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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Lawrence G. McDade, Chairman
Nicholas G. Trikouros
Dr. Richard E. Wardwell

In the Matter of	Docket No. 52-009-ESP
SYSTEM ENERGY RESOURCES, INC.	ASLBP No. 04-823-03-ESP
(Early Site Permit for Grand Gulf Site)	October 3, 2006

ORDER

(Issuing Questions Relating to the Grand Gulf ESP Environmental Impact Statement, Requesting Briefing on Environmental Issues, and Addressing Scheduling Issues)

Questions Relating to the Grand Gulf ESP Environmental Impact Statement

This Board issued a Scheduling Order in which we stated that, on October 3, 2006, we would issue written questions to the NRC Staff relating to the Grand Gulf ESP Environmental Impact Statement (EIS). Having completed our preliminary review of the Grand Gulf EIS, the Board now propounds to the NRC Staff the questions set forth in Attachment A hereto.

The Staff shall file its responses to the questions in Attachment A on or before October 16, 2006. In responding to the Board's questions, the NRC Staff should, to the degree practicable, input its answers into the electronic copy of Attachment A (furnished with this Order) immediately after the Board's question.

If the Staff concludes that it will need additional time to respond to the Board's questions, it should submit a Motion for an Extension of Time on or before October 10, 2006. Likewise, if the Staff desires clarification of any question, it should file a Motion for Clarification on or before October 10, 2006.

The Applicant, System Energy Resources, Inc. (SERI), may file comments on the NRC Staff's answers to the Board's questions within seven (7) days after receipt of the NRC Staff's

answers. To facilitate a prompt reply, the NRC Staff shall provide an electronic copy of its answers to SERI at the same time that they are filed with the Board. SERI shall, to the degree practicable, input its comments into that electronic document immediately after each Board question and NRC Staff answer.

Request for Briefings on Environmental Issues from the NRC Staff and SERI

In addition to directing specific responses to the questions asked of the NRC Staff, we also direct the parties to submit briefs related to the decisions that we must reach in regard to environmental issues. Specifically, Under 10 C.F.R. § 2.104(b)(3) the Board is charged, inter alia, to:

> (1) [d]etermine whether the requirements of Section 102(2)(A), (C), and (E) of the [National Environmental Policy Act (NEPA)] and subpart A of 10 C.F.R. Part 51 have been complied with in the proceeding;
>
> (2) independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken; and
>
> (3) determine, after considering reasonable alternatives, whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.[1]

To better enable the Board to address these specific issues, the NRC Staff and SERI shall, on or before October 16, 2006, file briefs expressly indicating how the record of this proceeding demonstrates that the requirements of Section 102(2)(A), (C), and (E) of NEPA and Subpart A of 10 C.F.R. Part 51 have been satisfied. In addition, these briefs shall identify and describe the conflicting environmental factors contained in the record of this proceeding, and

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[1] 69 Fed. Reg. 2636 (Jan. 16, 2004); see also 10 C.F.R. § 2.104(b)(3). With regard to the final NEPA determination, at the ESP stage a discussion of the benefits, including need for power, is not necessary. See 10 C.F.R. § 52.17(a)(2). Further, the Commission has made clear that at the ESP stage "the board's 'reasonable alternatives' responsibilities are limited" and focus on the consideration and comparison of alternative sites only. System Energy Resources, Inc., CLI-05-17, 62 NRC 5, 48 (2005).

analyze the balance among those conflicting environmental factors, with a view toward assisting the Board to determine the appropriate action to be taken regarding whether the ESP should be issued, denied, or appropriately conditioned to protect environmental values.

As part of the above analysis, the parties should specifically define their interpretation of the "Federal action" at issue in this proceeding, and address whether this ESP is one that can significantly effect the environment (42 U.S.C. § 4332(2)(C)). Given this, discuss whether NEPA is triggered in this proceeding. See Sierra Club v. FERC, 754 F.2d 1506, 1509-10 (9th Cir. 1985); Burbank Anti-Noise Group v. Goldschmidt, 623 F.2d 115, 116 (9th Cir. 1980), cert. denied, 450 U.S. 965 (1981). If one assumes that NEPA is not triggered, how would this affect the Board's obligations under 10 C.F.R. § 2.104(b)(3) in our review of this partial construction permit (10 C.F.R. § 52.21). If NEPA is triggered by this action, the parties should address whether, given the number of Staff assumptions and unresolved matters that are documented in the EIS, the Board has been presented with sufficient information to properly balance the harms and benefits of the proposed action so that it may carefully consider the potential significant environmental effects, or to give this project the required "hard look" envisioned by NEPA. See Marsh v. Oregon Natural Resources, 490 U.S. 360, 374 (1989); NRDC v. U.S. Army Corps of Eng'rs, 399 F. Supp. 2d 386, 404 (S.D.N.Y 2005). In addition, we direct the NRC Staff and SERI to describe whether, and if so how, the Board (on the record before us) can conduct the independent assessment and weighing of environmental factors, and the consideration of reasonable alternatives, that is required under 10 C.F.R. § 2.104(b)(3).

Such briefs shall be limited to no more than twenty (20) pages each, except that, to the extent that either party finds the record needs to be supplemented, such supplemental materials shall be included in an appendix to the briefs and shall not be subject to the page limit.

Administrative Matters

The Board proposes to conduct the Hearing on this matter in Rockville, Maryland during the week of November 13, 2006. Specifically, we propose to conduct a Prehearing Conference on the morning of November 13, 2006, beginning at 10:00 a.m. The hearing itself would then begin on the morning of November 14, 2006, and would continue thereafter from day to day until completed.

We direct that on or before October 6, 2006, the parties notify the Board of any objection that they may have to the proposed location of, or schedule for, the Hearing. Any objection shall explain the basis for the objection, and shall also explain the reasons for and the benefits to be derived by the parties proposed alternatives.

IT IS SO ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD[2]

/RA by E. Roy Hawkens for/

Lawrence G. McDade, Chairman
ADMINISTRATIVE JUDGE

/RA/

Nicholas G. Trikouros
ADMINISTRATIVE JUDGE

/RA/

Dr. Richard E. Wardwell
ADMINISTRATIVE JUDGE

Rockville, Maryland
October 3, 2006

[2] Copies of this Order were sent this date by Internet e-mail transmission to: (1) Counsel for the NRC Staff and (2) Counsel for SERI.

ATTACHMENT A

Grand Gulf ESP
EIS Inquiries

Inquiry No.	EIS Page	EIS Section	Inquiry
1	General	General	1. Given the Staff's experience with other EISs for ESPs, of what use will this permit, if approved, be to the Applicant (SERI), in light of the number of unresolved issues and the number of items deferred to the COL stage? 2. In order for the Board to have a better perspective of what is finalized by this EIS, please list and discuss the specific environmental impacts that the Staff believes have been resolved at the ESP stage and, accordingly, need not be addressed at the COL stage.
2	General	General	A separate PPE table is included in the SER (Table 1.3-1) and the EIS (Appendix I), with some overlap between these two tables. Why is there not a single PPE table for both the SER and the EIS so that all of the PPE parameters and their definitions are in one place?
3	General	General	There are numerous items in the EIS that are either characterized as unresolved and/or deferred to the COL stage. 1. What criteria was used to delineate an item as a license condition, COL action item, or merely one deferred to the COL stage? 2. Is there a comprehensive list of all of these items? If yes, please provide a copy. 3. If no list has been compiled, please explain how the Staff intends to: (A) ensure that each item is in fact performed at the COL stage; (B) ensure that a COL Applicant will not be able to improperly claim that a particular item was resolved at the ESP stage when in fact it was not. 4. Are there any license and/or regulatory processes in place to assure that all these items are in fact performed at the COL stage?

Inquiry No.	EIS Page	EIS Section	Inquiry
4	General	General	The EIS states that it "used its experience and judgment to adapt the review guidance in the ESRP and to develop assumptions necessary to evaluate impacts to certain environmental resources to account for . . . missing information [from the SERI ESP application]" (EIS at 3-4). 1. Has the Staff prepared a comprehensive list of all the assumptions it has made with respect to either site characteristics or with respect to future actions by the Applicant? 2. Given the fact that depending on how these assumptions are ultimately resolved, there could be significant impacts to the environment, how does the Staff intend to assure that its assumptions are properly tracked, verified, incorporated, and corrected (as needed), during the COL process?
5	General	General	Please identify the parameters and environmental impacts for which the combined effects of GGNS Unit 1 and the GGESP facility are/will be considered.
6	General	App. I	The PPE table in Appendix I is incomplete with respect to the guidance found in NEI-01-02, and with respect to the PPE tables found in other ESP SERs and EISs (e.g. Clinton ESP) prepared by the Staff. Why does the Staff not utilize a consistent and uniform approach for establishing the PPE given that the PPE forms the basis for evaluating the acceptability of a particular plant design?
7	J-2 to J-12	App. J	1. Table J-1: Please provide the reference section/page numbers for the ER, or the ADAMS accession number and date of the Applicant's RAI response, in which the Applicant's assumptions are initially stated? 2. Table J-2: Please provide the reference page numbers for the EIS, in which the Applicant's assumptions are initially stated?
8	J-12 to J-16	App. J	Table J-2 does not appear to list all of the staff assumptions (e.g. the Staff's assumptions regarding endangered species (EIS at 4-28)). Please explain the Staff's rationale for not including all documented Staff assumptions in Table J-2.
9	General	App. J	Will the ESP license contain any assurance that the assumptions made by the Applicant – in response to Staff inquiries – will be tracked, verified, incorporated, and corrected (as needed), during the COL process?

Inquiry No.	EIS Page	EIS Section	Inquiry
10	2-18	2.4	Under the upland plain beneath the GGNS, the general geologic strata consists of 75' of loess over 40' of alluvial deposits of the Upland Complex over the Catahoula formation. In the lowland between the bluff and Mississippi River, the subsurface consists of 100 feet of Holocene alluvium over the Catahoula. 1. Is this description consistent with that provided in the FSSAR? 2. How does the Holocene alluvium transition to the Upland Complex? 3. What is the relationship between the Holocene alluvium and the Upland Alluvium, Old Alluvium, Young Alluvium, and New Alluvium discussed in the SER?
11	2-19	2.5	1. Does the monitoring of water for radiologic constituents include both surface and groundwater? If so, what are the temporal background, construction, and operational results to date? 2. Is there sufficient background data to quantify pre-development groundwater quality (prior to any site development), and existing operational groundwater quality data that might be representative of the "baseline" conditions for the ESP site?
12	2-24	2.6.1.2	1. Is the Catahoula formation an unconfined or confined aquifer? 2. Are the aquifers in the loess and alluvium (i.e. the Upland Complex) connected? If so, what data are available to ascertain whether the Upland Complex acts as a confined or unconfined aquifer?
13	2-29	2.6.3.2	What is the site data to support the statement that the "water quality of the groundwater in the Catahoula formation does not appear to have been influenced by the construction or operation of the GGNS facility"?
14	2-29	2.6.3.3	1. Why has the existing thermal plume not been monitored sufficiently to calibrate the CORMIX model? 2. What evidence is there that the Clean Water Act § 316(a) monitoring would provide the calibration data when the historic monitoring has not? 3. Please explain how continuation of the existing monitoring program at GGNS could provide adequate thermal monitoring for a new plant when the program has not even provided sufficient data to date to calibrate the model?

Inquiry No.	EIS Page	EIS Section	Inquiry
15	2-30	2.6.3.4	1. Please define “limited water quality baseline of the affected environment.” 2. Are the existing or future baseline data adequate to allow discrimination in the future between existing impacts and any potential new releases from a new plant?
16	2-31	2.7.1	Explain how the Army Corps of Engineers attempted to stabilize the eastern bank of the Mississippi in the Grand Gulf area and why the Staff believes that this will be successful?
17	2-76	2.8.2.4	The EIS states that 800 campers use the Warner-Tully Camp facility per year. What is the maximum capacity of the camp at any given time and how many days per year is the camp facility occupied?
18	2-83	2.9.3	Explain the visual impact of the proposed cooling tower on the Grand Gulf Military Park.
19	3-1	3.0	The EIS states that “SERI’s application encompasses construction and operation of one or more new nuclear units generating as much as 8600 MW(t) or 3000 MW(e) output.” Please clarify how this comports with the SER, which identifies a thermal limit of 4300 MW(t) or 2000 MW(e). The PPE also identifies a limit of only 4300 MW(e).
20	3-6	3.2	The last paragraph on this page is not clear. Are Tables 4-3 and 5-17 complete summaries of the environmental impacts the Staff would assess during the COL stage?
21	3-7	3.2.1.2	1. Why do the sources of water for the proposed facility include both a new well and the new intake on the Mississippi River? Wouldn’t the intake serve all water needs? 2. What is the characterization of the sediments expected to be filtered from the Mississippi River, and is there any possibility that the sediments would require special handling and disposal?

Inquiry No.	EIS Page	EIS Section	Inquiry
22	3-10	3.2.2.2	The EIS states that "Effluent from the Grand Gulf ESP facility (including blowdown, excess service water, sanitary waste, filter process waste, radwaste effluent, and miscellaneous drain effluent) would be combined with the existing discharges from GGNS Unit 1 facility downstream from the embayment and intake." In the same section it states that "the maximum discharge from all sources would be 2630 L/s (41,700 gpm)." 1. It appears that the maximum discharge number is for the ESP facility only. Shouldn't the combined flow from GGNS Unit 1 and the ESP facility be considered? 2. Why is the maximum discharge (and its maximum temperature) not a PPE parameter?
23	3-13	3.3	What is the basis for the Staff's assumption that the separate distribution line, which runs from the Port Gibson substation to the GGNS switchyard to provide offsite power to GGNS, will "be sufficient to service any new units at the ESP site without modification"?
24	4-2	4.1.1	Why have the Mississippi River sediments not been characterized to indicate potential handling problems with either the water treatment sludge or dredged material?
25	4-3	4.1.1	Why is the impact of rail service classified as an unresolved issued, when it seems it should be a "non-issue"? The Applicant did not evaluate the use of rail service in its ESP application, and the Staff assumed that it would not be restored.
26	4-5	4.1.2	Why doesn't the Staff consider the impacts from a new or wider transmission line rights-of-way a fundamental site condition that should be characterized as a basic part of an ESP application?
27	4-8	4.3.2	1. Why did the Staff not require additional hydraulic testing of the aquifer as a fundamental site parameter that needs to be quantified for an ESP? 2. If the transmissivity of the aquifer is extremely low, couldn't the impacts be LARGE, and not small or moderate as indicated in the EIS? 3. Is there any data to show that there is even minimal withdrawal capacity at the ESP site, so as to assure that this characteristic is not a fatal flaw in selection of the site?

Inquiry No.	EIS Page	EIS Section	Inquiry
28	4-10	4.3.3	1. What will happen to the dredged spoils, and will any characterization testing be performed to assure minimal water quality impacts as a result of the disturbance? 2. Why was the Applicant not required to perform additional water quality testing of the aquifer as a fundamental site parameter that needs to be quantified for an ESP? 3. If the induced water quality is of such poor nature that the aquifer would be irreparably harmed with additional pumping that is required for the ESP plant, couldn't the impact be LARGE?
29	4-15	4.4.1.3	Because temporary construction areas in forest habitat would be restored, the Staff assumes that the impacts would be temporary and would therefore be SMALL. What is the basis for this assumption?
30	4-17 to 4-18	4.4.1.4	1. What procedures are in place to assure that the Applicant will perform the botanical survey prior to disturbing any upland or bottom land on the ESP site? 2. Why isn't this classified as a COL action item or a proposed license condition?
31	4-18	4.4.2	1. What is the estimated acreage of benthic macroinvertebrates and shoreline habitat that will be disturbed during ESP construction? 2. If this has not been estimated, why not? Shouldn't this be considered a fundamental site parameter that needs to be quantified for an ESP?
32	4-18 to 4-20	4.4.2	1. How can the impact to aquatic ecosystems be designated without first quantifying to some degree the acreage of aquatic impact? 2. What assurances are in place that impacts to aquatic ecosystems could be mitigated, since the size of the impact is unknown? 3. The EIS states that the Staff expects SERI will develop and implement plans for the possible widening of the transmission rights-of-way that will have minimal impact on Bayou Pierre and the crystal darter (EIS at 4-20). What is the basis for this expectation, and how will it be enforced at the COL stage?

Inquiry No.	EIS Page	EIS Section	Inquiry
33	4-21 to 4-22	4.4.3.1	1. What procedures are in place to assure that the Applicant will survey the Mississippi River for potential nest trees, bald cypress, and nesting eagles during the reproductive season? 2. Why isn't the requirement to perform the survey a COL action item or a proposed license condition?
34	4-23	4.4.3.1	If the Franklin transmission line right-of-way is expanded, what procedures are in place to assure that the USFS Homochitto National Forest is in fact contacted prior to any forest clearing, so that it could ascertain the proximity of the red-cockaded woodpecker.
35	4-25	4.4.3.1	1. What systems are in place to assure that, prior to disturbing any upland or bottomland forested wetland or upland hardwood forest, a survey is conducted to determine the use of the area by bears and if denning bears are present, that construction activities will be prohibited from December to April? 2. Given the potential prohibition on construction, shouldn't the potential for denning bears be ascertained to some degree at the ESP stage? 3. How will the prohibition against harvesting actual or candidate den sites/trees be captured at the COL stage? How will this prohibition be implemented in the field to assure success?
36	4-26 to 4-27	4.4.3.1	What procedures are in place to assure that: 1. If the Franklin transmission line right-of-way needs widening, SERI will work with the appropriate Federal and State agencies and the transmission line owner to develop plans to mitigate impacts to the bayou darter; and 2. SERI will survey intake and discharge structure locations for fat pocketbook mussels, and relocate any species found?
37	4-28	4.4.3.3	While the impact of construction on federally listed species would be small, and additional mitigation would not be warranted beyond that identified in the EIS, how will the many mitigation requirements be identified in the ESP license and tracked at the COL stage?
38	4-30	4.5.1.1	The EIS states that mitigation measures to control fugitive dust would be prepared prior to construction. How will this commitment be captured at the COL stage?

Inquiry No.	EIS Page	EIS Section	Inquiry
39	4-32	4.5.1.5	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 . . . identified by SERI are undertaken." It appears that SERI has not yet drafted these control plans, and has only identified the issues. 1. If that is correct, what is the basis for the Staff's conclusion that these plans will be adequate? 2. Once plans are drafted by SERI, how will the commitments noted above be captured at the COL stage?
40	4-41	4.5.4.4	Please clarify if there is sufficient wastewater treatment capacity to handle the large construction force. If not, how this will be handled?
41	4-41	4.5.4.4	How will the Staff ensure that the Catahoula formation will not be impacted by the withdrawal of too much water?
42	4-42	4.5.4.4	How will the Staff ensure that Port Gibson's water and sewer system will not be significantly and negatively impacted by the influx of residents due to the additional plant?
43	4-56	4.10	How will SERI's compliance with these regulatory requirements be monitored and enforced?
44	4-59	Table 4-3	The construction impacts on land use, water use, water quality, and terrestrial ecosystems are all listed as "unresolved" but given an "estimated" impact. 1. Discuss in greater detail how each of these impacts were estimated and the validity of these estimates. 2. Summarize what specific site studies would resolve any of these items, and explain why the Applicant was not asked to perform some or all of these site studies as part of the ESP application. 3. Does any inaccuracy in these estimates make the alternatives analysis virtually meaningless?
45	5-1	Intro. to 5.0	1. Please list the mitigative measures planned by the various State and county governments that were used in the Staff's evaluation of impacts. 2. How will these measures be tracked in the ESP license documentation, and how will the Staff assure that they are implemented during the COL stage?

Inquiry No.	EIS Page	EIS Section	Inquiry
46	5-7	5.3.1	The EIS supports its conclusion regarding the impact on the groundwater flow pattern "based on the character of the shallow groundwater system." Please summarize the data used to characterize the shallow groundwater system.
47	5-7 to 5-9	5.3.2	What is the feasibility of treating Mississippi River water that is pumped directly from the river, with regards to treatment costs, materials handling, and waste sediment disposal?
48	5-7	5.3.2	In regards to water use impacts, the EIS states that "the staff's analysis is not to the depth warranted for actual operation," yet it is "sufficient for the purpose of comparing the proposed action to the alternatives." What is the basis for this statement?
49	5-8	5.3.2	Without any site data, how can a LARGE impact – with respect to the Catahoula formation – be eliminated from consideration?
50	5-12	5.3.3.2	Why did SERI not provide the bounds of concentrations of chemical effluents to be discharged in Streams A and B?
51	5-40	5.5.4.4	Statements made at the limited appearance session held on August 28, 2006 indicated deficient emergency medical capacity and transportation logistics. Please reconcile these statements with the degree of impact indicated in the EIS.
52	5-54 to 5-57	Tables 5-5; 5-6; 5-7	1. Why were the analyses contained in these tables performed for only 1 unit? 2. Would the effects be linear for multiple units? 3. Why was the existing plant not included, particularly since Table 5-8 provides a comparison against 40 CFR Pt. 190 standards, which includes the existing plant and 2 additional plants?

Inquiry No.	EIS Page	EIS Section	Inquiry
53	5-65 to 5-66	5.10.1	In Table 5-10 the Staff indicates that SERI's X/Q values are not acceptable for use in environmental reviews. On the top of page 5-66, the Staff indicates that the X/Q values are acceptable if they fall within the bounds set by the Staff's X/Q values. 1. Please clarify if the "acceptable values" are those set by the Staff or by SERI. 2. The "adverse" values calculated by SERI are seemingly more conservative than the typical values used by Staff. Why aren't the adverse X/Q values calculated by SERI used as conservative values? 3. Is it appropriate for the Staff to provide X/Q values for this site, especially if they are less conservative than the Applicant's values.
54	5-67	5.10.1	Why is the conservative analysis performed for design certification appropriate for safety analysis, "but overly conservative for environmental reviews"?
55	5-78	5.10.2.3	The GEIS for license renewals assumes a $1x10^{-4}$ Ryr^{-1} probability for melt-through. Please explain the basis for this assumption in the GEIS, and why is it applicable for an ESP.
56	5-82 to 5-84	Table 5-17	The operational impacts on water use and water quality are listed as unresolved but given an "estimated" impact of SMALL. 1. Discuss in more detail how each of these impacts were estimated and the validity of these estimates. 2. Summarize what specific site studies would resolve any of these items, and explain why the Applicant was not asked to perform some or all of these basic site studies as part of the ESP application. 3. Does any inaccuracy in these estimates make alternative analyses virtually meaningless?
57	6-2	6.1.1	The EIS states that it is using the PPE power rating of 8600 MW(t) with a net electrical output of 3000 MW(e). A review of the PPE in Appendix I indicates a power rating of 4300 MW(t). SSAR § 1.3.1.4 indicates that the site target value for electrical output is 2000 MW(e). A brief review of other ESPs indicates a correspondence between the PPE values and the values utilized in their EIS analyses. Please clarify this apparent discrepancy.

Inquiry No.	EIS Page	EIS Section	Inquiry
58	6-7	6.1.1	The Staff indicates that in the review and evaluation of the environmental impacts of the fuel cycle, they used the stated capacity factor in the SERI PPE of 96 percent. Please identify the PPE table which provides this capacity factor.
59	6-16	6.1.2.1	The EIS states that the 1000 MW(e) LWR scaled plant would require about 160 MT of enriched uranium fuel annually. This number is used in subsequent analyses. The reference plant in Table 6-1 (EIS at 6-3) is indicated on page 6-7 to require 35 MTU annually (EIS at 6-7). Since the scaled plant is a factor of 4 greater than the reference plant, why is the number not 140 MTU?
60	6-42	6.3	How will decommissioning issues be captured at the COL stage?
61	General	7.0	1. It is not clear to the Board how cumulative impacts were evaluated. Please clarify the nature of the Staff's review. 2. How is cumulative impact being defined. Is it the sum of construction/operations/decommissioning of the proposed ESP plant(s), the sum of synergy from several different impacts, or the sum of the impacts from the existing plant and the proposed ESP plant(s))?
62	7-3	7.3	The EIS states that groundwater considerations reflected steady-state drawdown. How could the shape of the drawdown curve be established without aquifer characterization?
63	7-7	7.5	What data are available to ascertain fish distribution in the Mississippi River to assure that any change in the location of the intake structure would be away from areas of higher fish concentration?
64	7-12	7.10	The EIS states that "several areas . . . have the <u>potential</u> for a MODERATE impact" and "mitigation measures may be warranted." (emphasis added). How is this to be managed during the COL stage and who will determine when mitigation is warranted and when to implement these mitigation measures?

Inquiry No.	EIS Page	EIS Section	Inquiry
65	8-2	8.1	One of the ESP benefits identified, relative to the no-action alternative, is the ability to bank sites on which nuclear plants may be located. Other benefits involve the early resolution of issues and the facilitation of future construction decisions. What is the significance of these benefits given the numerous unresolved issues, assumptions, etc., identified in this EIS and also the decision to not provide a site redress plan?
66	8-2	8.1	1. If the no-action alternative is just not issuing an ESP permit, has the Staff quantified the benefits achieved with issuing an ESP? 2. What is the difference between the no-action alternative and issuing this ESP with so many unresolved issues and items deferred to the COL stage that none of the ESP goals is effectively achieved?
67	8-3	8.2	1. What is the difference between a “target value for the desired electrical output,” and the “output level” presented in the PPE? 2. Why wasn’t the 3000 MW(e) presented in the PPE used in the alternative analysis, instead of the 2000 MW(e) target value established by SERI?
68	8-5	8.2.1	What is the basis for the Staff’s statement that purchasing power or re-activating old plants are not reasonable alternatives to providing power?
69	8-10	8.2.2.1	Why does cooling makeup water for a coal power plant have a greater impact than for a nuclear plant?
70	8-26	8.3	Couldn’t it be shown that all the unresolved construction and operational issues with this ESP (see Tables 4-3 & 5-17) might also apply to other types of power plants so that a comparison (Table 8-4) is meaningless?
71	8-28	8.3.1	Please elaborate as to why the EPA determined that dry cooling is not the best technology for minimizing adverse environmental impacts, since it seems that this conclusion is predominantly based on economic reasons associated with the plant.
72	8-30	8.3.2.4	How can an ESP application be considered sufficient without an assessment of the practicality of treating the water directly pulled from the Mississippi River? Isn’t it possible for the treatment costs and effluent (i.e. sediment sludge) disposal to be high enough to make this option infeasible?

Inquiry No.	EIS Page	EIS Section	Inquiry
73	General	8.4	There does not seem to be much discussion of the analyses performed in defining Entergy's ROI & and the alternative site selection process. Please elaborate on how the Staff evaluated: 1. the adequacy of the Applicant's analysis of its ROI and selection of alternative sites; 2. the general site screening process; 3. the decision to reduce the alternative sites from 7 to 4; and 4. the decision to reduce the alternative sites from 4 to 1.
74	8-33	8.4.2.1	Please explain the basis for Entergy's conclusion that the Waterford-3 and Arkansas Nuclear sites are less suitable than Grand Gulf, and how the Staff analyzed that representation.
75	8-34	Table 8-5	Please explain the "Relative Weighing Factors" on Table 8-5, including how they were developed and how they are applied.
76	8-40; 8-59; 8-80	8.5.1.3; 8.5.2.3; 8.5.3.3	1. Isn't it possible for the Staff to determine whether the transmission lines at River Bend (EIS at 8-40), Pilgrim (id. at 8-59), and Fitzpatrick (id. at 8-80) have the capacity to handle a new plant rather than just assuming that they do not have enough capacity? 2. What is the basis for the Staff's assumption that a new transmission line and right-of-way would be needed at River Bend, Pilgrim, and Fitzpatrick, respectively. 3. At what length does a new transmission line become a long distance?
77	8-58	8.5.2.2	Please explain why the quantity of makeup water and blowdown discharge are expected to be higher at Pilgrim than at Grand Gulf.
78	General	8.5.2.3	This section appears to be a repetition of the Applicant's submittal to the Staff, with a conclusory statement of impact. Please elaborate on the Staff's analysis that supports assigning the categorical impacts to the various components of terrestrial resources.
79	8-65	8.5.2.3	1. What is the basis for the statement that Pilgrim would use cooling towers for any new units? 2. Please elaborate on the basis for the Staff's conclusion that "there could be damage to offsite vegetation resulting from salt drift from operation of cooling towers" at the Pilgrim site.

Inquiry No.	EIS Page	EIS Section	Inquiry
80	8-72	8.5.2.5	Please elaborate on how the MODERATE adverse socio-economic impact was derived for Pilgrim.
81	8-83	8.5.3.3	Why is it assumed that cooling towers would be used for a new plant at the Fitzpatrick site when the existing plant uses once-through cooling?
82	8-99	8.5.4.3	What is the title and full citation for NCRP 1991? It is not listed in section 8.7 (References).
83	8-100	8.5.4.5	What is the basis for the Staff's conclusion that treated water from the surface water sources could be used if groundwater impacts were significant?
84	8-102 to 8-103	Tables 8-13 & 8-14	1. The two tables list water use and water quality impacts as SMALL, yet in text the Staff justifies these impacts as equal to the ESP site, which the Staff states are unresolved. Please clarify this inconsistency. 2. While BMPs and the large size of the water body supports the generic impact assessment for surface water, can the same be said for the potential impact on aquifer levels?
85	9-2	9.1	It is stated that the same considerations and assumptions for unresolved issues at the proposed ESP site were applied to alternative sites without incorporating any differentiating site characteristics. Explain why this does not "force fit" similar impact results, which further undermines the usefulness of the alternative analyses?
86	9-3 to 9-4	Tables 9-1 & 9-2	Table 9-1 (construction) lists as unresolved impacts on land use, water use, water quality, and terrestrial ecosystems. Table 9-2 (operations) lists as unresolved impacts on water use and water quality. In each case these items are assigned an "estimated" impact. 1. Does the inaccuracy in the assigned impacts rendered the alternatives analyses of marginal use? 2. How do you suggest the Board proceed in making its independent "weighing of conflicting factors" when many of the critical site issues are unresolved, due to lack of specific studies?
87	9-8	9.4	Hasn't the conclusion that "no significant environmental impacts would be avoided by the no action alternative" been1 predetermined to some degree, due to the many assumptions made by the Staff, as a result of the paucity of site specific characterization data available for this analysis?

Inquiry No.	EIS Page	EIS Section	Inquiry
88	10-5	Table 10-1	Table 10-1 implies that it lists all of the unavoidable adverse environmental impacts from construction. 1. How is this possible since land use, hydrological/water use/quality, and ecological/terrestrial issues are all unresolved? 2. What is the Staff's basis for stating that groundwater impacts will be localized and temporary since it is an unresolved issue?
89	10-6	Table 10-2	Table 10-2 implies that it lists all of the unavoidable adverse environmental impacts from operations. How is this possible since hydrological/water use/quality issues are unresolved?
90	10-9 to 10-10	10.5	As mentioned in previous questions, the Staff states that the Applicant's proposed ESP has been analyzed in detail; however, the number of unresolved issues that are fundamentally site driven (summarized in Tables 9-1 & 9-2), raise basic questions: 1. Is there any real validity to the comparison of impacts that "assign" impacts for unresolved issues? 2. Of what use is this EIS given that most of it will need to be repeated at the COL stage? 3. What are the options to the Applicant if the Board decides there is insufficient information for it to make its independent "weighing of conflicting factors?"

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
SYSTEM ENERGY RESOURCES, INC.	)	Docket No. 52-009-ESP
	)	
	)	
(Early Site Permit for Grand Gulf ESP Site)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB ORDER (ISSUING QUESTIONS RELATING TO THE GRAND GULF ESP ENVIRONMENTAL IMPACT STATEMENT, REQUESTING BRIEFING ON ENVIRONMENTAL ISSUES, AND ADDRESSING SCHEDULING ISSUES) have been served upon the following persons by U.S. mail, first class, or through NRC internal distribution.

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Docket No. 52-009-ESP
LB ORDER (ISSUING QUESTIONS RELATING TO THE
GRAND GULF ESP ENVIRONMENTAL IMPACT STATEMENT,
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Office of the Secretary of the Commission

Dated at Rockville, Maryland,
this 3rd day of October 2006