

## Vogle PEmails

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**From:** Mark Notich  
**Sent:** Monday, June 30, 2008 2:08 PM  
**To:** Vogtle PEmails  
**Subject:** FW: SNC Letter AR-08-0997 transmitting VEGP ESP Response to NRC Questions from April 23, 2008 Environmental Conference Call  
**Attachments:** AR-08-0997 Environ RAI Responses.pdf

-----Original Message-----

From: Mark Notich  
Sent: Monday, June 30, 2008 7:28 AM  
To: 'Sackschewsky, Michael R'; 'Leigh, Kimberly D'  
Subject: FW: SNC Letter AR-08-0997 transmitting VEGP ESP Response to NRC Questions from April 23, 2008 Environmental Conference Call

ML# on the way....

mark

-----Original Message-----

From: Williams, Dana M. [mailto:DANAWILL@SOUTHERNCO.COM]  
Sent: Thursday, June 26, 2008 4:24 PM  
To: Christian Araguas; Mark Notich  
Subject: SNC Letter AR-08-0997 transmitting VEGP ESP Response to NRC Questions from April 23, 2008 Environmental Conference Call

> An electronic copy of Southern Nuclear's letter, AR-08-0997, dated  
> June 26,  
> 2008 is attached. In addition, a hard copy has been transmitted to the  
> NRC Document Control desk via FedEx.  
>  
> <<AR-08-0997 Environ RAI Responses.pdf>>  
>  
> Thank you,  
>  
> Dana Williams  
> Southern Nuclear Operating Company  
> Nuclear Development  
> P 205.992.5934  
> F 205.992.5296  
>  
>

**Hearing Identifier:** Vogtle\_Public\_EX  
**Email Number:** 60

**Mail Envelope Properties** (21707AE0BEC04F4BB5502E2483D69D6A19E6E7CE8F)

**Subject:** FW: SNC Letter AR-08-0997 transmitting VEGP ESP Response to NRC Questions from April 23, 2008 Environmental Conference Call  
**Sent Date:** 6/30/2008 2:07:42 PM  
**Received Date:** 6/30/2008 2:07:43 PM  
**From:** Mark Notich

**Created By:** Mark.Notich@nrc.gov

**Recipients:**  
"Vogtle PEmails" <Vogtle.PEmails@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR02.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	989	6/30/2008 2:07:43 PM
AR-08-0997 Environ RAI Responses.pdf		207436

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

**Moanica M. Caston**  
Vice President,  
General Counsel and  
Corporate Secretary

**Southern Nuclear  
Operating Company, Inc.**  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201-1295  
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JUN 26 2008

Docket No.: 52-011

AR-08-0997

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

Southern Nuclear Operating Company  
Vogtle Early Site Permit Application  
Response to NRC Questions from April 23, 2008 Environmental Conference Call

Ladies and Gentlemen:

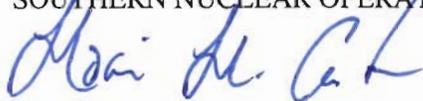
On April 23, 2008, a conference call was held between Southern Nuclear Operating Company (SNC) and the NRC staff to discuss SNC responses to NRC Requests for Additional Information (RAIs) contained in SNC letter AR-08-0520, dated April 4, 2008. The NRC staff and contractor, Pacific Northwest National Laboratories (PNNL) asked specific questions or requested clarification on 7 of the original 23 RAI responses. SNC verbally responded to the questions/clarifications during the call and provided a response by email at NRC request to support schedule needs. NRC requested the information be submitted under oath and affirmation to support documentation for the Final Environmental Impact Statement (FEIS). Please find enclosed the SNC response to NRC questions/clarifications from the April 23, 2008 conference call.

If you have questions or require additional information, please contact T.C. Moorer at (205) 992-5807.

Ms. M. M. Caston states she is Vice President and General Counsel of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of her knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



Moanica M. Caston

Sworn to and subscribed before me this 26<sup>th</sup> day of June, 2008

Notary Public: Dana M. Williams

My commission expires: 12/29/2010

MMC/TCM/dmw

Enclosure: Response to NRC Questions From April 23, 2008 Environmental Conference Call

cc: Southern Nuclear Operating Company

Mr. J. B. Beasley, Jr., President and CEO (w/o enclosure)  
Mr. J. T. Gasser, Executive Vice President, Nuclear Operations (w/o enclosure)  
Mr. J. A. (Buzz) Miller, Senior Vice President, Nuclear Development (w/o enclosure)  
Mr. T. E. Tynan, Vice President - Vogtle (w/o enclosure)  
Mr. D. M. Lloyd, Vogtle Deployment Director (w/o enclosure)  
Mr. C. R. Pierce, Vogtle Development Licensing Manager (w/o enclosure)  
Mr. T. C. Moorer, Environmental Project Manager  
Document Services RTYPE: AR01  
File AR.01.01.06

Nuclear Regulatory Commission

Mr. E. J. Leeds, Director of Office of Nuclear Reactor Regulation (w/o enclosure)  
Mr. L. A. Reyes, Regional Administrator (w/o enclosure)  
Mr. M. R. Johnson, Director of Office of New Reactors (w/o enclosure)  
Ms. S. M. Coffin, AP1000 Manager of New Reactors (w/o enclosure)  
Mr. C. J. Araguas, Project Manager of New Reactors  
Mr. J. E. Lyons, Director of Site and Environmental Review (w/o enclosure)  
Mr. W.F. Burton, Chief – Environmental Technical Support (w/o enclosure)  
Mr. M. D. Notich, Environmental Project Manager  
Mr. G. J. McCoy, Senior Resident Inspector of VEGP (w/o enclosure)

Georgia Power Company

Mr. O. C. Harper, Vice President, Resource Planning and Nuclear Development (w/o enclosure)

Oglethorpe Power Corporation

Mr. M. W. Price, Chief Operating Officer (w/o enclosure)

Municipal Electric Authority of Georgia

Mr. C. B. Manning, Senior Vice President and Chief Operating Officer (w/o enclosure)

Dalton Utilities

Mr. D. Cope, President and Chief Executive Officer (w/o enclosure)

Bechtel Power Corporation

Mr. J. S. Prebula, Project Engineer (w/o enclosure)  
Mr. R. W. Prunty, Licensing Engineer

Tetra Tech NUS, Inc.

Ms. K. K. Patterson, Project Manager

**Southern Nuclear Operating Company**

**AR-08-0997**

**Enclosure**

**Response to NRC Questions**

**From April 23, 2008 Environmental Conference Call**

**NOTE:** This enclosure contains an 8-page document.

**RAI # 1**      **Cooling Tower Drift Rate**

Response:      SNC confirmed that the 0.2 #/acre/month drift rate is for one cooling tower. The DEIS identified 7.2 #/acre/month based on the original cooling tower flow. The drift rate increase for single unit operation of 0.2 #/acre/month multiplied by 2 results in a 0.4 #/acre/month drift rate increase for two unit operation. The total drift rate for two unit operation under the new cooling tower flow conditions is 7.6 #/acre/month. This value is well below the 9 to 18 #/acre/month threshold and remains bounded.

**RAI # 2**      **Shape Files and GIS Layers; Clarifications of Figure 1**

Response:      SNC agreed to provide all shape files and GIS layers currently available to support revision to Figures 2-1, 2-13, and 2-14 in the draft EIS. The following corrections to the figures are also noted. In Figure 1 provided in SNC's response to the March 6, 2008 RAIs, disturbed areas are noted for both the Thompson line and a future line. The Thompson line will run to the north of and parallel to the existing 500 kV Scherer line onsite and will turn north towards the existing Thompson substation shortly after it exits the site. For planning purposes only, GPC has designated the area between the existing Scherer line and the proposed Thompson line as a future expansion corridor. Since this corridor lies between the existing and proposed corridors, SNC conservatively designated the area as potentially disturbed and included it in the disturbed area evaluation. There are no plans to construct the future line. If, in the future, as a decision is made to add an additional transmission line, the environmental impacts associated with construction and operation of that line will be evaluated at that time.

In the referenced conference call, NRC indicated that the Simulator Building was not shown in Figure 1. The Simulator Building is shown in Figure 1. It is located in Sector A-2 to the left of the drawing title block.

SNC also confirmed that Figure 1 readability may be significantly improved by printing on a larger paper size. The size and format provided in the SNC April 4, 2008 response letter was kept small to facilitate handling.

SNC's contractors Tetra-Tech and Bechtel prepared the electronic files. The files were placed on the SNC FTP site and a link provided to NRC to facilitate access due to the size of the files.

**RAIs # 3 & 8**      **Southeastern Pocket Gopher**

Response:      SNC indicated in the April 4, 2008 response to the RAIs that the approximately 10 acre change in disturbed acreage did not impact any of the Threatened and Endangered Species discussed in the ER and subsequent draft EIS. The disturbed areas were included in the original scope of the Threatened and Endangered Species assessment performed by Third Rock for the Vogtle ER, but were not surveyed because the habitat was determined to be of extremely poor quality and not conducive to use by the Threatened and Endangered Species identified in vicinity of the Vogtle site. In the response to the March 6, 2008 RAIs, SNC indicated that the proposed changes in acreage were reviewed against the information in the Third Rock Report used in the ER. SNC considered the

southeastern pocket gopher habitat in reaching the conclusion stated in the response that the changes in disturbed acreage did not result in any potential impact to Threatened and Endangered Species. This conclusion also holds for the state protected southeastern pocket gopher.

On April 28, 2008, NRC personnel Mark Notich, Mike Masnik, Jan Mazza, and Patrick Moulding were shown the area north of the Vogtle site identified by Georgia EPD as habitat for the southeastern pocket gopher. This habitat type, consisting of loose sand substrate with predominantly pine timber, was not observed in any of the disturbed areas including areas impacted by the most recent changes in acreage.

**RAI # 4**      **Debris Basin**

Response:      SNC confirmed that the debris basin noted in Figure 1 would not be located in a designated wetland area.

**RAI # 6**      **Borrow Area Shape Files**

Response:      SNC will include the 31 acre borrow area in the requested shape file information. The borrow area is shown in SNC Figure 1.

**RAI # 11**      **Revisions to Table 3.3-1**

Response:      A revised table based on the original Table 3.3-1 is included below. Please note that this table contains corrected information and was included as Table 3.2-2 in the Vogtle Electric Generating Plant Units 3 and 4 COLA. The COLA table contains an error that is identified in the notes to the table below. The error will be corrected during the first revision of the COLA ER.

**Table 3.2-2 Revised Plant Groundwater Estimates and Plant Effluent Streams for Two Units**

Stream Description	Normal Case <sup>a,b</sup> gpm		Maximum Case <sup>a,b</sup> gpm		Comments
	ESPA	COLA	ESPA	COLA	
<b>Groundwater (Well) Streams:</b>					
<b>Plant Well Water Demand</b>	752	752	3140	2797	
Well Water for Service Water System Makeup	537	537	2353	1600	
• Service Water System Consumptive Use	403	403	1177	1100*	
-Service Water System Evaporation	402	402	1176	1099*	
-Service Water System Drift	1	1	1	1*	
• Service Water System Blowdown	134	134	1176	500	
Well Water for Power Plant Make-up/ Use	215	215	787	1197	
• Demineralized Water System Feed	150	150	600	1080	
-Plant System Make-up/ Processes	109	109	519	999*	
-Misc. Consumptive Use	41	41	81	81*	
• Potable Water Feed	42	42	140	70	
• Fire Water System	10	10	12	12*	
• Misc. Well Water Users	13	13	35	35*	

**Table 3.2-2 Revised Plant Groundwater Estimates and Plant Effluent Streams for Two Units  
(Continued)**

Stream Description	Normal Case <sup>a,b</sup> gpm		Maximum Case <sup>a,b</sup> gpm		Comments
	ESPA	COLA	ESPA	COLA	
<b>Plant Effluent Streams</b>					
Plant Effluent Discharge to River	9608	9608	30,761	31,695	
• Blowdown Sump Discharge	9605	9605	30,561	31,425	C
- Wastewater Retention Basin Discharge	171	171	505	435	C
- Miscellaneous Low Volume Waste	129	129	365	365	
- Treated Sanitary Waste	42	42	140	70	C
- Service Water System Blowdown	134	134	1176	500	D
- Circulating Water / Turbine Plant Cooling Water System Blowdown	9,300*	9,700	28,880	30,560	D
- Start-up Pond Discharge	0	0	0	0	E
• Treated Liquid Radwaste	3	3	200		F

NOTES:

- a The flow rate values are for two AP1000 units.
- b These flows are not necessarily concurrent.
- c Per SNC the sanitary waste from Units 3 and 4 will be routed to the existing Unit 1 and 2 sewage treatment plant and will be discharged via the existing Unit 1 and 2 outfall. (No change in value, change in discharge point) Because of this the 70 gpm is not included in the “Blowdown Sump Discharge” figure but is included in the “Final Effluent Discharge to the River.”
- d For the normal case, the cooling towers are assumed operating at four cycles of concentration. For the service water cooling tower (maximum case), both unit towers are assumed operating at two cycles of concentration. For the main condenser / turbine auxiliary cooling water tower (maximum case), both towers are assumed operating at two cycles of concentration. Flows are determined by weather conditions water chemistry, river conditions (circulating water / turbine plant cooling water system only) and operator discretion.
- e Start-up flushes and start-up pond discharge would occur only during the initial plant start-up phase and potentially after unit outages when system flushes are required.
- f The short-term liquid waste discharge flow rate may be up to 200 gpm. However, given the waste liquid activity level, the discharge rate must be controlled to be compatible with the available dilution (cooling tower blowdown) flow.
- \* Values either not included or in error in COLA Rev. 0 and will be revised in COLA Rev. 1

**RAI # 16**      **Construction Work Force Estimates**

Response:      Section 3.10 of the Vogtle ER describes the process utilized to determine the composition of the construction workforce. The original estimates identified a maximum of 4400 workers. This estimate was based on a factor of 20.5 job hours per kilowatt of generating capacity. Since the ER was submitted in August 2006, SNC has been working through NUSTART and most recently with Shaw and Westinghouse during negotiation of the Engineering, Procurement, and Construction (EPC) contract to refine this estimate. Currently, SNC believes that the construction peak work force will be reduced from 4400 to approximately 3500 workers. Further, SNC believes that this reduction in workforce will be uniformly distributed across the entire work period at essentially the same reduction ratio observed at the peak (e.g., ~20 % reduction). The chart shown in Figure 3.10-1 of the ER shows the distribution of the workforce over the construction period. This chart could be adjusted by the reduction factor discussed above to determine the worker presence during any month of the construction process.

**RAI# 18**      **Overnight Capital Cost Estimate**

Response:      In the December 29, 2007 DEIS comments, SNC identified that the overnight cost projections provided in the ER were no longer bounding and that a range of \$2000 – 4000 per kW was more representative of the overnight pricing as it was currently understood. SNC signed an EPC contract with Shaw/Westinghouse on April 8, 2008, after many months of negotiations. The SNC COLA, submitted March 31, 2008 included a preliminary cost estimate. On May 7, 2008, Georgia Power issued a Press Release with cost information for Vogtle Electric Generating Plant Units 3 and 4. The cost listed in the Press Release was \$6.4 billion based on a GPC share of 45.7 %. Total cost was not directly listed, but can be determined by ratio as ~\$14 billion. This is not an “overnight capital cost”. For comparison purposes, SNC puts the overnight capital cost at approximately \$3200 – 3500 per kilowatt. SNC has confirmed that this cost remains within the cost range identified in SNC comments on the DEIS. The cost is somewhat higher than the previously identified cost, but is still within the range. The increase in cost should produce an increase in tax revenue, which is viewed as a positive socioeconomic benefit. A copy of the Press Release is provided on the following pages.

## **Georgia Power, PSC to continue review of nuclear proposal**

*Georgia Power announced today that it received no bids in response to its 2016-2017 base load capacity request for proposals (RFP). Two weeks ago, after it signed an Engineering, Procurement and Construction (EPC) contract with Westinghouse Electric Company LLC and The Shaw Group Inc.'s Power Group, Georgia Power announced that it would submit a nuclear self-build option for consideration. Georgia Public Service Commission (PSC) rules require market bids to be compared with self-build proposals, but no market bids were received.*

*The company's self-build nuclear proposal will be reviewed by the Georgia PSC's Independent Evaluator before the company submits a final recommendation to the Georgia PSC on August 1, 2008 for approval. A final certification decision is expected in March 2009.*

*If certified by the Georgia PSC and licensed by the Nuclear Regulatory Commission (NRC), the two Westinghouse AP1000 units, with a capacity of 1,100 megawatts each, would be constructed at the Vogtle Electric Generating Plant site near Waynesboro, Georgia and would be placed in service in 2016 and 2017, respectively.*

*Under the EPC contract, the Vogtle co-owners (Georgia Power, Oglethorpe Power, MEAG Power, and Dalton Utilities) will pay a purchase price that will be subject to certain price escalation and adjustments, as well as adjustments for change orders and performance bonuses. The estimated plant value to be placed in service also includes the financing costs for each co-owner, transmission and other costs that are the responsibility of the co-owners, and expected inflation costs.*

*Under the terms of a separate joint development agreement, the co-owners must finalize their ownership percentages by July 2, 2008 except for allowed changes, under certain limited circumstances, during the Georgia PSC certification process. Georgia Power's proportionate share of the estimated in-service cost of the two units, based on its current ownership interest of 45.7 percent, is approximately \$6.4 billion, subject to adjustments and performance bonuses under the EPC contract.*

*While the final rate impacts will be determined by the Georgia PSC, the company estimates the typical Georgia Power customer, using 1,000 kilowatt-hours a month, would see a base rate increase of approximately \$12 per month in 2018, when both units are fully operational. The rate impact is expected to decline over time.*

*"Demand for electricity continues to grow in the Southeast and in Georgia," said Mike Garrett, Georgia Power president and CEO. "While we will continue to increase our emphasis on energy efficiency and renewable energy sources, we must also add large-scale base load generation to meet growing energy needs. While nuclear power plants cost more to build, they now have lower fuel and operating costs than fossil fuel plants. Nuclear energy would add needed diversity to Georgia Power's fuel mix at a time when fossil fuel prices are increasing significantly."*

*"The company will work with the Georgia PSC's Independent Evaluator, Accion Group, to finalize information required for certification, including updated fossil fuel and generation technology costs," said Oscar Harper, Georgia Power's vice president of nuclear development and resource planning.*

*Georgia Power is the largest subsidiary of The Southern Company (NYSE: SO), one of the nation's largest generators of electricity. The company is an investor-owned, tax-paying utility with rates well below the national average. Georgia Power serves 2.3 million customers in all but four of Georgia's 159 counties.*

*Oglethorpe Power Corporation is a \$4.9 billion power supply cooperative serving 38 consumer-owned EMCs in Georgia. These EMCs provide retail electric service to approximately 4.1 million Georgians. Oglethorpe Power is the nation's largest electric cooperative in assets, annual kilowatt-hour sales, and ultimate consumers served.*

*The Municipal Electric Authority of Georgia (MEAG Power) is a public generation and transmission organization providing power to 49 Georgia communities with annual electric sales of \$721 million and over 10 million-megawatt hours of delivered energy in 2006.*

*Dalton Utilities has operated as a public utility since 1889 and provides potable water, electrical, natural gas and wastewater treatment services to approximately 65,000 customers in the City of Dalton and portions of Whitfield, Murray, Gordon, Catoosa and Floyd counties. In 2003, Dalton Utilities launched OptiLink and now provides broadband, cable TV, telephone and internet services to residential and business customers.*

*Southern Nuclear, a subsidiary of Southern Company, operates Plant Vogtle's two existing nuclear power units for the plant owners. Southern Nuclear also operates the Edwin I. Hatch Nuclear Plant near Baxley, Ga. and the Joseph M. Farley Nuclear Plant near Dothan, Ala.*

*Westinghouse Electric Company, a group company of Toshiba Corporation, is the world's pioneering nuclear power company and is a leading supplier of nuclear plant products and technologies to utilities throughout the world. Westinghouse supplied the world's first Pressurized Water Reactor (PWR) in 1957 in Shippingport, Pa. Today, Westinghouse technology is the basis for approximately one-half of the world's operating nuclear plants, including 60 percent of those in the United States.*

*The Shaw Group Inc. (NYSE: SGR), a 20 percent owner of Westinghouse Electric Company, is a leading global provider of technology, engineering, procurement, construction, maintenance, fabrication, manufacturing, consulting, remediation and facilities management services for government and private sector clients in the energy, chemicals, environmental, infrastructure and emergency response markets. A Fortune 500 company with fiscal 2008 revenues expected to exceed \$7 billion, Shaw is headquartered in Baton Rouge, La., and employs approximately 27,000 people at its offices and operations in North America, South America, Europe, the Middle East and the Asia-Pacific region. For further information, please visit Shaw's Web site at [www.shawgrp.com](http://www.shawgrp.com).*

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**Cautionary Note Regarding Forward-Looking Statements:**

Certain information contained in this release is forward-looking information based on current expectations and plans that involve risks and uncertainties. Forward-looking information includes, among other things, statements concerning the timing of various regulatory and other actions, plans and cost estimates for new generation resources for Georgia Power, and demand for electricity. Southern Company and Georgia Power caution that there are certain factors that can cause actual results to differ materially from the forward-looking information that has been provided. The reader is cautioned not to put undue reliance on this forward-looking information, which is not a guarantee of future

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performance and is subject to a number of uncertainties and other factors, many of which are outside the control of Southern Company and Georgia Power; accordingly, there can be no assurance that such suggested results will be realized. The following factors, in addition to those discussed in the Annual Report on Form 10-K for the year ended Dec. 31, 2007 of Southern Company and Georgia Power, and subsequent securities filings, could cause results to differ materially from management expectations as suggested by such forward-looking information: the impact of recent and future federal and state regulatory change, including legislative and regulatory initiatives regarding deregulation and restructuring of the electric utility industry, implementation of the Energy Policy Act of 2005, environmental laws including regulation of water quality and emissions of sulfur, nitrogen, mercury, carbon, soot or particulate matter and other substances, and also changes in tax and other laws and regulations to which Southern Company, Georgia Power and any of their subsidiaries are subject, as well as changes in application of existing laws and regulations; current and future litigation, regulatory investigations, proceedings or inquiries, including the pending EPA civil actions against certain Southern Company subsidiaries, FERC matters, IRS audits and Mirant-related matters; the effects, extent and timing of the entry of additional competition in the markets in which Southern Company's or Georgia Power's subsidiaries operate; variations in demand for electricity, including those relating to weather, the general economy, population and business growth (and declines), and the effects of energy conservation measures; available sources and costs of fuel; effects of inflation; ability to control costs; advances in technology; state and federal rate regulations and the impact of pending and future rate cases and negotiations, including rate actions relating to fuel and storm restoration cost recovery; regulatory approvals related to the potential Plant Vogtle expansion, including Georgia Public Service Commission and Nuclear Regulatory Commission approvals; potential business strategies, including acquisitions or dispositions of assets or businesses, which cannot be assured to be completed or beneficial to Southern Company, Georgia Power, or any of their subsidiaries; the ability of counterparties of Southern Company or Georgia Power to make payments as and when due and to perform as required; the ability to obtain new short- and long-term contracts with neighboring utilities; the direct or indirect effect on Southern Company's or Georgia Power's business resulting from terrorist incidents and the threat of terrorist incidents; interest rate fluctuations and financial market conditions and the results of financing efforts, including Southern Company's, Georgia Power's, and any of their subsidiaries' credit ratings; the ability of Southern Company, Georgia Power, and any of their subsidiaries to obtain additional generating capacity at competitive prices; catastrophic events such as fires, earthquakes, floods, hurricanes, droughts, pandemic health events such as an avian influenza or other similar occurrences; the direct or indirect effects on Southern Company's or Georgia Power's business resulting from incidents similar to the August 2003 power outage in the Northeast; and the effect of accounting pronouncements issued periodically by standard-setting bodies. Southern Company and Georgia Power expressly disclaim any obligation to update any forward-looking information.