item's required accuracy, intended use, frequency of use, and stability characteristics or other conditions affecting its performance. Alternatively, equipment may be calibrated immediately before and after use if a defined interval is not appropriate.

- Measuring and test equipment is labeled, tagged or otherwise controlled to indicate its calibration status and provide traceability to calibration test data or records.

- Calibrations are performed against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated. When this is not possible, the standards have an accuracy that ensures the equipment being calibrated will be within the required tolerance.

- Where possible, calibration standards are traceable to appropriate national standards. Calibration standards have greater accuracy than the standards being calibrated, except where the same accuracy as the instruments being calibrated can be shown to be adequate for the service requirements.

- Measuring and test equipment found out of calibration is tagged or segregated and not used until it is successfully re-calibrated. An evaluation is performed to determine the acceptability of any items measured, inspected or tested with an out-of-calibration device from the time of the previous calibration.

12.1 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, SNC commits to compliance with NQA-1-1994, Basic Requirement 12, Supplement 12S-1 and Subpart 2.16 for establishing appropriate requirements for calibration and control of measuring and test equipment, with the following clarifications and exceptions:

- NQA-1-1994, Subpart 2.16 (ANSI/IEEE 498-1985)

  - Section 5.5 of ANSI/IEEE 498-85 requires all M&TE to be labeled. SNC plants may not label certain M&TE, such as installed instrumentation, but will provide other means of identification so that appropriate controls can be implemented. This exception also applies to labeling and tagging of items requiring calibration as discussed in Section 7.2.1 of ANSI/IEEE 336-85 (NQA-1, Subpart 2.4).

SECTION 13 HANDLING, STORAGE, AND SHIPPING

SNC has established the necessary measures and governing procedures to control the handling, storage, packaging, shipping, cleaning, and preservation of items to prevent inadvertent damage or loss, and to minimize deterioration. These provisions include specific procedures, when required to maintain acceptable quality of the items important to safety. Items are appropriately marked and labeled during packaging, shipping, handling and storage to identify, maintain, and preserve the item's integrity and indicate the need for special controls. Special controls (such as containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels and temperature levels) are provided when required to maintain acceptable quality.

13.1 Housekeeping

Housekeeping practices during construction and pre-operational activities are established to account for conditions or environments that could affect the quality of structures, systems and components within the plant. This includes control of cleanness of facilities and materials, fire prevention and protection, disposal of combustible material and debris, control of access to work areas, protection of equipment, radioactive contamination control and storage of solid radioactive waste. Housekeeping practices help assure that only proper materials, equipment, processes and procedures are used and that the quality of items is not degraded. Necessary procedures or work instructions, such as for electrical bus and control center cleaning, cleaning of control consoles, and radioactive decontamination are developed and used.

13.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for handling, storage and shipping, SNC commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. SNC also commits to compliance with the requirements of NQA-1-1994, Subpart 2.2, with the clarifications and exceptions shown below.

In addition, SNC commits to compliance with the requirements of NQA-1-1994, Subpart 2.1, to establish appropriate provisions for the cleaning of fluid systems and associated components; and Subpart 2.3, to establish appropriate provisions for housekeeping; with the following clarifications and exceptions:

- NQA-1-1994, Subpart 2.1
  - Subpart 2.1, sections 3.1 and 3.2, establish criteria for classifying items into cleanness classes and requirements for each class. Instead of using the cleanness level system of Subpart 2.1, SNC plants may establish cleanness requirements on a case-by-case basis, consistent with the other provisions of Subpart 2.1. SNC establishes appropriate cleanliness controls for work on safety related equipment to minimize introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities, including documented verification of absence of foreign materials prior to system closure.

- NQA -1-1994, Subpart 2.2

  - Subpart 2.2, sections 3.2 and 3.5: For items in storage, as determined by facility management, the packaging requirements described under section 3, Packaging, may include alternate methods of affording required protection such as maintaining a storage atmosphere free from harmful contaminants in concentrations that could produce damage to the stored items, or utilizing storage practices that obviate the need for capping all openings.

  - Subpart 2.2, section 6.6, "Storage Records:" This section requires written records be prepared containing information on personnel access. As an alternative to this requirement, SNC documents establish controls for storage areas that describe those authorized to access areas and the requirements for recording access of personnel. However, these records of access are not considered quality records and will be retained in accordance with the administrative controls of the applicable plant.

  - Subpart 2.2, section 7.1 refers to Subpart 2.15 for requirements related to handling of items. The scope of Subpart 2.15 includes hoisting, rigging and transporting of items for nuclear power plants. This scope exceeds the scope of the NRC's original endorsement of ANSI N45.2.2 in Regulatory Guide 1.38, and establishes requirements for which there is no NRC regulatory position. In lieu of compliance with Subpart 2.15, SNC establishes and implements controls over hoisting, rigging and transport activities to the extent necessary to protect the integrity of the items involved, as well as potentially affected nearby structures and components. For re-rating of lifting equipment to allow "special lifts," SNC performs dynamic load testing over the full range of the lift using test loads at least 110% of the lift weight. Dynamic tests include raising, lowering and traversing the load. Where required, SNC complies with applicable hoisting, rigging and transportation regulations and codes.

- NQA-1-1994, Subpart 2.3 requires a written record of the entry and exit of all personnel be established and maintained for Zones I, II, and III. The following exceptions are taken:

  - Instead of the five-level zone designation in Subpart 2.3, section 2.2, SNC bases its control over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are effected through procedures or instructions which, in the case of maintenance or modification work, are developed on a case-by-case basis. Factors considered in developing the procedures and instructions include cleanliness control, personnel safety, fire prevention and protection, radiation control, and security. The procedures and instructions make use of standard janitorial and work practices to the extent possible.

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

SNC has established the necessary measures and governing procedures to identify the inspection, test, and operating status of items and components subject to the provisions of this NDQAM in order to maintain personnel and reactor safety and avoid unauthorized operation of equipment. Where necessary to preclude inadvertent bypassing of inspections or tests, or to preclude inadvertent operation, these measures require the inspection, test or operating status be verified before release, fabrication, receipt, installation, test or use. These measures also establish the necessary authorities and controls for the application and removal of status indicators or labels.

14.1 NQA-1-1994 Commitment

In establishing measures for control of inspection, test and operating status, SNC commits to compliance with NQA-1-1994, Basic Requirement 14.

SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

SNC has established the necessary measures and governing procedures to control items, including services, which do not conform to specified requirements to prevent inadvertent installation or use. Controls provide for identification, documentation, evaluation, segregation when practical, and disposition of nonconforming items, and for notification to affected organizations. These controls require that an individual discovering a nonconforming condition to identify, describe, and document the nonconformance in accordance with Section 16, Corrective Action, of this NDQAM. Controls are provided to address conditional release of nonconforming items for use on an at risk basis prior to resolution and disposition of the nonconformance, including maintaining identification of the item and documenting the basis for such release. Conditional release of nonconforming items for installation requires the approval of the designated management. Nonconformances are corrected or resolved prior to depending on the item to perform its intended safety function. Nonconformances are evaluated for impact on operability of quality structures, systems, and components to assure that the final condition does not adversely affect safety, operation, or maintenance of the item or service. Nonconformances to design requirements dispositioned repair or use-as-is, shall be subject to design control measures commensurate with those applied to the original design. Nonconformance dispositions are reviewed for adequacy, analysis of quality trends, and reports provided to the designated management. Significant trends are reported to management in accordance with SNC procedures, regulatory requirements, and industry standards.

15.1 NQA-1-1994 Commitment

In establishing measures for nonconforming materials, parts, or components, SNC commits to compliance with NQA-1-1994, Basic Requirement 15, and Supplement 15S-1.

SECTION 16 CORRECTIVE ACTION

SNC has established the necessary measures and governing procedures to promptly identify, control, document, classify, and correct conditions adverse to quality. These procedures apply to all Nuclear Development activities. SNC procedures assure that corrective action is documented and initiated following the determination of a condition adverse to quality in accordance with regulatory guidance and applicable quality standards. When complex issues arise where it cannot be readily determined if a condition adverse to quality exists, SNC documents establish the requirements for documentation and timely evaluation of the issue. Results of evaluations of conditions adverse to quality are analyzed to identify trends. Significant conditions adverse to quality and significant adverse trends are documented and reported to responsible management.

16.1 Authority to Stop Work

Quality assurance and inspection personnel have the authority, and the responsibility, to stop work in progress which is not being done in accordance with approved procedures or where safety or SSC integrity may be jeopardized. This extends to off-site work performed by suppliers furnishing safety-related materials and services to SNC.

16.2 10 CFR Part 21 Reporting Program

SNC has in-place the necessary measures and governing procedures that implement a program to identify, evaluate and report defects and non-compliances in accordance with 10 CFR Part 21. Such a reporting program applies to safety-related activities and services performed by SNC and/or SNC suppliers / sub-suppliers providing input to the ESP and COL application development.

16.3 10 CFR 50.55(e) Reporting Program

SNC will establish the necessary measures and governing procedures that implement a reporting program which conforms to the requirements of 10 CFR 50.55(e). Such a reporting program will be in-place when SNC applies for a COL.

16.4 NQA-1-1994 Commitment

In establishing provisions for corrective action, SNC commits to compliance with NQA-1-1994, Basic Requirement 16.

SECTION 17 QUALITY ASSURANCE RECORDS

SNC has established the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting quality are developed, reviewed, approved, issued, used, and revised to reflect completed work. The provisions of such procedures establish the scope of the records retention program for SNC and include requirements for records administration, including receipt, preservation, retention, storage, safekeeping, retrieval, and final disposition.

17.1 Record Retention

Records of activities for design, engineering, procurement, manufacturing, construction, inspection and test, installation, pre-operation, startup and audits include the appropriate content requirements of NQA-1-1994, Parts I and II. Such records and their retention times are based on Regulatory Position C.2, Table 1, of Regulatory Guide 1.28, Revision 3. This table addresses design, construction, and initial start-up records. In all cases where state, local, or other agencies have more restrictive requirements for record retention, those requirements will be met.

17.2 Electronic Records

When using electronic records storage and retrieval systems, SNC complies with NRC guidance in RIS 2000-18, October 2000, “Guidance on Managing Quality Assurance Records in Electronic Media” including NIRMA guidelines; TG 11-1998, TG15-1998, TG16-1998, and TG21-1998. SNC will also meet the NRC Regulatory Position C.2 of Regulatory Guide 1.28, Revision 3, August 1985 except that the reference to ASME NQA-1 will be to the 1994 edition.

17.3 NQA-1-1994 Commitment / Exceptions

In establishing provisions for records, SNC commits to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 17S-1
  - Supplement 17S-1, section 4.2(b) requires records to be firmly attached in binders or placed in folders or envelopes for storage in steel file cabinets or on shelving in containers. For hard-copy records maintained by SNC, the records are suitably stored in steel file cabinets or on shelving in containers, except that methods other than binders, folders or envelopes may be used to organize the records for storage.

SECTION 18 AUDITS

SNC has established the necessary measures and governing procedures to implement audits to verify that activities covered by this NDQAM are performed in conformance with the requirements established. The audit programs are themselves reviewed for effectiveness as a part of the overall audit process.

18.1 Performance of Audits

Internal audits of selected aspects of licensing, design and construction phase activities are performed with a frequency commensurate with safety significance and in a manner which assures that audits of safety-related activities are completed. During the early portions of nuclear development activities, audits will focus on areas including, but not limited to, site investigation, procurement, and corrective action. The audits are scheduled on a formal preplanned audit schedule. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities. Additional audits may be performed as deemed necessary by management. The scope of the audit is determined by the quality status and safety importance of the activities being performed. These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with preplanned and approved audit plans or checklists, under the direction of the QA Manager.

The Quality Assurance organization is responsible for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of programs and procedures, and to determine if they are meaningful and comply with the overall Quality Assurance program. External audits determine the adequacy of supplier and contractor Quality Assurance programs.

The results of each audit are reported in writing to the Senior Vice President Nuclear Development, the Nuclear Technology Startup Director, the Vogtle Deployment Director, and the Vogtle Licensing Manager as appropriate. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

Management responds to all audit findings and initiates corrective action where indicated. Where corrective action measures are indicated, documented follow-up of applicable areas through inspections, review, re-audits, or other appropriate means is conducted to verify implementation of assigned corrective action.

Audit schedule changes reflecting more frequent audits are required by one or more of the following conditions:

- When significant changes are made in functional areas of the NDQAP, such as significant reorganization or procedure revisions.
- When there is evidence that the performance or reliability of safety-related items is in jeopardy due to deficiencies or nonconformances in the NDQAP.
- When a systematic, independent assessment of NDQAP effectiveness is necessary.
- When it is necessary to verify implementation of required corrective actions.

18.2 NQA-1-1994 Commitment

In establishing the independent audit program, SNC commits to compliance with NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.

PART III REGULATORY COMMITMENTS

NRC Regulatory Guides and Quality Assurance Standards

This section identifies the NRC Regulatory Guides and the other quality assurance standards which have been selected to supplement and support the SNC NDQAP. Southern Nuclear commits to compliance with these standards to the extent described herein. Commitment to a particular Regulatory Guide or other QA standard does not constitute a commitment to the Regulatory Guides or QA standards that may be referenced therein.

Regulatory Guides:

Regulatory Guide 1.8, Revision 2, April 1987 – Qualification and Training of Personnel for Nuclear Power Plants

Regulatory Guide 1.8 defines the requirements for selection and training of nuclear power plant operations phase personnel.

Southern Nuclear meets the requirement of this regulatory guide for the selection and training of nuclear power plant personnel.

Personnel who complete an accredited program which has been endorsed by the NRC shall meet the requirements of the accredited program in lieu of other guidance given in the guide.

Regulatory Guide 1.26, Revision 3, February 1976 – Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants

Regulatory Guide 1.26 defines classification of systems and components.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1, C.1.a, C.1.b, and C.3. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

Regulatory Guide 1.28, Revision 3, August, 1985 – Quality Assurance Program Requirements (Design and Construction)

Southern Nuclear meets the requirements of this regulatory guide for Construction Activities conducted by Southern Nuclear, except that ASME NQA-1-1994 edition (as modified by the exceptions to NQA-1-1994 as shown in this NDQAM) will be used in place of ANSI/ASME NQA-1-1983 and the ANSI/ASME NQA-1a-1983 Addenda.

Regulatory Guide 1.29, Revision 3, September 1978 – Seismic Design Classification

Regulatory Guide 1.29 defines systems required to withstand a safe shutdown earthquake (SSE).

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1.d, C.1.g, and C.1.n. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

Regulatory Guide 1.54, Revision 1, July 2000- Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants

Regulatory Guide 1.54 defines requirements and guidelines for protective coatings applied to various materials.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND with the exception of Criteria C.1 and C.2. Refer to the Westinghouse AP1000 Design Control Document, Appendix 1A for a detailed discussion of these exceptions.

Regulatory Guide 1.97, Revision 3, May 1983 – Instrumentation for Light-Water Nuclear Power Plants to Assess Plant and Environs Condition During and Following an Accident

Regulatory Guide 1.97 describes an acceptable method to provide instrumentation to monitor plant variables and systems during and following an accident.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.143, Revision 2, November 2001 – Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants

Regulatory Guide 1.143 furnishes design guidance acceptable to the NRC regarding seismic and quality group classification and quality assurance provisions for radioactive waste management SSCs.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.152, Revision 2, January 2006 - Criteria for Digital Computers in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.152 describes a method acceptable to the NRC regarding use of digital computers in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide for ND.

Regulatory Guide 1.168, Revision 1, February 2004 - Verification, Validation, Reviews, and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.168 describes acceptable methods regarding verification and validation; reviews; and audits of digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.169, Revision 0, September 1997 - Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.169 describes acceptable methods regarding configuration management plans for digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.170, Revision 0, September 1997 - Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.170 describes acceptable methods regarding software test documentation for digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.171, Revision 0, September 1997 - Software Unit Testing for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.171 describes acceptable methods regarding software unit testing for digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.172, Revision 0, September 1997 - Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.172 describes acceptable software requirements specifications for digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.173, Revision 0, September 1997 - Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants

Regulatory Guide 1.173 describes acceptable methods regarding development of software life cycle processes for digital computer software used in safety systems.

SNC commits to the applicable regulatory position guidance provided in this regulatory guide.

Standards:

ASME NQA-1-1994 Edition – Quality Assurance Requirements for Nuclear Facility Applications

SNC commits to NQA-1-1994, Parts I and II, as described in the foregoing sections of this manual.

Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guides (TGs)

SNC commits to NIRMA TGs as described in section 17 of this manual.

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