

## ATTACHMENT C

### **Grand Gulf ESP EIS Inquiries**

**Table J-1. Statements Made in the SERI Environmental Report and in Response to NRC Staff Requests for Additional Information Related to Future Actions and Activities by SERI and the Impacts of Those Activities Considered in the Staff's Analysis**

<b>Technical Area</b>	<b>Environmental Report or RAI Statement</b>	<b>ER Section and Page</b>
Land Use	The Universal Transverse Mercator Grid Coordinates for the location of the new reactor(s) on the site are approximately N3,543,261 meters and E684,018 meters.	1.1 p 1.1-2
Land Use	There is no rail service in the vicinity of the Grand Gulf Nuclear Station (GGNS) site and there are no active railroad tracks that traverse the GGNS site or the vicinity surrounding the site.	2.2.1 p 2.2-2
Land Use	Entergy Operations allows access to parts of the plant site property for recreational purposes. The site is posted to ensure awareness of access restrictions by individuals.	2.2.1 p 2.2-2
Land Use	There is no activity at the GGNS plant site to explore for, drill for, or otherwise extract minerals. Past unsuccessful exploratory activities on or near the GGNS plant site and the geological character of the subsurface structure in the vicinity of the GGNS plant site indicate that commercial mineral production appears unlikely in the foreseeable future.	2.2.1.2 p 2.2-3
Land Use	Information from the Claiborne County Extension office at the present time indicated that there are approximately 300 to 400 head of cattle within a 6 mile radius of the site, and most of the cattle are located southwest of the plant. There are no milk cows or swine within Claiborne County.	2.2.3 p. 2.2-4
Land Use	Dredging would be required to form the embayment. The embayment bottom would be at approximately elevation 15 ft msl.	3.4.2.1 p 3.4-3

Land Use

There are three transmission lines associated with GGNS: (1) the Baxter-Wilson line, a 22-mile single-circuit 500 kV transmission line connecting GGNS to the Baxter-Wilson EHV Substation near Vicksburg, Mississippi; (2) the Franklin line, a 43.6-mile single-circuit 500 kV transmission line connecting the GGNS switchyard to the Franklin EHV Substation; and, (3) the Port Gibson line, a 5.5-mile single-circuit 115 kV transmission line connecting the GGNS switchyard to the Port Gibson Substation. The electrical power generated by GGNS Unit 1 is transmitted by interconnection with 500 kV transmission facilities that were in existence when Unit 1 was constructed.

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3.7 p 3.7-1

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Land Use	The power transmission and distribution (T&D) system existing at the time of the new facility startup and operation will be relied upon to distribute the electricity generated by a new facility at Grand Gulf. In support of site selection evaluation work (environmental report, Section 9.3), a sensitivity analysis of the T&D system was performed to assess transmission injection capability for the new potential electrical power generation at GGNS. This study concluded that the existing T&D system is adequate for at least an additional 1311 MW (e) of generating capacity, provided that certain modifications were accomplished.	3.7 p 3.7-1
Land Use	When the specific facility design, the expected electrical output, the need for power, and primary market location(s) are established, the adequacy of the existing (at that time) T&D system to support the new facility will be determined. If, at that time, additional changes to the T&D system were warranted, the associated environmental impacts would be evaluated.	3.7 p 3.7-1
Land Use	An estimated 400 acres of the 2100-acre GGNS site would be affected by construction of a new facility.	4.1.1 p 4.1-1
Land Use	Of the approximately 400 acres estimated for the construction of a new facility, approximately 120 acres overlap currently developed or previously altered areas. It is estimated that approximately 125 acres would contain permanent structures (primarily a power block area, cooling tower area, and bottom land pipeline and intake areas.	4.1.1 p 4.1-1
Land Use	The barge slip constructed for GGNS Unit 1 would be used to offload large equipment and materials for the construction of a new facility transported by river.	4.1.1 p 4.1-2
Land Use	There would be some impact from excavation and construction of the intake structure along the river bank in the flood plain areas, but the impact is expected to be small and temporary. Additionally, trenching from the intake to the proposed power block location on the bluffs east of the river would be required to lay supply and discharge piping from the new facility. Most of the floodplain areas are also classified as wetlands.	4.1.1 p 4.1-2

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Land Use	<p>Makeup water (cooling tower makeup and other raw water needs) for a new facility would be supplied primarily from the Mississippi River via an embayment, and associated intake structure, located on the east bank of the river and on the north side of the existing barge slip. Dredging would be required to form the embayment on the Mississippi River... Riprap, or other appropriate means, would be used to stabilize the banks of the embayment and the river shoreline around the embayment during and following construction. These construction activities would be done in compliance with Corps of Engineer requirements...</p>	4.2.1.1 p 4.2-1
Land Use	<p>The proposed outfall, located above normal river water level, would include a concrete drainage course to the river similar to that for the GGNS Unit 1 discharge structure.</p>	4.2.1.1 p 4.2-2
Land Use	<p>It is anticipated that the existing road system would be adequate for construction of a new facility, and new road construction would not be necessary.</p>	4.2.1.3 p 4.2-3
Land Use	<p>Use of Hamilton and Gin Lakes for recreational fishing may be temporarily restricted during construction as a safety measure to protect members of the public from hazards related to the use of heavy construction equipment. Therefore, the impact to recreational users of these lakes would be minimal.</p>	4.2.1.3 p 4.2-4
Land Use	<p>Approximately 145 acres of upland forest and approximately 105 acres of upland fields would be affected by the construction of a new facility (Figure 2.4-3). This represents approximately 35% and 66% of these habitat types within the GGNS site, respectively... Approximately 100 acres of the upland area of the GGNS site would be permanently altered (i.e., for structures, parking lots, etc.) for a new facility. The remaining acreage disturbed by construction would be revegetated or reseeded and allowed to develop back into a stable ecological community.</p>	4.3.1.1 p 4.3-1

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Land Use	Approximately 30 acres of bottomland palustrine, forested, seasonally flooded wetland would be disturbed during the construction of a new facility (Figure 2.4-3). This is approximately 3% of this habitat type within the GGNS site property. The remainder of the area required for construction would be in areas previously disturbed for the construction of GGNS Unit 1 (e.g., heavy haul road, barge slip area).	4.3.1.2 p 4.3-2
Land Use	Additional re-routing of onsite drainages and construction of additional sediment retention basins would likely be required to support construction of a new facility. A buffer zone of native vegetation could be maintained between the construction areas and the lakes.	4.3.2.1 p 4.3-7
Land Use	Operation of a new facility is not expected to produce any additional significant impacts to land use on the site nor in the vicinity of the GGNS site... These recreational areas may experience increased visitation due to the operational work force at a new facility. No other impacts to these recreational facilities would be expected.	5.1.1 p 5.1-1
Land Use	The bounding estimate of salt deposition from the operation of cooling towers would be approximately 8 lbm/100-acre-month ... This amount of deposition would not be expected to cause damage to vegetation in the vicinity of the GGNS site. Therefore, no significant impact to land use from cooling tower drift is expected on the site. And, based on proposed cooling tower(s) distance from the site boundary, and the prevailing wind direction, none is expected beyond the site boundaries.	5.1.1 p 5.1-1
Land Use	The rail line, which extended from Vicksburg to the site and beyond, and the spur constructed to the site to support GGNS Unit 1 construction, have since been abandoned. To support transport of heavy materials and equipment to the site, new rail service will likely be required. This may involve reconstruction of rail tracks along the former rights of way, or construction of new rail lines.	4.4.1.4 p 4.4-3

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Land Use (response to RAI 4.1-1)	The statement quoted from the Environmental Report is intended to identify that the precise methods of construction material transportation to the site have not been determined or projected and that rail service is not immediately available at the site. The Environmental Report does not propose, project or evaluate possible changes to rail service. Many variables could affect potential future construction material transportation modes, including the degree to which modular construction methods are to be used. Although not evaluated for the ESP, the Environmental Report does not preclude future consideration and evaluation of rail service.	Accession number ML050380170
Land Use (response to RAI 2.5.3-1)	NRC staff considered the aerial photos of the GGNS construction in the evaluation of ESP facility construction impacts.	Accession number ML050380170
Land Use	Additional analysis would be necessary to confirm whether, beyond the addition of 1311 MW(e), any supporting T&D system upgrades or changes would be required, and what the associated operational environmental impacts would be. This additional analysis was not pursued at ESP.	3.7 p 3.7-1
Land Use	The occurrence of icing conditions even in the vicinity of the linear mechanical draft cooling towers (LMDCTs) is expected to be rare since the water deposition rate is small and prolonged periods with below freezing temperatures are infrequent. Because any icing would be confined within the site property boundary, no adverse impact on surrounding public lands or roadways would occur.	5.3.3.1.2 p 5.3-10
Land Use	Based on the results of the evaluation performed for this application, the guidance provided in NUREG-1555, and the results of the Cooling Tower Drift Program performed for the existing GGNS facility, no adverse impact on the surrounding vegetation from salt deposition due to the operation of the NHS cooling towers for the new facility is anticipated.	5.3.3.1.3 p 5.3-13

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Land Use	The majority of in-migrants and their families would be expected to settle in developed, more populous areas, or their suburbs, such as Vicksburg (Warren County), Natchez (Adams County), and Clinton/Jackson (Hinds County), which have a combined year 2000 population of over 300,000 people.	5.8.2 p 5.8-4
Land Use	The temporary outage staff typically stays in area hotels or recreational vehicle courts dispersed throughout the region; therefore, no single community would be overburdened by the influx of temporary workers. It is expected that the increased frequency of the temporary outage staff would not significantly impact the region.	5.8.2 p 5.8-4
Land Use	Empirical case studies of seven operating nuclear power plants indicated in all instances that the in-migration of plant personnel had small impacts on housing. In addition, the workers would not move exclusively to one community but rather would be expected to make residences in the relatively large area formed by surrounding communities.	5.8.2.1 p 5.8-4
Land Use	It is possible that the influx of site workers would increase demand for and stimulate the development of some commercial businesses (e.g., gasoline and automotive service stations, restaurants, etc). However, these services would likely be confined to existing commuter routes, and would not represent a major land use change for the region.	5.8.2.4 p 5.8-8
Meteorology and Air Quality	The normal plant heat sink (NHS) that will be used to dissipate heat from the turbine cycle for the new facility will utilize cooling towers to dissipate the heat directly to the atmosphere.	1.1 p 1.1-3
Meteorology and Air Quality	The cycles of concentration for the NHS circulating water is expected to be a maximum of 4, which will result in the concentrations in the circulating water being 4 times that of river water.	3.0 Table 3.0-1

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Meteorology and Air Quality	Seasonal and Annual Cooling Tower Impact (SACTI) model predicts that the majority of the fogging due to the operation of the LMDCTs will be confined to within about ½ mile (800 m) to the south to southeast of the towers with occasional fogging (approximately 2 hrs/yr) up to about ¾ mile (1200 m) to the south to southeast of the towers (this area is entirely within the property boundary of the site). Therefore, it is predicted that the operation of the LMDCTs will result in limited increased fogging at the site.	5.3.3.1.2 p 5-9
Meteorology and Air Quality	The towers will use drift eliminators to minimize the amount of water lost from the towers via drift.	5.3.3.1.3 p 5-10
Meteorology and Air Quality	Gaseous emissions will be within regulatory guidelines set by Federal and State agencies.	5.8.1.2 p 5.8-2
Meteorology and Air Quality	The meteorological monitoring program will be the same throughout the pre-construction and operational phases of the project. The monitoring program will simply be a continuation of the ongoing meteorological monitoring program for the GGNS Unit 1 facility.	6.4 p 6.4-1
Ecology	It will be required to coordinate with the Corps of Engineers and/or other appropriate regulatory agencies and obtain permits for construction of the embayment and intake structure when the final design of the intake structure and its exact location are defined. The design and placement of the embayment and intake structure will be in accordance with the Corps guidance, MDEQ and EPA requirements, and good engineering practice.	Section 2.3.1.1.1 pg 2.3-3
Ecology	The normal heat sink circulating water system for the new facility will be a closed-cycle type system using either hyperbolic natural draft cooling towers or mechanical draft cooling towers.	Section 2.3.2.1 pg 2.3-14
Ecology	The design and placement of the embayment and intake structure will be in accordance with the Corps of Engineers guidance, MDEQ and EPA requirements, and good engineering practice.	Section 2.3.1.1.1 pg 2.3-3



**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Ecology	The Corps of Engineers has completed revetments along the east and west river banks... It is expected that these measures will stabilize the Mississippi River shoreline near the site.	Section 2.3.1.1.1 pg 2.3-2
Ecology	This portion of the switchyard would be used, with modifications.	Section 2.2.2 pg 2.2-3
Ecology	Plant makeup (cooling tower makeup and other raw water needs) for a new facility would be supplied from the Mississippi River via an intake structure located on the east bank of the river.	Section 2.3.1 pg 2.3-1
Ecology	The Corps of Engineers continues to evaluate the need for additional shoreline work, and would be expected to make improvements as considered appropriate. However, those actions would not be expected to impact site suitability.	Section 2.3.1.1.1 pg 2.3-3
Ecology	Makeup to the normal heat sink cooling towers, balance of plant cooling systems (e.g., plant service water), and other raw water makeup needs for a new facility would be supplied by an intake structure located on the east bank of the Mississippi River.	Section 2.3.2.1 pg 2.3-14
Ecology	The new facility owner would be required to coordinate with the Corps of Engineers and obtain permits from appropriate regulatory agencies for construction of the embayment and intake structure when the final design of the embayment and intake structure and its exact location are defined.	Section 2.3.2.1 page 2.3-14
Ecology	Eagles nesting on site would be largely protected from shooting, development and habitat alteration, and other human disturbance that usually accounts for mortality and reduced breeding success elsewhere.	Section 2.4.1.2.3 pg 2.4-9
Ecology	Other than the installation of additional revetments along the east bank, no significant changes to the river channel or banks which would be expected to alter the ecological characteristics of this riparian habitat have occurred.	Section 2.4.2.1.1 pg 2.4-12

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Ecology	Makeup water to the cooling tower(s) and supply or makeup water for the SWS will be withdrawn directly from the Mississippi River through an intake structure on the river shore.	Section 2.3.1 pg 2.3-1
Ecology	The power transmission and distribution (T&D) system existing at the time of the new facility startup and operation will be relied upon to distribute the electricity generated by a new facility at Grand Gulf.	Section 3.7 pg 3.7-1
Ecology	When the specific facility design, the expected electrical output, the need for power, and primary market location(s) are established, the adequacy of the existing (at that time) T&D system to support the new facility will be determined.	Section 3.7 pg 3.7-1
Ecology	Construction activities to be conducted within a floodplain on the site would be the water intake structure and embayment along with other items that are a part of that water intake facility. This water intake will be located at or near the existing barge slip area.	Section 4.1.1 pg 4.1-2
Ecology	Once the facility design is finalized, appropriate analyses of transmission and distribution system adequacy will be made.	Section 4.1.2 pg 4.1-3
Ecology	Traffic on Grand Gulf Road will increase substantially during the peak construction period, and will be at its peak during the morning and evening shift changes. Noise in the general area will increase from this increased traffic but the increases will be temporary, and will only occur as indicated twice per day, during the week.	Section 4.4.1.1 pg 4.4-1
Ecology	The new facility will require a small amount of water withdrawal relative to normal river flow; makeup flow requirements are estimated at approximately 85,000 gpm.	Section 5.2.1.1 pg 5.2-1
Ecology	There is little potential that operation of the cooling system intake for a new facility at the Grand Gulf ESP site will impact any such areas (wildlife).	Section 5.3.1.2.1 pg 5.3-3
Ecology	The Normal Plant Heat Sink (NHS) that will be used to dissipate heat from the turbine cycle for the new facility will utilize cooling towers to dissipate the heat directly to the atmosphere.	Section 5.3.3 pg 5.3-6

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Ecology	The heat dissipation system for the NHS for the new facility will use either natural draft cooling towers or linear mechanical draft cooling towers.	Section 5.3.3.1 pg 5.3-8
Ecology	Two types of cooling systems will be considered for a new facility at the Grand Gulf ESP site: natural draft cooling towers and mechanical draft cooling towers.	Section 5.3.4.2 pg 5.3-16
Ecology	Environmental measurements and monitoring of terrestrial and aquatic ecology at the GGNS site will be divided into four phases: • Pre-application (CP or COL) Monitoring • Site Preparation and Construction Monitoring • Pre-operational Monitoring • Operational Monitoring	Section 6.5 pg 6.5-1
Ecology	The Grand Gulf ESP site will not be substantially different from the acceptable environmental impacts identified for the previously analyzed sites.	Section 7.2.2 pg 7.2-2
Ecology	(Coal) Additional ecological impact will occur due to land use related to mining of coal and limestone. Substantially greater impacts expected, relative to that required for uranium mining and reprocessing.	Table 9.2-1 Sheet 2 of 5
Ecology	(Combined Cycle Natural Gas) Additional ecological impact will occur due to land use related to gas wells and collection stations; expected to be proportionally higher than that related to uranium mining and reprocessing.	Table 9.2-1 Sheet 2 of 5
Water Use and Quality	Plant makeup (cooling tower makeup and other raw water needs) for a new facility would be supplied from the Mississippi River via an intake structure located on the east bank of the river.	2.3.1 p 2.3-1
Water Use and Quality	Emergency cooling water (ultimate heat sink) for a new facility would be provided from closed-cooling systems which utilizes enclosed basins with mechanical draft cooling towers, or similar heat removal mechanisms, and would not be reliant on the source of water from the river intake, with the possible exception of normal make-up.	2.3.1 p 2.3-1

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Socioeconomics	Emergency planning responsibilities are assigned to a number of departments and agencies. Federal, state and local officials will implement appropriate protective actions in case of an emergency.	ER Section 5.8.2.3.3, P. 5.8-6; Section 2.5.2.9, P. 2.5-7
Socioeconomics	A highway construction plan to extend the present path of Highway 18 is in the early planning stages. This proposed extension will connect Highway 18 to Grand Gulf Road, providing additional access to the GGNS site.	ER Section 5.8.2.3.3, P. 5.8-6; Section 2.5.2.9, P. 2.5-7
Socioeconomics	Depending on the type of plant (merchant plant which would be unregulated, or a regulated – by the Public Service Commissions of Mississippi and Louisiana plant), the tax structure may be similar to the GGNS Unit 1 (for a regulated plant), or be some mutually agreeable amount for an unregulated merchant plant.	ER section 2.5.2.3, p. 2.5-5
Socioeconomics	The actual mode of shipment [of irradiated fuel] will be determined by DOE and may include either rail or truck shipments.	ER Section 3.8.2.2.1, P. 3.8-8
Socioeconomics	Construction of the cooling towers will have minimal impact on the surroundings. Construction noise levels during construction of a new facility at the Grand Gulf ESP site will have minimal impacts on the surrounding populace.	ER Section 4.1.4.5, P. 4.1-7
Socioeconomics	Complying with applicable OSHA noise regulations will ensure that the impact on construction workers is considered to be small.	ER Section 4.4.1.6, P. 4.1-8
Socioeconomics	A construction noise abatement and protection program will provide required mitigative measures for noise which may, on a short term basis, exceed guidance [65dB(A)]. Excessively loud construction activities would be done during daylight hours if necessary.	ER Section 4.4.1.1, P. 4.4-1, P. 4.4-2

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Socioeconomics	Traffic on Grand Gulf Road will increase substantially during the peak construction period, and will be at its peak during the morning and evening shift changes. Noise in the general area will increase from this increased traffic but the increases will be temporary, and will only occur as indicated twice per day, during the week.	ER Section 4.4.1.1, P. 4.4-1
Socioeconomics	Many of the short-term employees will likely travel to the area unaccompanied by family members.	ER Section 4.4.2.3.1, P. 4.4-4
Socioeconomics	Rural setting of the site and the premise that the majority of the work force will emanate from the surrounding more populated areas and communities away from the site, it is likely a large portion of these new business and jobs would be temporary.	ER Section 4.4.2.6, P. 4.4-8
Socioeconomics	U.S. 61 S is two-lane improved roadway - will be 4-lane, divided freeway within 2 years like U.S. 61 N from Port Gibson	ER Section 4, Table 4.4-1 (No Page No.)
Socioeconomics	SACTI model predicts that the majority of the fogging due to the operation of the LMDCTs will be confined to within about ½ mile (800 m) to the south to southeast of the towers with occasional fogging (approximately 2 hrs/yr) up to about ¾ mile (1200 m) to occasional fogging (approximately 2 hrs/yr) up to about ¾ mile (1200 m) to the south to southeast of the towers (this area is entirely within the property boundary of the site). Therefore, it is predicted that the operation of the LMDCTs will result in limited increased fogging at the site.	ER Section 5.3.3.1.2, P. 5.3-10
Socioeconomics	While the proposed project's workforce and construction time period are greater than that of the gas plant, the impacts will be short term and mitigated by dispersion over several relatively populous counties and improved transportation routes.	ER Section 9.2.2.6.4, P. 9.2-14
Socioeconomics	Facility workforce will add to road network traffic load with an associated increase in traffic accidents. Road improvements and flexible work schedules will mitigate this impact to a certain extent.	ER Section 4, Table 4.6-1, Sheet 9 of 10 (close paraphrase)

**Table J-1. (contd)**

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Socioeconomics	Several road improvement and construction projects have been accomplished or planned for GGNS area. These projects will help ameliorate traffic problems associated with the proposed new facility.	ER Section 4, Table 4.6-1, Sheet 9 of 10 (close paraphrase); also ER Section 5, Table 5.10-1, Sheet 1 of 16
Human Health	Liquid radwaste system design will be such that water which is discharged to the environment shall result in radioactive releases which conform to the "as low as reasonably achievable" requirements of 10 CFR 50.34a.	3.5.2, page 3.5-2
Human Health	Gaseous radwaste system design, including ventilation systems exhaust systems, will be such that radioactive gases which are discharged to the environment from these systems shall result in radioactive releases which conform to the "as low as reasonably achievable" requirements of 10 CFR 50.34a.	3.3.5, page 3.5-2
Human Health	The LWR technologies being considered will solidify and package their radioactive waste.	3.8.1, page 3.8-4
Human Health	In all likelihood, the decay time will be at least ten years and probably even longer.	3.8.1, page 3.8-3
Human Health	The actual mode of shipment of spent fuel will be determined by DOE and may include either rail or truck shipments.	3.8.1, page 3.8-3
Human Health	The gas-cooled technologies being considered will solidify and package their radioactive waste.	3.8.2.2.1, page 3.8-7
Human Health	The gas-cooled reactor technologies will make far fewer shipments. The GT-MHR will need only 6 shipments while the PBMR will require 9 shipments annually.	3.8.2.2.2, page 3.8-8

Table J-1. (contd)

Technical Area	Environmental Report or RAI Statement	ER Section and Page
Human Health	In the case of decay heat, both of the gas-cooled reactor technologies will generate fewer watts per MTU at time of shipment, and fewer kW per truck cask at time of shipment. The fuel inventory will be discussed as part of the remaining two characteristics that were exceeded: actinide inventory and krypton-85 inventory.	3.8.23, page 3.8-10
Human Health	Location of a new facility will be several hundred feet or more away from the protected area boundary, and about 1000 feet from the Unit 1 Turbine Building, the radiation levels due to nitrogen-16 skyshine are expected to be essentially background levels, similar skyshine are expected to be essentially background levels, similar to those readings obtained at TLDs located on the west/northwest side of the plant protected area boundary.	4.5.4, page 4.5-3
Human Health	These areas are several hundred feet from the protected area boundary, which will result in a substantial reduction in the dose rate due to distance from the source of the radiation.	4.5.4, page 4.5-3
Human Health	It is expected that the dose rates in these two constructions areas will be at or very near background levels.	4.5.4, page 4.5-3
Human Health	The doses they receive from background radiation will be more significant than nitrogen-16 skyshine doses.	4.5.4, page 4.5-3
Human Health	Implementation of a radiation environmental monitoring program for the new facility, compliance with requirements for maintaining dose ALARA, and attention to design of plant shielding to ensure dose is ALARA, will result in doses to the public and to construction workers due to direct radiation being minimal.	5.4.4, page 5.4-3

**Table J-2. Key Assumptions Used by the NRC Staff in Assessing Environmental Impacts at the Grand Gulf Early Site Permit Site**

Technical Area	Assumption	EIS Section and Page
Land Use	The Grand Gulf ESP site will be wholly contained within the Grand Gulf site.	5.1
Land Use	The construction footprint will align with environmental report Figure 2.1-2.	5.1.1
Land Use	Land-use impacts of any potential transmission line right-of-way upgrade or expansion request will be assessed by the appropriate authority. State or local agency citing procedures will be followed once right-of-way routing is determined.	5.1.2
Land Use	Existing transmission line rights-of-way are 61 m (200 ft) in width.	5.1.2
Land Use	Transmission line upgrades would utilize only existing 500-kV transmission lines and rights-of-way. The 115-kV line is used to supply power to the site from offsite.	5.1.2
Land Use	No significant agriculture, crops, or dairy production are or will be located at or immediately near the Grand Gulf site.	5.1.1
Land Use	No third-party mining activities would be possible at the ESP site.	5.1.1
Land Use	Planned maintenance and refueling outages would be staggered such that only the GGNS Unit 1 or the proposed Grand Gulf ESP facility would be in outage at one time.	5.1.1 p 5-3
Land Use	Salt drift from any cooling tower design would be localized and well below NRC guidance thresholds.	5.1.1 p 5-3
Land Use	Induced housing effects of construction and operations would be dispersed across urbanized areas of southwestern and central Mississippi.	5.1.1 pp 5-2 - 5-3
Land Use	The applicant would follow best management practices and would abide by all relevant regulations pertaining to ground-disturbing activities, such as forest and wetlands protection.	5.1.1 5.1.2 p 5-4



**Table J-2. (contd)**

Technical Area	Assumption	EIS Section and Page
Meteorology and Air Quality	Meteorological data from the site presented in various tables in the environmental report and request for additional information responses are reasonably representative of the site (except for wind data). Only the wind data for 2001 to 2003 are assumed to be representative.	2.3.3 p2-17
Meteorology and Air Quality	Air emissions from the Grand Gulf ESP facility would be bounded by those listed in the environmental report.	5.2.2 p 5-5
Meteorology and Air Quality	The applicant would use dust control measures during construction and operation.	4.2.1 p 4-6
Meteorology and Air Quality	If air quality impacts related to transportation occur during construction, the applicant would implement best management practices to minimize the impacts.	4.2.2 p 4-6
Meteorology and Air Quality	Various measures outlined in the environmental report would be followed to limit air quality impacts of construction.	4.2.1 p 4-6
Meteorology and Air Quality	Cooling towers would have drift eliminators that are comparable in effectiveness to the drift eliminators in current generation cooling towers.	5.2.1 p 5-5
Ecology	Upland and bottomland areas of the proposed Grand Gulf ESP site that would be disturbed by construction would undergo a botanical survey prior to initiating such activities.	4.4.1.4 pg 4-18
Ecology	A recent description will be provided of the aquatic biota that are in the vicinity of the ESP site and the transmission line rights-of-way prior to or during the CP or COL stage. The description will be consistent with NUREG 1555, Environmental Standard Review Plan, Chapter 2.4.2.	4.4.2 4.4.3.1 5.4.2 5.4.3.1 7.4
Ecology	The proposed intake system will have screens with a size such that the average intake velocity through the screen would be less than or equal to 0.15 m/s (0.5 ft/s).	5.4.2.1 pg 5-21

**Table J-2. (contd)**

Technical Area	Assumption	EIS Section and Page
Socioeconomics	Per the discussion in the environmental report, the staff assumed that 50 percent of the workforce at the Grand Gulf ESP site would come from the 80-km zone surrounding the plant, with almost all immigrating personnel and families living in Vicksburg, suburban Jackson, and Natchez. The staff also did the impact analysis under the alternative assumption that personnel and families would be distributed the same as the current plant-related population for GGNS.	4.5.2, p. 4-33, 4-34 4.5.3.1, p 4-35 4.5.4.3, p 4-39 4.5.4.4, p 4-42 4.7.2, p 4-50 5.5.2, p 5-35 5.5.3.1, p 5-35 (explicit on 5-37) 5.5.4.1, p. 5-38 5.5.4.3, explicit on p 5-42 5.5.4.4, explicit on p 5-42 5.5.4.5, explicit on p 5-42
Socioeconomics	For the Grand Gulf ESP site, the staff identified two ways in which a new nuclear plant might be treated for property tax purposes under Mississippi tax law, which was assumed to remain the same in the future. If the plant were a merchant plant, it might be taxed as an ordinary taxable business asset, taxable by Claiborne County. The other possibility is that the state of Mississippi might decide to tax the asset instead, and provide some share of the funds back to the county and to the city of Port Gibson. The staff did the analysis both ways.	2.8.2.3, p 2-74 4.5.3.2, p 4-36 5.5.3.2, p 5-36
Socioeconomics	The staff relied on SERI's statement in a reply to a request for additional information that it had no plans to restore the former rail spur to the Grand Gulf ESP site. This implies that large items and bulk materials would come in by barge or truck. SERI also said that a rail spur could not be precluded.	2.2.1, p 2-6 2.8.2.2, p 2-74 4.5.4.1, p 4-37
Socioeconomics	The staff assumed that if very large groups of families with school-age children moved into Claiborne County, the state of Mississippi would provide some impact assistance to the local school system.	4.5.4.5, p 4-44 5.5.4.5, p 5-41

**Table J-2. (contd)**

Technical Area	Assumption	EIS Section and Page
Environmental Justice	There are no unidentified and significant pre-existing health conditions or resource dependencies among minority and low-income populations in the region of the Grand Gulf ESP site.	4.7, p 4-50 5.7, p 5-45
Environmental Justice	The relative geographical locations of concentrations of minority and low-income individuals in the region of the Grand Gulf ESP site as shown in the 2000 U.S. Census are valid at time of CP or COL application.	4.7, p 4-50 5.7, p 5-45
Cultural Resources	Cultural resource surveys will be conducted if areas identified in Figure 4-1 in the EIS are selected for construction.	4.6 p 4-47
Cultural Resources	Appropriate cultural resource surveys would be conducted prior to construction of new transmission lines.	4.6 p 4-47
Cultural Resources	Cultural resource-specific written directions will be included in SERI's Excavation and Backfill Work Procedures prior to construction and operation.	4.6 p 4-47 5.6 p 5-43
Human Health	New transmission lines would be built to current industry and regulatory standards.	5.8.3, page 5-49
Human Health	Appropriate State and local requirements would be considered when assessing the occupational hazard and health risks associated with construction.	4.8.1, page 4-52
Human Health	The staff assumed adherence to NRC, Occupational Safety and Health Administration, and State safety standards, practices, and procedures for operation of new nuclear units.	5.8.5, page 5-50
Human Health	New unit or units are constructed at the location identified in the ER.	4.9, page 4-53
Human Health	Assumptions listed on pages 6-41 and 6-42.	6.2.4
Accidents	Population growth in the vicinity of the site would not alter the population distribution in the region.	5.10.2.1 p 5-77