

**Southern Nuclear  
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40 Inverness Center Parkway  
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**JUL 16 2010**

Docket Nos.: 52-025  
52-026

ND-10-1389  
10 CFR 51.50

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4 Combined License Application  
New and Significant Information Evaluation for the  
Transportation of Backfill from an Additional Offsite Source

Ladies and Gentlemen:

On March 28, 2008, Southern Nuclear Operating Company (SNC) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) requesting combined licenses (COLs) for two AP1000 advanced passive pressurized water reactors designated Vogtle Electric Generating Plant (VEGP) Units 3 and 4. Subsequently, on September 23, 2009, SNC submitted Revision 1 to COL Application Part 3, "Applicant's Environmental Report [ER] – Combined License Stage."

SNC letter ND-10-0526, dated March 12, 2010, contained a new and significant evaluation for transporting backfill from an offsite borrow source located approximately fifty miles from the VEGP site. Subsequent to the March 12, 2010 submittal, SNC identified an additional potential offsite borrow source from a location approximately sixty miles from the VEGP site. The enclosure to this letter provides the new and significant evaluation for transporting backfill by truck from the new location using two potential routes and utilizing multiple roads. SNC has not made a final decision on using an offsite source for backfill, nor have we determined that backfill material onsite is insufficient to complete backfill activities. The schedule for determination if an offsite source is needed has not been developed and to prevent unnecessary delays in the issuance of the Supplemental Environmental Impact Statement (SEIS) for the COL, SNC requests the environmental impacts associated with transporting backfill material from offsite sources be included in the COL draft SEIS as an optional activity.

This submittal contains no restricted data or national defense information requiring separation in accordance with 10 CFR 50.33(j).

The SNC licensing contacts for this application are D. L. Fulton at (205) 992-7536 or W. A. Sparkman at (205) 992-5061.

DO92  
NRO

Mr. C. R. Pierce states he is the AP1000 Licensing Manager of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

*C. R. Pierce*

C. R. Pierce

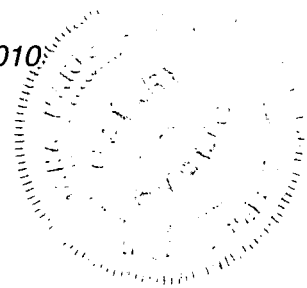
Sworn to and subscribed before me this 16<sup>th</sup> day of July, 2010.

Notary Public: Dana Marie Williams

My commission expires: 12/29/2010

CRP/DLF

Enclosure: VEGP Units 3 and 4 - New and Significant Information Evaluation Involving  
Transportation of Backfill from an Additional Offsite Source



cc: Southern Nuclear Operating Company

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**Southern Nuclear Operating Company**

**ND-10-1389**

**Enclosure**


**VEGP Units 3 and 4**

**New and Significant Information Evaluation**

**Involving**

**Transportation of Backfill from an Additional Offsite Source**

**Note:** The enclosed document is four (4) pages in length.

Southern Nuclear Operating Company		
	Form	Guidance For New And Significant Information ND-EV-VNP-001-F01 Version 1.0 Page 1 of 4

## VEGP EIS KEY INPUTS OR ASSUMPTIONS

### Traffic Analysis for Backfill

EIS Section	Input Number	Key Input or Assumption	New Information (Yes/No)	Significant (Yes/No)	Rationale
NA	PS 3a	<p>Evaluate the acceptability of the potential procurement of Category 1 and/or 2 fill material from an offsite supplier with delivery by truck to the site. Distance from site to supplier will be approximately 60 miles from the VEGP site. Material will be obtained from SP and SP-SM sand deposits containing the same general geological properties as the upper sands onsite and a professional geologist will be used to characterize the similarity of the borrow source to the onsite Category 1 and 2 borrow sources. The material will be tested using commercial grade lab analysis and geotechnical</p>	Yes	No	<p><i>SNC is exploring an offsite borrow source in the event sufficient quantities of Category 1 and/or 2 material are not available onsite. The offsite backfill will come from an established permitted quarry. Accordingly, any environmental concerns regarding the operation of the quarry are the responsibility of the appropriate regulatory agencies and were addressed during the quarry's permitting process. Environmental impacts associated with the operation of the quarry are not subject to the NEPA process for Vogtle Units 3 &amp; 4 and thus not included in this evaluation. Offsite backfill delivery environmental impacts were not evaluated in the ESP FEIS and the impact of 250 trucks per day on local traffic is relevant to the project under NEPA. SNC has analyzed transportation impacts to incorporate delivery of offsite backfill from a quarry in Aiken County, South Carolina, approximately 60 miles from the VEGP site.</i></p> <p><i>SNC used the following assumptions in the analysis of transporting backfill from the quarry in Aiken County:</i></p> <ol style="list-style-type: none"> <li><i>The backfill will be delivered during the 10-hour construction day shift and consist of two hundred fifty (250) truck loads per day (equivalent to 25 trips per hour). The South Carolina Highway Design Manual was not available for review. However, GDOT assesses trucks of the size used to deliver the backfill as 3.5 vehicle equivalents so this value was used for South Carolina roads as well.</i></li> <li><i>The location of the quarry would be within 60 miles of VEGP. SNC evaluated the transportation impacts on two routes.</i> <p><i>The first route assumed that trucks would travel south on SC 19 from Reynolds Pond Road to SC 118, and then west to US 1. The trucks would then travel west on US 1 to I-520, and then to Ga SR 56, to GA SR 23. I-520 is a new road and traffic counts are not available, but it is a 4-lane, limited access, divided highway and SNC assumes that I-520 traffic capacity is equivalent to I-20 traffic capacity. Leaving VEGP trucks would use River Road to SR 56 spur to SR 56 going north to I-520. The maximum length of time for the backfill deliveries is expected to be seven months. (SC 2009 and GDOT 2009a)</i></p> <p><i>The second route assumed that trucks would travel north on SC 19 from Reynolds Pond Road to I-20, and then west to I-520, and then to Ga SR 56, to GA SR 23. I-520 is a new road and traffic counts are not available, but it is a 4-lane, limited access, divided highway and SNC assumes that I-520 traffic capacity is equivalent to I-20 traffic capacity. Leaving VEGP, trucks would use River Road to SR 56 spur to SR 56 going north to I-520. The maximum length of time for the backfill deliveries is expected to be seven months. (SC 2009 and GDOT 2009a)</i></p> </li> <li><i>GADOT considers the ideal capacity of a 4-lane roadway as 2,000 vehicles per lane per hour, and the ideal capacity of a 2-lane roadway as 1700 vehicles per lane per hour (GDOT 2009b). South</i></li> </ol>

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Form

Guidance For New And Significant Information

ND-EV-VNP-001-F01  
Version 1.0  
Page 2 of 4

characterization prior to delivery to a segregated stockpile onsite.

It is conservatively estimated that roughly 800,000 cubic yards of material may be required from this offsite source. Based on the estimated quantity and a maximum daily delivery of 5000 cubic yards, this activity could require seven months to complete. Delivery of 5000 cubic yards per day would translate into roughly 250 truck loads per day at 20 cubic yards per truck. It is estimated that 50 trucks would be required to make these deliveries.

Carolina capacity was not available, so Georgia capacity was used as a surrogate.

4. Backfill would not be delivered during construction shift change, but would be delivered during existing units' workforce shift change. Because very few of the VEGP workforce live or are expected to live in South Carolina, shift traffic was not a component of the analysis for South Carolina roads.
5. 2008 annual average daily traffic (AADT) counts were the most recent available (GDOT 2010, SC 2009).

SNC analyzed traffic impacts from the anticipated volume of backfill moved in a single shift or 5,000 cubic yards:

The following table evaluates 5,000 cubic yards of backfill per day delivered from a quarry in Aiken County, South Carolina, approximately 60 miles from the VEGP site.

Road	2008 AADT 2-way counts <sup>1</sup>	AADT 2-way counts (per hr in a 10 hr shift) <sup>2</sup>	Vehicles per Shift Change (from ESP EIS) <sup>4</sup>	Shift change (% direction factor) <sup>3</sup> & <sup>4</sup>	Trucks as vehicle equivalents/ hr	Traffic count/hr during non-shift times	Traffic count/shift change	Roadway two-way design capacity/hr*	trucks/hour=	3.5 vehicle equivalents/hr
Route 1: HWY 19 to US 1 to I-520 to SR 56										
SC Hwy 19 (2 lane)	11,300	1,130	N/A	N/A	175	1,305	N/A	3,400	50	175
SC 118 (2 lane)	8,900	890	N/A	N/A	175	1,065	N/A	3,400	50	175
US 1 (4 lane)	26,100	2,610	N/A	N/A	175	2,785	N/A	8,000	50	175
I-520 (4 lane) <sup>5</sup>	28,800	2,880	N/A	N/A	175	3,055	N/A	8,000	50	175
SR 56 (4 lane)	29,180	2,918	1,200	792	175	3,093	3,885	8,000	50	175
SR 56 spur (2 lane)	2,210	221	1,200	792	87.5	308.5	879.5	3,400	25	87.5
SR 23 (2 lane)	2,350	235	1,200	408	87.5	322.5	495.5	3,400	25	87.5

# Southern Nuclear Operating Company



Form

Guidance For New And Significant Information

ND-EV-VNP-001-F01  
Version 1.0  
Page 3 of 4

## Route 2: HWY 19 to I-20 to I-520 to SR56

SC Hwy 19 (2 lane)	11,300	1,130	N/A	N/A	175	1,305	N/A	3,400	50	175
I-20 (4 lane)	28,800	2,880	N/A	N/A	175	3,055	N/A	8,000	50	175
I-520 (4 lane) <sup>5</sup>	28,800	2,880	N/A	N/A	175	3,055	N/A	8,000	50	175
SR 56 (4 lane)	29,180	2,918	1,200	792	175	3,093	3,885	8,000	50	175
SR 56 spur (2 lane)	2,210	221	1,200	792	87.5	308.5	879.5	3,400	25	87.5
SR 23 (2 lane)	2,350	235	1,200	408	87.5	322.5	495.5	3,400	25	87.5

\*The ideal design capacity of a two lane roadway is 1,700 vehicles per hour (vph) in each direction. The ideal design capacity of a multi-lane roadway is 2,000 vph per lane. South Carolina Design Manual not available so roadway capacity for South Carolina not known. Used Georgia design capacity as surrogate.


Reference: GDOT Design Policy Manual ver. 2.0 Revised 05/21/2009, p 13-19

1. If more than one traffic station existed on a roadway along the proposed route, the station with the higher count was used.
2. Conservatively assumed that all traffic recorded in 24 hours was recorded during the 10-hour shift
3. Based on county residence information of existing workforce, 66 % live north or east of the site (and would use Rt 56), and 34% live south or west (and would use Rt 23)
4. Shift change not relevant to South Carolina Roads.
5. I-520 is a new road and traffic counts are not available, but it is a 4-lane, limited access divided highway and SNC assumes that I-520 traffic capacity is equivalent to I-20 traffic capacity.

5,000 cy/day (250 trucks/day) = 25 trucks per hour one way or 50 trucks per hour two ways

*By comparing the traffic estimates in the columns titled "Traffic count/hr during non-shift times" and "Traffic counts/shift change" with the column titled "Roadway two-way design capacity/hr" (for the Georgia analyses), and the column titled "Traffic count/hr" with the column titled "Roadway two-way design capacity/hr" (for the South Carolina analyses), one can determine that the additional traffic due to the delivery of backfill to VEGP will not exceed road capacity in either state. Impacts to traffic due to the addition of 250 trucks per day delivering backfill to VEGP would be SMALL (not detectable or so minor as to not destabilize nor noticeably alter important attributes of the resource) and would not warrant mitigation beyond that described here. People traveling on SR 56 spur or SR 23, SC 19 or SC 118 may notice the increase in truck traffic, but it would*



Southern Nuclear Operating Company		
	Form	Guidance For New And Significant Information ND-EV-VNP-001-F01 Version 1.0 Page 4 of 4

				<p>not impede their travel. Additionally the impact would be temporary. SNC estimates it will take approximately seven months to deliver the backfill to the site.</p> <p>SNC will minimize impacts by specifying that incoming and outgoing trucks use different routes near the site (inbound on SR 23 and outbound on SR 56 spur) as evaluated in the analysis.</p> <p>As noted in the ESP FEIS, Section 4.5.1.3, some roads used for construction may need minor repairs and upgrades to allow safe access to the plant. At this time, SNC does not anticipate the need for these repairs or upgrades.</p> <p>Based on the evaluation, the average 25 truck loads per hour are well within the increased traffic estimates evaluated in the ESP FEIS at peak construction. The ESP FEIS evaluated peak construction rates of 2,950 vehicles per hour including traffic associated with Vogtle Units 1 and 2. Of the 2,950 vehicles, 1,750 vehicles represent the increased traffic at peak construction. The truck delivery of backfill material will be complete prior to the peak construction workforce period such that the impacts of these events are not additive. As such, the impacts associated with additional truck deliveries of backfill material are bounded by the ESP FEIS.</p>
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References:

GDOT 2009a. Functional Classification Maps, Burke County and Richmond County, Georgia. October.

GDOT 2009b. GDOT Design Policy Manual, ver. 2, Revised 5/21/2009.

GDOT 2010. Georgia Department of Transportation. 2010. Annual Average Daily Traffic Reports by County and Year – 2008 reports. Available at [www.dot.state.ga.us/statistics/TrafficDATA/Pagers/TrafficCounts.aspx](http://www.dot.state.ga.us/statistics/TrafficDATA/Pagers/TrafficCounts.aspx) . Accessed February 23, 2010.

SC 2009. South Carolina Department of Transportation. 2009. Annual Average Daily Traffic by County and Year – 2008 reports. Available at [www.dot.state.sc.us/getting/aadt.asp](http://www.dot.state.sc.us/getting/aadt.asp). Accessed July 8, 2010.

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