TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Exclusion Area Authority and Control	Safety	
All Geographic and Demographic Factors	Safety	
Identification of Potential Hazards in Site Vicinity	Safety	
Evaluation of Potential Accidents	Safety	
Regional and Local Climatology	Safety	
Onsite Meteorological Measurements Program	Safety	
Local Meteorological Conditions that could Impact Plant Design	Safety	
Short-Term Atmospheric Dispersion Characteristics	Safety	
Long-Term Atmospheric Dispersion Characteristics	Safety	
Site Flooding due to Local Intense Precipitation	Safety	
Site Flooding due to Probable Maximum Flood on Streams and Rivers	Safety	
Site Flooding due to Potential Dam Failures Induced by Seismic Forces	Safety	
Site Flooding due to Probable Maximum Surge and Seiche	Safety	

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Site Flooding due to Probable Maximum Tsunami	Safety	
Site Flooding due to Channel Diversions	Safety	
Site Flooding due to Ice Jam on the Mississippi River	Safety	
Low Water Considerations	Safety	
Accidental Releases of Liquid Effluents to Ground and Surface Waters	Safety	
Site Acceptability from a Geologic and Seismologic Standpoint	Safety	
Stability of Subsurface Materials and Foundations	Safety	
Stability of Slopes in the Vicinity of the Site	Safety	
Aircraft Hazards	Safety	
Radioactive Effluent Dose Consequences from Normal Operation	Safety	
Site-Specific Impediments to the Development of an Acceptable Emergency Plan	Safety	

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Select Major Features of the Emergency Plan: • Emergency Planning Zones • Assignment of Responsibility • Onsite Emergency Organization • Emergency Response Support and Resources • Emergency Classification System • Notification Methods and Procedures • Emergency Communication • Public Education and Information • Accident Assessment • Protective Response • Radiological Exposure Control Medical and Public Health Support • Radiological Emergency Response Training	Safety	Resolved insofar as the Applicant described the essential elements for advanced planning. For emergency communication, protective response, and radiological exposure control, the Staff may need to make additional determinations at the CP or COL stage. The Staff will review the complete and integrated emergency plans submitted in any COL application referencing a Grand Gulf ESP to determine whether they comply with applicable requirements, including those in 10 CFR 50.47, "Emergency Plans."

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Site Characteristics related to the Development of Adequate Security Systems	Safety	
Selection of Design Basis Accidents	Safety	
Design-Specific (Assumed) χ/Q Values	Safety	
Site-Specific χ/Q Values	Safety	
Source Terms and Radiological Consequence Evaluations	Safety	
The QA design control measures described in Enercon's QAPPD and other Enercon procedures and documents are equivalent in substance to the requirements of Appendix B to 10 C.F.R. Part 50 for the following related to the ESP application as applicable: • Design Control • Procurement Document Control • Instructions, Procedures, and Drawings • Document Control	Safety	

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
• Control of Purchased Material, Equipment, and Services • Identification and Control of Materials, Parts, and Components • Control of Special Processes • Inspection • Test Control • Control of Measuring and Test Equipment • Handling, Storage, and Shipping • Inspection, Test, and Operating Status • Nonconforming Materials, Parts, or Components • Corrective Action • Quality Assurance Records • Audits		

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Construction Impacts on Air Quality: • Impacts of construction activities on air quality	Environmental	• Dust from construction activities would be mitigated to the extent possible. • Construction equipment burning gasoline or diesel fuel would be inspected and maintained to prevent excessive exhaust emissions. SERI states (SERI 2005) that equipment that does not meet air quality regulations and permits in place at the time of construction would be repaired or replaced. • SERI stated (SERI 2005) that open burning would be conducted in a burn pit using technology to increase combustion efficiency and reduce smoke level in compliance with applicable air-permit requirements established by the Mississippi Department of Environmental Quality (MDEQ). Procedures would be established to prevent brush and forest fires initiated by open burning.

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
• Impacts of increased traffic during construction on air quality		• It is unlikely that air quality would be degraded sufficiently to be noticeable beyond the immediate vicinity of Grand Gulf Road and State Highway 18 and U.S. Highway 61. • Air quality in Mississippi and nearby counties in Louisiana is consistent with all Standards.

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Construction Impacts on Water: • Impacts of hydrological alterations resulting from construction activity	Environmental	• Any increase in runoff intensity resulting from the increase in the impervious surface area would be mitigated using standard engineering storm water management practices pursuant to the site's NPDES storm water management program. • The construction of the shoreline intake and discharge structures along the Mississippi River would likely involve some temporary structures for protection from the flow of the river. However, these structures would not extend significantly into the river and would have minimal impact on the river's flow pattern adjacent to the shoreline. • Based on the character of the shallow groundwater system, the Staff concluded that any impacts on the groundwater flow pattern would be localized and any change would be unlikely to extend beyond the site boundary.

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
Construction Impacts on Ecology:	Environmental	
• Loss of onsite habitat		None
• Impacts of onsite equipment staging and borrow areas on wildlife habitat		• With the assumption that temporary construction areas in forest habitat would be reforested/restored, the impacts, being temporary in nature, would also be SMALL and additional mitigation would not be warranted.
• Overall impacts of construction activities on aquatic ecological resources		• Construction activities would be restricted to periods when river water level was low. • The exposed areas are expected to be sandy, based on information obtained during construction of GGNS Unit 1. • Very little turbidity and siltation is expected from construction activities at the shoreline through the use of standard construction practices (SERI 2005). • Dredging operations would be in compliance with ACE and MDEQ requirements so that long-term water

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		quality is not degraded. • Any water-quality impacts on the Mississippi River during construction of a new facility would be similar to the impact during the construction of GGNS Unit 1. • Construction of the pipeline connecting the power block to the cooling tower area would need to cross a small existing wetland. This would require approval from the ACE, and all work would be performed in accordance with the permit. • NRC expects that SERI would work with the appropriate Federal and State agencies and the transmission line owner, Entergy Mississippi, Inc., to develop and implement plans for widening the transmission line rights-of-way that would have minimal impacts on the aquatic ecosystems. • NRC expects that SERI would work with the appropriate State agencies and the transmission line owner, Entergy Mississippi, Inc., to develop and implement plans for the possible

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		widening of the transmission line rights-of-way that would have minimal impacts on Bayou Pierre and the crystal darter. • Appropriate construction mitigation would include instituting best management practices for erosion control into the Mississippi and Big Black rivers, Bayou Pierre, and other potentially affected streams.
• Impacts of construction at the Grand Gulf ESP site on terrestrial and aquatic Federally listed species		• Because wetlands would be minimally affected by construction at the Grand Gulf ESP site (see Section 4.4.1.1), impacts on alligators would be considered negligible. • Before beginning construction activities on the Grand Gulf site, especially those occurring in the bottomlands (e.g., construction of pipeline and intake structures), the adjacent Mississippi River shoreline should be surveyed for potential nest trees (dominant living pine [*Pinus* spp.] or bald cypress [*Taxodium*

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		distichum]) and nesting eagles during the reproductive season (September to January). • Thus, in the event that the Franklin

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		transmission line right-of-way is expanded, the USFS Homochitto National Forest in Meadville, Mississippi, should be contacted to ascertain the proximity of red-cockaded woodpeckers prior to any forest clearing. • Thus, a total of 6 percent of the bottomland forested wetland currently available onsite would be disturbed. This disturbance would widen a band of currently developed land that stretches from the base of the Loess Bluffs to the Mississippi River (Figure 2-5), but would not result in any further fragmentation of bottomland hardwood forest. This would not be expected to pose a barrier to potential bear movements in the bottomlands

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		along the river. • The preponderance of habitat used by bears would be expected to occur in bottomland forested wetland, where there would be relatively minor habitat destruction and no additional fragmentation. Thus, impacts on the Louisiana black bear from construction at the Grand Gulf ESP site are expected to be minor, as long as this does not result in the mortality of individual bears. Prior to disturbance of any bottomland forested wetland or upland hardwood forest, a bear survey should be conducted to determine use of the area. If denning bears are present, construction activities should be prohibited during the denning season (from December through April) in order to avoid destruction of bears and possible abandonment of cubs. Further, actual den sites/trees or candidate trees (bald cypress [*Taxodium distichum*] and tupelo gum [*Nyssa* sp.]) with visible cavities,

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		having a diameter at breast height of 0.9 m (3 ft) and occurring along river, lakes, streams, bayous, sloughs, or other water bodies in occupied habitat should not be harvested (FWS 2004e). If these measures are undertaken, mortality of individual bears would be considered unlikely. • Noise levels would increase from land-clearing equipment during construction at the Grand Gulf ESP site. Consequently, if bears are present, construction activities in the vicinity of a den tree should be limited during the denning season (December through April) (FWS 2004e). • The Franklin transmission line right-of-way crosses the Bayou Pierre. In the event the transmission line rights-of-way need to be widened, NRC expects that SERI would work with the appropriate Federal and State agencies and the transmission line owner, Entergy Mississippi, Inc., to develop and implement plans that

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		would have minimal impacts on the bayou darter. • Construction of the proposed intake and discharge structures would temporarily change the nearby river bank environment, and increase turbidity downstream of the in-river activities; however, this is likely to be localized and temporary and could be minimized by use of best management practices (Section 4.4.2). Impacts on the (fat pocketbook) mussel from construction activities cannot be evaluated without conducting surveys to determine if the mussels are using the shoreline where the proposed intake and discharge structures will be located. Any specimens found could be relocated. • During construction activities, sedimentation and turbidity would be controlled using standard construction practices. While these practices could limit the use of the region by adult pallid sturgeon in the immediate

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		vicinity of the site, the impact would be minor and temporary, if at all. The timing for construction is also not likely to affect any spawning or use of the region by juvenile pallid sturgeon because of the size of the river, the location of shoreline activities, and the limited in-river activities associated with the construction of the intake and discharge structures. • The conclusion of SMALL impacts by the NRC Staff is predicated on certain assumptions made by the Staff. These include the current occurrence of Federally listed threatened and endangered species and critical habitat in the project area, the current listing status of such species, and the current designation of critical habitat.
Construction Impacts on Socioeconomics: • Overall physical impacts (socioeconomic) of construction on workers and local public, buildings, roads, and aesthetics	Environmental	• However, during construction activities, the employees working the day shift at GGNS Unit 1 could be subjected to noise, dust, and gaseous pollutants associated with

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		construction events. These activities would be performed in compliance with local, State, and Federal regulations, and site-specific permit conditions. • Because people are more sensitive to changes in noise levels at night, any blasting, along with other excessively loud construction activities, would be conducted during daytime hours. • Noise levels during construction at the site boundaries are expected to be below the regulatory guidance of 65 dBA stated in NUREG-1555 (NRC 2000). A construction noise abatement and protection program would provide required mitigative measures for noise. On a short-term basis, noise may exceed this guidance; however, it is expected that noise from construction equipment would have no discernible impacts on the local noise level. All equipment would be operated in accordance with local, State, and Federal noise requirements.

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		• SERI states that a restriction on noise-related activities (for example, blasting) to daylight hours could also be incorporated into activity planning (SERI 2005). • However, construction would be conducted in accordance with all Federal, State, and local regulations that govern construction activities and emissions from construction vehicles. • Specific mitigation measures to control fugitive dust would be identified in a dust control plan or similar document, prepared prior to project construction. • Other mitigation measures would include temporary storm water management and erosion and sediment control strategies. • Water turbidity could temporarily increase in the immediate construction area during construction and localized dredging. Measures to control turbidity include permit conditions, use of best management practices, and, if necessary, installing

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
		a barrier (for example, silt curtain) to prevent the migration of a turbid water plume into Hamilton and Gin Lakes (SERI 2005). • The Staff concludes that the overall physical impacts of construction on workers and the local public, buildings, roads, and aesthetics would be SMALL as long as the mitigative actions, such as noise, dust, and traffic control and possible management measures identified by SERI are undertaken. • The conclusion of SMALL impacts by the NRC Staff is predicated on certain assumptions made by the Staff. These include no building of new roads or the former railroad line into the site, and carrying out mitigative actions to reduce physical impacts, such as limiting in-water activity, implementing measures to control noise, dust, and traffic, and other possible management measures identified by SERI.

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
• Impacts of construction on increases in population		• The Staff assumed that 50 percent of the construction workers would be expected to come from within the region and the number of construction workers who might relocate to the region would be a small percentage of the larger communities' population base, the Staff concludes that the likely outcome is the impacts of construction on increases in population within most of the region would be SMALL, and additional mitigation would not be warranted. However, the possibility of a LARGE demographic impact in Claiborne County cannot be excluded. The range of impacts estimated by the NRC Staff is predicated on certain assumptions made by the Staff. These include that not more than 3150 construction workers would be employed at the Grand Gulf ESP site; not less than 50 percent of the construction workers would come from the region within 80 km (50 mi) of the Grand Gulf ESP site; and any

TABLE (3)(i)

RESOLVED SAFETY AND ENVIRONMENTAL ISSUES

Issue	Safety / Environmental	Assumptions / Comments
• Impacts of construction on the regional economy		new workers would choose to live in the larger cities within the region, such as Vicksburg and Jackson, rather than in smaller communities that have less available housing, such as Port Gibson and Fayette. • The conclusion of beneficial moderate impacts in Warren County and small impacts elsewhere by the NRC Staff is predicated on certain assumptions made by the Staff. These include not more than 3150 construction workers would be employed at the Grand Gulf ESP site; not less than 50 percent of the construction workers would come from the region within 80 km (50 mi) of the Grand Gulf ESP site; and any new workers would choose to live in the larger cities within the region, such as Vicksburg and Jackson, rather than in smaller communities that have less available housing, such as Port Gibson and Fayette. • The conclusion of LARGE beneficial