

September 8, 2008

Mr. Tom Williamson
Manager, GGNS COLA Project
Entergy Nuclear
1340 Echelon Parkway
Jackson, MS 39213

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE
ENVIRONMENTAL REVIEW OF THE COMBINED LICENSE APPLICATION
FOR GRAND GULF NUCLEAR STATION, UNIT 3

Dear Mr. Williamson:

Attached are requests for additional information (RAI) generated by the U.S. Nuclear Regulatory Commission (NRC) staff during its review of the Entergy Operations, Inc. Grand Gulf Nuclear Station, Unit 3 environmental report and the site audit conducted in June 2008. The NRC requests that Entergy provide responses to these RAIs within 30 calendar days of this letter in order to support the combined license application review schedule. If you have any questions, please contact me at (301) 415-2272.

Sincerely,

/RA/

Tamsen Dozier, Environmental Project Manager
Environment Projects Branch 2
Division of Site and Environmental Reviews
Office of New Reactors

Docket No.: 52-024

Enclosure: As stated.

cc: See next page

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DATE	08/25/08	08/21/08	09/4/08	09/08/08

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**Requests for Additional Information (RAIs)
Grand Gulf Nuclear Station Unit 3
Combined Operating License Application**

Item	ESRP/ER Section	RAI	Supporting Information
RADIOLOGICAL HEALTH			
1	ER Section 4.5	What is the revised estimated dose to construction workers including that from the Independent Spent Fuel Storage Installation (ISFSI) and from Nitrogen-16 source from main turbine building.	See related Safety RAI.
COST BENEFIT			
2	ESRP Section 10.4.1	Quantify the benefits shown in Table 10.4-201 and the costs shown in Table 10.4-203 in monetary or other appropriate terms whenever practicable and determine their significance to the region.	Use consistent terms (such as present value).
AQUATIC ECOLOGY			
3	ER Section 2.4.2	Provide information on the areas surveyed for mussels on November 20, 2006.	What locations were surveyed visually for mollusk shells? What locations were surveyed in the river? Please provide GPS locations for surveyed areas.
TERRESTRIAL ECOLOGY			

Grand Gulf RAIs

4	ESRP Section 2.4.1	Define the construction footprint for the proposed water pipeline and discuss how the footprint affects the results of the surveys for the five State-listed plants and wetland delineation that were performed.	ER section 2.4.1.1 states that for the purpose of surveying for the five State-listed plant species in the water pipeline corridor, the corridor was assumed to be 100 ft wide. The September 10-13, 2006 and December 10-14, 2006 reconnaissance reports state that the center line location and width of the corridor are unspecified. The April 22-27, 2007 reconnaissance report states that the corridor is assumed to be 200 ft wide for wetland delineation purposes (however, no width was specified in the wetland delineation report of June 2007). The location and spatial extent of the pipeline are thus unclear. Provide the definitive construction footprint for the proposed water pipeline in a figure and GIS file (if different from the GIS file already provided to the staff). State what percentage of the definitive construction footprint was fully surveyed for the five State-listed plants and what percentage was covered by the wetland delineation.
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<p>5</p>	<p>ESRP Section 2.4.1</p>	<p>Provide a figure that depicts the areas surveyed for the five State-listed plants and Louisiana black bear cavity trees and related sign. Provide a figure that depicts the spatial extent of the three wetland types that would be affected by the proposed water pipeline corridor under its preliminary design.</p>	<p>The September 10-13, 2006 reconnaissance report states that plant surveys were conducted in the proposed water pipeline corridor, the onsite transmission line corridor connecting the new power block to the existing switchyard, and the "South Woods." The April 22-27, 2007 reconnaissance report states that the plant surveys were conducted in the fabrication and batch plant area, construction warehouse area, construction laydown area (near the old ball field), and the cooling tower area; however, these are not mentioned in ER section 2.4.1.2.1 (State-listed Plants). The spatial extent of these areas is unclear. Provide a figure depicting all the areas surveyed for plants. For any large areas (e.g., South Woods) also provide survey locations in the figure.</p> <p>The December 10-14 2006 reconnaissance report states that Louisiana black bear surveys were conducted on both sides of the heavy haul road and in the South Woods. The April 22-27 2007 reconnaissance report states that Louisiana black bear surveys were conducted in the area immediately adjacent to the existing switchyard and in the South Woods. The spatial extent of these areas is unclear. Provide a figure depicting all the areas surveyed for Louisiana black bear cavity trees and related sign.</p> <p>The Wetland and other Potentially Jurisdictional Waterbody Identification and Delineation from June 2007 discusses 17.5 acres of wetlands that would be disturbed by the proposed water pipeline corridor under its preliminary design. Provide a figure depicting the 4.2 ac of palustrine, emergent, persistent, seasonally flooded (PEM1C) wetlands; 10.1 ac of palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetlands; and 3.2 ac of palustrine, shrub-scrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetlands.</p>
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6	ESRP Section 2.4.1	Identify areas of the construction footprint that were not surveyed for the 5 State-listed plant species and provide an explanation.	The Grand Gulf ESP EIS (NUREG-1817, Section 4.4.1.4) directs that "...upland and bottomland areas on the Grand Gulf site that would be disturbed by construction ...should undergo a botanical survey prior to initiating such activities" due to the apparently broad range of habitat affinities of the five State-listed plant species. Identify any areas of the construction footprint that were not surveyed for plants and explain why not by contrasting the habitat affinities of the species and available habitat in these areas.
7	ESRP Section 2.4.1	Provide figures and GIS files of occurrences of state or federal species of concern on the Grand Gulf site.	Provide figures and accompanying GIS files depicting the locations of species identified during the reconnaissance visits, i.e., 30 black bear candidate trees, the candidate tree with the cavity, the probable ground den, white walnut locations, etc.
8	ESRP Section 2.4.1	Define "potential upland and bottomland habitats" surveyed for candidate trees for the Louisiana black bear?	ER section 2.4.1.2.2 states that, "Areas in potential upland and bottomland habitats were visually canvassed on December 13-14, 2006 and April 22-27, 2007 at approximately 100-ft. intervals on foot to identify suitable den trees of large diameter." Explain the meaning of "potential upland and bottomland habitats" and how it was decided which habitat onsite was potential habitat.

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9	ESRP Section 4.3.1	Clarify the construction footprint in the South Woods area of the Grand Gulf site.	<p>The second paragraph in ER section 2.4.1.1 states that, "...hardwood stands south and west of the existing cooling towers [are] referred to collectively as the South Woods." The last paragraph in ER section 2.4.1.1 states that, "At the ESP stage, the South Woods area was within an area that may have been utilized for construction parking and laydown during Unit 3 construction. This has been changed and the South Woods is not expected to be utilized for construction or operations of Unit 3." This sentiment is similarly reiterated in the fourth paragraph of ER section 4.3.1.1, "None of the upland forest to be cleared occurs in the South Woods portion of the site..." However, ER Figure 2.1-201, while it does not identify the South Woods specifically, depicts "construction and/or laydown areas" and "proposed construction areas" located south and west of the existing cooling tower (apparently in the South Woods). Provide a statement as to whether there will or will not be construction in the South Woods. If there will be construction and the footprint is as depicted in Figure 2-1.201, note that the staff has already acquired the GIS file(s) that support that figure. However, if the construction footprint for the South Woods is not accurately depicted in Figure 2-1.201, provide a revised figure and accompanying GIS file(s).</p>
10	ESRP Section 5.6.1	Provide information on water pipeline ROW maintenance.	<p>Indicate whether water pipeline ROW maintenance will differ from proposed transmission corridor maintenance and, if so, how.</p>
TRANSMISSION CORRIDORS			

Grand Gulf RAIs

11	Land use ER Sections 2.2, 3.7	Provide information that is available on the following regarding the proposed transmission line corridors: <ul style="list-style-type: none"> • Any routing locational detail that can be provided (topographic, cadastral maps) in addition to Environmental Report (ER) Figure 2.2-201; • Potential restrictions on development associated with projected access corridors to both plant and transmission lines, including rights of way; • Limits to proposed access to transmission or access corridors due to maintenance or seasonal uses (agricultural); • Volume of merchantable timber that is expected to be harvested for commercial use from the proposed transmission corridor; • Expected transportation access to the corridors for construction and for timbering activities; and • Any “forest and wetlands protection and stormwater controls” measures that would be utilized during construction of the proposed transmission corridor. 	Transmission line impacts were left unresolved at the early site permit (ESP) stage.
12	Land Use ER Section 4.1.2	Identify any information available on protected wetlands impacted by the proposed transmission corridor and describe the nature of the impacts, local laws affecting wetlands, and impact mitigation requirements.	Transmission line impacts were left unresolved at the ESP stage.
13	Land Use ER Section 4.1.2	Please provide information available as to the status of National Park Service (NPS) reviews of the proposed right-of-way crossing of the Natchez Trace National Historic Parkway, and the following related information: <ul style="list-style-type: none"> • Any information on the potential NPS National Environmental Policy Act of 1969 (NEPA) process associated with the Natchez Trace crossing of the proposed transmission corridor; and • Any mitigation measures the NPS is requiring to allow siting the proposed transmission corridor. 	Transmission line impacts were left unresolved at the ESP stage.

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<p>14</p>	<p>Aquatic Ecology ER Section 5.6.2</p>	<p>Provide information on existing transmission line right-of-way (ROW) maintenance procedures in areas of special/sensitive areas (e.g., at river crossings and wetlands).</p>	<p>In NUREG 1817, the information provided by Entergy Services concerning ROW maintenance procedures implied that “procedures generally consist of mechanical means (primarily bushhogging)”. No new information was provided in the COLA ER to imply that other procedures, e.g., herbicide applications, were being used for ROW maintenance. During the transmission line tour at the site audit on June 17, 2008, bushhogging or other mechanical procedures were not the primary procedure observed across the Big Black River and around wetlands below the transmission line. Describe the maintenance procedures that will be used for special/sensitive areas for all proposed transmission lines.</p>
<p>15</p>	<p>Terrestrial Ecology ESRP 2.4.1</p>	<p>Provide available “wildlife safe” project designs for proposed transmission line construction. Provide available information on precautions that will be taken when constructing transmission lines in threatened or endangered wildlife habitat?</p>	<p>Part B of Environmental Standard—Line or Substation Construction BMPs (June 2007 Rev. 2) lists construction BMPs for transmission lines. One of these mentions “wildlife safe” project designs for congregations of migratory birds, including raptors. Describe transmission line construction wildlife safe project designs that will be in use when constructing the new transmission line corridors. A second BMP mentions exercising “extreme care” when working in threatened or endangered wildlife habitat. What precautions (extreme care) will be taken to protect threatened or endangered species and associated habitat when constructing transmission lines?</p>

<p>16</p>	<p>Terrestrial Ecology ESRP 4.3.1. and 5.6.1</p>	<p>Regarding vegetation clearing for proposed transmission corridors, provide available information on the following:</p> <ul style="list-style-type: none"> • A description of how easily erodible areas will be cleared in order to minimize or prevent erosion, • An example list of species to be reseeded and indicate any non-native species, and • the State Environmental Stormwater Pollution Standards that will be met. <p>Indicate if the above answers that pertain to transmission corridor clearing differ from clearing onsite for permanent facilities or for temporary (borrow and staging areas, etc.) facilities and, if so, how.</p> <p>Also, after the initial vegetation clearing of transmission corridors, provide available information as to the proportion of mechanical reclearing to chemical herbicide applications to be employed to keep ROWs clear of woody vegetation?</p>	<p>Initial Vegetation Clearing of Transmission Corridors (last revised 11/29/94) states that, “Streams, ditches, ponds or other easily erodible areas should be cleared in a fashion that will minimize or prevent erosion. Re-seeding with an appropriate ground cover may be required. Re-seeding shall be done as recommended by the State’s Soil Conservation Service. All clean-up methods must meet State Environmental Stormwater Pollution Standards.” Describe how easily erodible areas (including streams and wetlands) in new transmission line corridors will be cleared in order to minimize or prevent erosion (i.e., BMPs). Provide an example list of species to be reseeded and indicate non-native species. Which are the State Environmental Stormwater Pollution Standards that will be met for the initial clearing of transmission corridors?</p> <p>Vegetation clearing onsite is likely to be similar in many ways to vegetation clearing for transmission corridors. Indicate if the above answers that pertain to transmission corridor clearing differ from clearing onsite for permanent (e.g., facilities) and temporary (borrow and staging areas, etc.) facilities and, if so, how.</p> <p>Initial Vegetation Clearing of Transmission Corridors also indicates how corridors are initially cleared of vegetation. Transmission Line Corridors “Mechanical Reclearing – Mowing” (last revised 6/17/98) indicates that corridors are recleared to prepare for follow-up chemical herbicide treatments. Transmission Line Corridors: Chemical Herbicide Applications” (last revised 1/10/02) discusses chemical herbicide treatments. After the initial vegetation clearing of transmission corridors, what is the proportion of mechanical reclearing to chemical herbicide applications employed to keep ROWs clear of woody vegetation?</p>
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Grand Gulf RAIs

17	Terrestrial Ecology ESRP 5.6.1	Provide available information as to guidelines that exist and will be followed for transmission lines associated with the Grand Gulf site which will minimize avian electrocutions and collisions?	Indicate specifically which guidelines in "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006" are currently being followed on existing transmission lines and will be followed for new transmission lines for the new nuclear unit, which will minimize avian electrocutions and collisions. Also discuss the use of Rick Bewley's (Entergy Mississippi) perch protectors.
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