AR-06-2684

Enclosure

Attachment A-7 #45

45	The section on unavoidable adverse environmental impacts discusses social issues without specificity and never identifies any particular environmental concern. Clarify this discussion to include specific environmental adverse impacts for construction and operations, including an assessment of the before- and after-mitigation value of those impacts? Include the EJ effects of both construction and operations for each alternative site. Provide a table that displays all of the adverse environmental impacts of construction and operations (including human health effects); a description of each impact; all mitigation strategies to be undertaken by the applicant for that impact, the cost of mitigation, and the expected value of the unavoidable portion of that impact.

Response:

SNC drafted this response based on additional guidance from NRC the week of December 4, 2006.

The text of ER Section 10.1 summarizes the unavoidable adverse impacts of construction and operation of the new units. Tables 10.1-1 for construction and 10.1-2 for operations provide greater detail about the impacts, potential mitigation and the unavoidable adverse impacts after mitigation has been considered.

The costs of mitigation are not easy to determine at this time. Many would be built into the project design (e.g., scheduling to ensure that construction of the barge and intake are completed in the shortest possible time; using construction best management practices to limit erosion, fugitive dust, runoff, spills and air emissions; providing first aid stations at the construction site, etc.). Others would rely on a communication plan of early/frequent communication between SNC and the affected communities, and thus the costs would be minimal.

Tables 10.1-1 and 10.1-2 are provided below. They have been slightly modified from the environmental report to expand on mitigation options.

Table 10.1-1 Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
Land Use	Approximately 500 acres of land will be cleared during construction, with the potential for erosion. Land will not be available for other uses.	Comply with requirements of applicable federal, state and local construction permits/approvals and local ordinances.	310 acres of land occupied on a long-term basis by nuclear plant and associated infrastructure.
		Clear only areas necessary for installation of the power plant/infrastructure.	
		Restrict construction activities to the construction footprint.	
		Use adequate erosion controls and stabilization measures, such as those provided in the Georgia Stormwater Manual.	
		Restrict activities to actual construction site and access ways.	
		Locate soil stockpiles near the construction site.	
		Revegetate all affected temporary-use areas after completion of construction	
	Construction of transmission corridor across approximately 60 linear miles of eastern Georgia	Minimize potential impacts through compliance with permitting requirements and best management practices, including sediment basins.	Land use on some land will change from woodland or agriculture to open scrub or grassland.
		Restrict sites of access to corridor for construction equipment.	
		Limit maintenance access roads	
		Revegetate, with attention to wildlife structure or food plots.	

Table 10.1-1 (cont.) Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Potential to disturb buried historic, archaeological, or paleontological resources	Conduct sub-surface testing prior to start of any onsite work to identify buried historic, cultural, or paeleontological resources. Follow established VEGP procedures to stop work and contact appropriate regulatory agencies if potential unanticipated historic, cultural, or paleontological resources are discovered.	Potential for destruction of unanticipated historic, cultural, or paleontological resources
	Construction debris will be disposed in on-site of off-site landfills	Use waste minimization to reduce volume of debris	Some land will be dedicated to disposal of construction debris and not available for other uses
Hydrologic and Water Use/	Construction has potential to erode sediments into water resources and will dewater the shallow aquifer	Adhere to applicable regulations, permits, and plans. Use best Management practices as found in the Georgia Stormwater Manual Install drainage controls to direct dewatering runoff.	Dewatering of shallow aquifer to surface water during construction.
	Construction will require approximately 460 gpm of groundwater	Practice water conservation as practical No other measures or controls will be necessary because withdrawals will be less than allowed by current permits	Use of groundwater as source for all water used for construction.
	Construction along river banks or stream banks (in the case of the transmission line) could introduce sediments into the river or stream	Adhere to best management practices. Install drainage controls Revegetate as soon as possible after clearing.	Small unavoidable adverse impacts

Table 10.1-1 (cont.) Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Use of heavy equipment introduces the possibility of petroleum spills that could enter surface water	Use good maintenance practices to maintain equipment, and prevent spills and leaks. Invoke VEGP's existing SPCC plan for construction activities.	Small unavoidable adverse impacts
Aquatic Ecology	Construction at river's edge will cause the loss of some organisms, and temporary degradation of habitat Transmission line construction across streams will cause the loss of some organisms and temporary degradation of habitat	Install coffer dams or similar engineering protective measures around the construction site Use best management practices to minimize erosion and sedimentation Install storm water drainage system at large construction sites and stabilize disturbed soils	Small unavoidable adverse impacts, including effects of construction noise on fish, for which there is no known mitigation
Terrestrial Ecology	Habitat loss will kill or displace animals Clearing and grading will kill or displace animals Construction noises could startle or scare animals	Plant footprint is sited on previously disturbed area that is poor natural habitat. Site new corridor to avoid critical or sensitive habitats/species as much as possible per Georgia regulations and GPC practices. Limit vegetation removal and construction activities to construction site or corridor and access roads	Small unavoidable impacts
	Birds may collide with tall construction equipment	No measures or controls will be necessary because impacts will be small.	Small unavoidable impacts

Table 10.1-1 (cont.) Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
Socio-economics	Construction workers, employees at the existing units, and local residents will be exposed to elevated levels of dust, noise and exhaust emissions from vehicles	Train and appropriately protect VEGP employees and construction workers to reduce the risk of potential exposure to noise, dust and exhaust emissions.	Small unavoidable impacts
		Make public announcements or prior notification of atypically loud construction activities.	
		Use dust control measures (such as watering, stabilizing disturbed areas, covering trucks).	
		Ensure construction equipment is maintained	
		Manage concerns from adjacent residents or visitors on a case-by-case basis.	
	Construction workers, employees at the existing units, outage employees, and local residents will be exposed to elevated levels of traffic	Post signs near construction entrances and exits to make the public aware of potentially high construction traffic areas.	Level of service on River Road will be reduced during shift change
		Add turn lanes at construction entrance	
		Consider buses, vans, carpools, or staggered shifts	
	Construction workers could be injured	Provide on-site services for emergency first aid, and arrange with local hospital emergency room to accept trauma victims, and conduct regular health and safety monitoring.	Small unavoidable impacts
		Provide appropriate job-training to construction workers.	

Table 10.1-1 (cont.) Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Initially sufficient housing to support the influx of construction workforce may be unavailable in Burke County	Discuss construction plans and anticipated influx of workers with community leaders. Builders and developers will meet the demand for additional housing, and because the project has a long lead time, and the construction workforce will build gradually, it is likely that if the community anticipates the increase in population, adequate housing will always be available.	Potential short-term housing shortage in Burke County.
	Initially there may be insufficient classroom space for the influx of construction workers families	Discuss construction plans and anticipated influx of workers with community leaders. Increased tax revenues as a result of the large construction project will fund additional school resources. Because the project has a long lead time, and the construction workforce will build gradually, it is likely that if the community anticipates the increase in population, adequate classroom space will always be available.	In the short-term there could be school crowding and inadequate fire protection in Burke County
	Inadequate fire protection infrastructure in Burke County will be further reduced	Discuss construction plans and anticipated influx of workers with community leaders. Burke County could fund additional fire protection equipment and train additional staff using the tax resources already paid by VEGP. Increased tax revenues after construction begins could be used to purchase additional equipment and hire/train additional staff, if necessary.	In the short term there could be insufficient fire protection in some areas of Burke County
Radiological	Construction workers will be exposed to small doses of radiation from the existing units	None required. All doses will be well within regulatory limits.	Small radiation exposure to construction workers.

Table 10.1-1 (cont.) Construction-Related Unavoidable Adverse Environmental Impacts

Category	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
Atmospheric and Meteorological	Construction will cause increased air emissions from traffic and construction equipment, and fugitive dust	Use dust control measures (such as watering, stabilizing disturbed areas, covering trucks) Ensure that construction equipment is well maintained.	Small unavoidable adverse impacts
Environmental Justice	Except for increased traffic on River Road, no disproportionately high or adverse impacts to minority or low-income populations were identified.	Consider buses, vans, carpools, or staggered shifts	Small unavoidable adverse impacts

Table 10.1-2 Operations-Related Unavoidable Adverse Environmental Impacts

Category/ Vogtle ESP ER Section	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
Land Use	Operating the new units will generate radioactive and non-radioactive wastes that are required to be disposed in permitted disposal facilities or permitted landfills	Practice waste minimization to minimize the volume of wastes.	Some land will be dedicated to permitted landfills or licensed disposal facilities and will not be available for other uses.
Hydrological and Water Use	Operations will result in discharge of small amounts of chemicals to the Savannah River	All discharges will comply with Georgia NPDES permit and applicable water quality standards. Revise the existing VEGP Storm Water Pollution Prevention Plan or prepare and implement a new one to avoid/minimize releases of contaminated storm water. Revise the existing VEGP Spill Prevention Countermeasures and Control Plan or prepare and implement a new one to avoid/minimize contamination from spills.	Small unavoidable adverse impacts
	Water for some systems will be provided by groundwater	Maximum normal groundwater use will be within existing permit limits	Water withdrawn from groundwater will not be available for other uses. In the unlikely event of off-normal pumping by more than one unit, the groundwater withdrawal limits could be exceeded and the aquifer drawdown could be accelerated
	Maintenance activities at the site and along the transmission line could result in small petroleum spills	Revise the existing VEGP Spill Prevention Countermeasures and Control Plan or prepare and implement a new one to avoid/minimize contamination from spills. Adhere to the GPC SPCC plan when working on transmission lines	Small unavoidable adverse impacts

Table 10.1-2 (cont.) Operations-Related Unavoidable Adverse Environmental Impacts

Category/ Vogtle ESP ER Section	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Maximum surface water consumptive use will be less that 2 percent of 7Q10.	No mitigation required.	Water lost through evaporation will not be available for other uses
	Operations will result in a small thermal plume discharged to the Savannah River	The differences between plume temperature and ambient water temperature will be maintained within limits set in the NPDES permit	Small unavoidable adverse impacts
Aquatic Ecology	Operations will result in discharge of small amounts of chemicals to the Savannah River	The NPDES permit limits are set to ensure that discharges do not significantly affect aquatic populations or water quality.	Small unavoidable adverse impacts
	Routine maintenance activities could result in petroleum spills near water	Revise the existing VEGP Spill Prevention Control and Countermeasures Plan or prepare and implement a new one to avoid/minimize contamination from spills.	Small unavoidable adverse impacts
	Impingement, entrainment and thermal discharges	Cooling towers	Small unavoidable impacts
Terrestrial Ecology	Some birds will collide with the cooling towers or the transmission line	This is not a problem with the existing cooling towers and is not expected to be a problem with the new towers. Bird collisions with transmission lines are so rare that none have been reported to GPC. No mitigation is necessary	Small unavoidable adverse impacts

Table 10.1-2 (cont.) Operations-Related Unavoidable Adverse Environmental Impacts

Category/ Vogtle ESP ER Section	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Salt drift will be distributed in a 3,300 foot radius around each tower.	The rate of deposition will be less than that expected to cause leaf damage. No mitigation is necessary.	Small unavoidable adverse impacts
	Episodic loud noises at the site or along transmission line could frighten animals.	None necessary	Small unavoidable adverse impacts
Socioeconomic	The plants emit low noise	Noise levels would normally not be above background at the site boundary. No mitigation is necessary.	Small unavoidable adverse impacts
	Episodic loud noises could annoy nearby residents	Handle incidents on a case-by-case basis.	
	New transmission line has potential to induce electric shock in people standing near the line	Build transmission line to NESC code to minimize noise and electric shock	Small unavoidable adverse impacts
	Additional cooling towers and plumes would impact existing viewscape.	Consider landscaping to hide towers from boaters on the river	Small unavoidable adverse impacts
	Two additional units will double the traffic on local roads during shift change. More frequent outages at VEGP will increase traffic even further.	Consider staggering outage shifts to reduce plant-associated traffic on local roads during shift changes	Small unavoidable adverse impacts
	Emissions from diesel generators and the auxiliary boilers	No mitigation needed. Emission would be within limits established in certificates of operation	Small unavoidable adverse impacts

Table 10.1-2 (cont.) Operations-Related Unavoidable Adverse Environmental Impacts

Category/ Vogtle ESP ER Section	Adverse Impact	Mitigation Measure	Unavoidable Adverse Environmental Impacts
	Population in the region may increase by 2,600 people	No mitigation required. The increased tax revenues from construction will support upgrades to additional infrastructure. Housing availability is adequate in the region.	Small unavoidable adverse impacts
Radiological	Potential doses to members of the public from releases to air and surface water.	All releases will be well below regulatory limits. No mitigation required.	Small unavoidable adverse impacts
Atmospheric and Meteorological	Median plume from cooling towers will be about 0.5 miles long with a maximum plume length of 6.2 miles expected 3.5 percent of the time	No mitigation required	Small unavoidable adverse impacts
	Diesels and the auxiliary boiler would contribute to air emissions	Comply with permit limits and regulations for installing and operating air emission sources.	Small unavoidable adverse impacts
Environmental Justice	No disproportionately high or adverse impacts on minority or low-income populations resulting from operation of the proposed new units have been identified.	None required.	Small unavoidable adverse impacts