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Date: Thu, Jul 14, 2005 3:03 PM  
Subject: Public Citizen Comments on Grand Gulf ESP Draft EIS

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Dear Mr. Lesar:

Attached you will find the comments of Public Citizen on the NRC's draft Environmental Impact Statement (EIS) for the Early Site Permit (ESP) at the Grand Gulf Nuclear Station operated by System Energy Resources, Inc., a subsidiary of Entergy Corporation. These comments are presented in response to a notice published in the April 28, 2005 issue of the Federal Register (Vol. 70, No. 81, pg. 22155).

4/28/05  
70 FR 22155  
338

We hope that our comments and recommendations on the draft EIS are considered seriously and taken into account before the NRC issues its final EIS on this project.

For the reasons presented herein, Public Citizen views the draft EIS for the Grand Gulf ESP as deficient, and we disagree with the NRC staff's recommendation that the ESP should be granted. Please enter these comments into the official record on this proceeding.

Sincerely,

Brendan Hoffman  
Campaign Organizer  
Public Citizen's Critical Mass Energy Program

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Call = J. Wilson (JHW1)  
C. Guerrero (CX83)

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July 14, 2005

Michael T. Lesar  
Chief, Rules and Directives Branch  
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U.S. Nuclear Regulatory Commission  
Mail Stop T6-D59  
Washington, D.C. 20555-0001

**Re: Comments on the Draft Environmental Impact Statement for an Early Site Permit (ESP) at the Grand Gulf ESP Site (NUREG-1817)**

Dear Mr. Lesar:

Enclosed you will find the comments of Public Citizen on the NRC's draft Environmental Impact Statement (EIS) for the Early Site Permit (ESP) at the Grand Gulf Nuclear Station operated by System Energy Resources, Inc., a subsidiary of Entergy Corporation. These comments are presented in response to a notice published in the April 28, 2005 issue of the *Federal Register* (Vol. 70, No. 81, pg. 22155).

We hope that our comments and recommendations on the draft EIS are considered seriously and taken into account before the NRC issues its final EIS on this project.

For the reasons presented herein, Public Citizen views the draft EIS for the Grand Gulf ESP as deficient, and we disagree with the NRC staff's recommendation that the ESP should be granted. Please enter these comments into the official record on this proceeding.

Sincerely,

Joseph P. Malherek  
Policy Analyst, Public Citizen's Critical Mass Energy Program

[Enclosure]

# Public Citizen's Comments on the NRC's Draft Environmental Impact Statement (EIS) for an Early Site Permit (ESP) at the Grand Gulf ESP Site

## General Comments on the NRC's ESP Licensing Process

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According to the draft Environmental Impact Statement (EIS), an Early Site Permit (ESP) is designed as a "Commission approval of a location for siting one or more nuclear power facilities and is a separate action from the filing of an application for a construction permit [CP] or combined construction permit and operating license [COL]" (xxiii). Yet, this draft EIS fails to consider or to fully acknowledge numerous environmental issues that could demonstrate that the Grand Gulf site is not suitable for an additional nuclear unit. The arbitrary separation of the ESP and COL processes compromises the ability of the U.S. Nuclear Regulatory Commission (NRC) to perform a thorough and adequate evaluation—at either stage or in total—of the potential environmental impacts from new reactor development. Under this regime—designed to "provide stability in the licensing process" (EIS, § 1.3)—far too many environmental impact considerations have been deferred to the COL stage of the licensing process. Time and time again throughout the draft EIS, the NRC staff reports its incapacity to conduct a realistic environmental evaluation because a specific reactor design has not yet been chosen by the applicant. Unfortunately, this disjointed method renders much of this environmental evaluation mere guesswork and conjecture.

In comments to the NRC regarding a draft EIS for a similar ESP sought by the energy company Dominion at its North Anna Power Station, the U.S. Environmental Protection Agency (EPA) registered its reservations with this licensing scheme: "EPA has concerns with this approach since it ignores the justification for the power plant addition in the early stage of project development as well as biases the subsequent energy alternative analysis toward nuclear power under the second EIS since the NRC would have approved the suitability under the ESP."<sup>1</sup> The EPA underscored its concerns by pointing out the artificial twenty-year horizon allotted under the ESP, during which time circumstances and technologies may change dramatically, rendering the conclusions of the EIS moot. The EPA further noted that, typically, if an action has not taken place within three years of an EIS, a supplemental EIS is required.<sup>2</sup> Public Citizen agrees with the EPA's concerns about this problematic licensing disjunction.

The operator of the Grand Gulf Nuclear Station (GGNS)—System Energy Resources, Inc. (SERI), a subsidiary of Entergy Corporation—did not include in its ESP application a "Site Redress Plan" and so would not be allowed to perform any site-preparation activities prior to issuance of a CP or COL (EIS, § 1.1.2). However, a second reactor, cooling tower, and ancillary structures that were partially constructed at the GGNS may be suitable for completion.

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<sup>1</sup> United States Environmental Protection Agency, "Comments to the Draft Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site – NUREG 1811 (North Anna ESP project), CEQ # 040569," letter from William Arguto, NEPA Team Leader, EPA Region III, to Jack Cushing, NRC, March 1, 2005.

<sup>2</sup> Ibid.

While SERI has not firmly committed to constructing a new nuclear unit at the GGNS or even selected a specific reactor design (EIS, pg. 1-7), its parent, Entergy, is part of an industry consortium called NuStart Energy Development that plans to apply for a COL. If granted an ESP, SERI would have overcome a significant regulatory hurdle while numerous important issues, such as the need for power and the indefinite storage of additional waste onsite, have not been addressed.<sup>3</sup>

## **Plant Parameter Envelope**

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### **The Vagueness of the PPE**

No specific plant design has been chosen for the new nuclear unit at the GGNS; instead, a plant parameter envelope (PPE)—a set of “bounding parameters”—has been specified (EIS, § 3.2). The PPE encompasses “one or two new nuclear units generating as much as 8600 megawatts thermal (MW(t)) or 3000 megawatts electric (MW(e)) output” (EIS, § 3.0).

The scope of reactor types considered within the PPE—including five light water reactors (LWR) and two gas-cooled reactor types, not all of which have been approved by the NRC (EIS, § 3.2)—is far too broad, making it impossible to provide a reasonably precise judgment of the environmental impact of a new nuclear unit at the GGNS, especially considering that SERI is not even required to employ any one of these designs if it ultimately decides to build a new nuclear unit at the GGNS (EIS, pg. 3-4). The EPA, in commenting on the draft EIS for a similar new nuclear development, criticized the NRC for this imprecision, noting that “[t]here is inadequate design information available for some of the proposed units from which to make accurate environmental assessments of the impacts.”<sup>4</sup>

The inaccuracy of this review system is belied by the NRC staff's admission that they neglected to review SERI's PPE values for correctness (EIS, pg. 3-5). Furthermore, SERI has considered a wet-dry hybrid design for its cooling system, but this model not included in the PPE (EIS, § 3.2.2). It is improper for the NRC to assume that a set of bounding criteria can replace with any degree of precision the kind of evaluation that would be performed referencing a particular type of reactor.

### **Accident Scenarios**

In its analysis of the potential consequences of “design basis” accidents, SERI used the characteristics of two reactor designs—the Advanced Boiling Water Reactor (ABWR) and the Advanced Pressurized Water Reactor (AP1000)—assuming the impacts of such accidents would bound those of other possible reactor designs, a premise accepted by the NRC in its evaluation (EIS, § 5.10.1). For its analysis of “severe” accidents, SERI evaluates the consequences for the current generation reactors—not of the kind that it would build at the GGNS (EIS, pg. 5-63). How can the NRC reasonably judge accident consequences when several of the potential reactor designs proffered by SERI have never been deployed?

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<sup>3</sup> The NRC's regulations at 10 CFR Part 52.17(a)(2) note that ESP applications do not need to include “an assessment of the benefits (for example, need for power) of the proposed action.”

<sup>4</sup> U.S. Environmental Protection Agency, “Comments to Draft Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site,” April 11, 2005.

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## National Environmental Policy Act Requirements

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The draft EIS fails to adequately execute the requirements of the National Environmental Policy Act (NEPA) by not adequately providing a "detailed statement" of (1) alternatives to the proposed action, (2) unavoidable environmental impacts, (3) irretrievable commitments of resources, and (3) the relationship between short-term uses of the environment and long-term productivity [42 U.S.C. § 4332(C)].

Instead of a thorough evaluation, these issues receive only brief, perfunctory attention in Chapter 10 of the draft EIS, and the NRC staff is almost glib in dismissing energy conservation as a reasonable alternative to the proposed action (EIS, pg. 8-5).

### Alternative Energy Sources

Regarding these NEPA requirements, of particular concern to Public Citizen is the deficient consideration of renewable energy sources in the draft EIS, which the staff considers to be unreasonable (§ 8.2.3). While the evaluation does consider renewable energy sources as an alternative, it does not give a fair and thorough review of the potential of clean, sustainable energy, and it relies partly on evaluations performed by SERI (*see* EIS, § 8.2.3).

The evaluation of alternatives to the proposed action in the EIS fails to achieve the requirements of 40 C.F.R. 1502.14, which compels agencies, *inter alia*, to "devote substantial treatment to each alternative considered in detail." While the draft EIS gives fair attention to alternative sites for a new reactor, it gives only scant attention to renewable energy alternatives.

The draft EIS overstates the impacts of clean energy alternatives and understates the impacts of nuclear power, wrongly concluding renewable energy sources would not be superior to a new nuclear unit at the GGNS "from an environmental perspective" (EIS, § 8.2.5). In particular, the draft EIS improperly evaluates the energy potential of wind and solar as alternatives to new nuclear units at the GGNS by restricting the geographic area in which those sources are contemplated to the immediate region around the GGNS. But SERI intends to operate its new nuclear plant as a *merchant* facility, meaning that the electricity that it would produce would be sold into the competitive marketplace and often exported from the immediate region to wherever it could be purchased at the highest price (EIS, pg. 8-4). Therefore, it is illogical to restrict the analysis of energy alternatives to those which could be constructed at or near the GGNS. Electricity can be transported over great distances, and the evaluation of renewable energy alternatives should reflect this fact.

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## Radiological Impacts on Human Health

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In a paragraph about the "linear, no threshold" (LNT) model for estimating radiological impacts on human health, the NRC claims that "there are no data that unequivocally establish the occurrence of cancer following exposure to low doses and dose rates, below about 100 mSv" (EIS, pg. 5-52; repeated on pg. 6-32 and 6-36). Yet, as the U.S. Environmental Protection Agency (EPA) noted in comments in reference to an identical paragraph the draft EIS for an ESP at Exelon's Clinton Power Station in Illinois, the information presented here is "misleading at

best.”<sup>5</sup> The EPA cites studies supporting the LNT model by the National Academy of Sciences, the National Council on Radiation Protection and Measurement, and the International Commission on Radiological Protection.

More recently, a new report by the National Research Council, the research body of the National Academies, reaffirmed the validity of the LNT model, not just as a tool for conservatively estimating the impacts of radiation, but as an accurate measure of the risks of radiation to human health.<sup>6</sup> The government-sponsored panel of experts has concluded that even very low levels of ionizing radiation can cause DNA damage that may eventually lead to the development of cancer. “The scientific research base shows that there is no threshold of exposure below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial,” said Richard R. Monson, a professor of epidemiology at Harvard and the chair of the committee that produced the study.

In light of the concurring body of research in support of the LNT model, the language in the EIS that appears to challenge the validity of the LNT model should be removed.

## **Radioactive Waste and the Nuclear Fuel Cycle**

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### **High-Level Radioactive Waste**

The draft EIS fails to evaluate the environmental impacts and security threat of indefinitely storing the additional irradiated fuel that would be generated by the proposed additional nuclear unit onsite. Another nuclear unit at the GGNS could create annually 20 to 30 metric tons of additional irradiated fuel, yet in its application SERI has not even identified radioactive waste management systems for any new nuclear facilities at the site (EIS, pg. 3-11). Despite the NRC's Waste Confidence Decision, the only national repository site under consideration, Yucca Mountain in Nevada, is far from a done deal. Numerous scientific questions remain about whether the site can safely store waste, and, recently, a scandal has erupted over the possible falsification of scientific studies used to justify the geologic suitability of the site.<sup>7</sup>

The NRC's assumption that “no [radioactive] release to the environment is expected” (EIS, pg. 6-12) at deep repositories like Yucca Mountain is unfounded; rather, the geologic integrity of this site is far from proven. Moreover, the Department of Energy (DoE) has not yet submitted its license application to the NRC, although the statutory deadline was more than two years ago. DoE was supposed to begin accepting waste in 1998 and is highly unlikely to meet its revised goal of accepting waste by 2012.

Even if Yucca Mountain is opened, the site cannot hold the high-level radioactive waste that will be generated by existing reactors after 2010. Therefore, in addition to the waste generated by

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<sup>5</sup> U.S. Environmental Protection Agency, “U.S. EPA Comments on Environmental Impact Statement for the Proposed (1) Site Approval and (2) Early Site Permitting for a New Nuclear Power Generating Facility at the Clinton Power Station, DeWitt County, Illinois,” May 25, 2005.

<sup>6</sup> National Research Council, Board on Radiation Effects Research, *Health Risks From Exposure to Low Levels of Ionizing Radiation: BEIR VII Phase 2 (2005)* (Washington: National Academies Press, 2005).

<sup>7</sup> See, for example, a press release from Congressman Jon Porter, “Chairman Jon Porter's Initial Probe into Allegations that Federal Scientists Falsified Data Used to Establish the Safety of the Yucca Mountain Nuclear Waste Repository Reveals Disturbing Results,” April 1, 2005.

existing reactors, waste created by a new nuclear unit at the GGNS would also have to remain onsite for an indefinite period of time, though SERI has admitted that by 2007 it will no longer have the onsite capacity to handle the waste produced by the existing reactor at the GGNS.<sup>8</sup> The NRC recently approved an unprecedented 40-year license extension for the nuclear operator Dominion to store high-level nuclear waste on-site at its Surry nuclear plant near Williamsburg, Virginia, indicating that fuel can reasonably be expected to be stored at reactor sites for at least that long.<sup>9</sup> The environmental impacts of indefinite storage must be thoroughly evaluated in the final EIS.

### **Spent Fuel Reprocessing**

The draft EIS only considers the "no recycle" option for irradiated fuel management, which treats spent fuel as waste to be stored at a federal waste repository, and does not fully consider the possible reprocessing of spent nuclear fuel (EIS, pg. 6-5). But, as mentioned above, the DoE has had significant setbacks in its attempt to attain a license for a federal repository for irradiated nuclear fuel at Yucca Mountain, and the federal policy banning the reprocessing of spent nuclear fuel far from intractable. In fact, the DoE was granted more than \$67 million in fiscal year (FY) 2005 for the "Advanced fuel cycle initiative," a research and development program intended to provide technology to "recover the energy content in spent nuclear fuel," and it has requested \$70 million from Congress for FY 2006 for the same program.<sup>10</sup> This continued government interest in reprocessing, combined with the failure to establish a national repository for irradiated nuclear fuel, should compel the NRC to consider the impacts of spent fuel reprocessing in the final EIS.

### **Depleted Uranium**

The draft EIS lacks a consideration of the environmental and public health impacts resulting from military applications of depleted uranium (DU), a byproduct of the enrichment process of the fuel cycle. Moreover, there is not a complete consideration of the impacts of managing this substance as a waste. There is no repository established for the permanent disposal of depleted uranium, but the impacts of such a hypothetical facility should be considered.

### **Uranium Milling and Mining**

The draft EIS estimates that, for the reference reactor-year (a 1000-MW(e) LWR), 1.1 million metric tons (MT) of raw ore would be required to produce 1200 MT of yellowcake for ultimate use as fuel after conversion, enrichment, and fabrication (EIS, § 6.1.2.5). Over time, as worldwide uranium ore supplies are depleted, requiring exploitation of less pure deposits of ore, would this ratio of ore to yellowcake increase? If so, would the environmental impacts of mining and milling become greater?

### **Transportation Accidents (§ 6.2)**

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<sup>8</sup> System Energy Resources, Inc., Fiscal Year 2004 "Form 10-K" filing with the U.S. Securities and Exchange Commission.

<sup>9</sup> U.S. Nuclear Regulatory Commission, "NRC Approves 40-Year License Renewal for Independent Spent Fuel Storage Installation at Surry Nuclear Plant," [press release] Dec. 8, 2004.

<sup>10</sup> U.S. Department of Energy, Office of Management, Budget and Evaluation/CFO, *Department of Energy FY 2006 Congressional Budget Request: Budget Highlights*, DOE/ME-0053 (Washington: DOE, Feb. 2005) 60-63.

This section and the accompanying Appendix H of the draft EIS do not give adequate weight and consideration to the possibility and consequences of severe accident scenarios resulting from the transportation of spent nuclear fuel. The possibility of extreme accidents, while slight, exists, as evidenced by recent incidents such as the Baltimore train tunnel fire of 2001 and the more recent accident in Graniteville, South Carolina in January, where a violent train crash and release of chlorine killed nine people, sent hundreds to the hospital, and required thousands to evacuate their homes.

## **Socioeconomic Impacts and “Environmental Justice”**

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### **“Environmental Justice”**

A new reactor could unfairly burden minorities and low-income populations, which have a disproportionately high representation in Claiborne County. According to the 2000 United States Census, Claiborne County is 84.1 percent African American, compared to 12.3 percent nationally; and 32.4 percent of individuals live below the poverty level, compared to 9.2 percent nationally. The National Association for the Advancement of Colored People (NAACP) has asked SERI to withdraw its ESP application over environmental justice concerns, and the Claiborne County Chapter of the NAACP has passed a resolution opposing the project.<sup>11</sup> The local chapter of the NAACP was also a party to a petition to the NRC (along with Public Citizen, the Nuclear Information and Resource Service, and the Mississippi Chapter of the Sierra Club) to intervene in the licensing proceeding for the Grand Gulf ESP, proffering a contention that SERI's application did not adequately consider disproportionate adverse impacts on minority and low-income communities—the essence of the “environmental justice” issue—that might result from the project.<sup>12</sup> Under the NRC's expedited licensing process and revised environmental justice policy, the petition was rejected.

The draft EIS acknowledges the high concentration of minority and low-income persons around the GGNS (§ 2.10) and considers the possibility that a new reactor may not provide an economic benefit to the community (§ 5.7.3), but ultimately concludes that operation of a new reactor would produce only “minimal negative and disproportionate health impacts on minority and low-income members of the public” (pg. 5-41). Such a conclusion does not consider the increased risk of adverse health impacts from a nuclear accident at the GGNS that would be endured by the nearby residents were an additional reactor constructed.

### **New Reactor: Economic Boon or Burden?**

It is not clear that a new reactor at the GGNS would provide an economic benefit to the people of Claiborne County; in fact, new development at the GGNS may prove to be a drain on the county's resources. According to findings in the draft EIS, it is “not clear whether Claiborne County would receive property taxes, sales, and use taxes, or other taxes and public monies

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<sup>11</sup> Janette Wipper, Assistant General Counsel, National Association for the Advancement of Colored People (NAACP), letter to Carolyn C. Shanks, president and CEO of Entergy Mississippi and Gary J. Taylor, chairman of Entergy Nuclear, Feb. 6, 2004; Claiborne County Chapter, NAACP, “Resolution on Grand Gulf Site Expansion.”

<sup>12</sup> NAACP, Claiborne County, Mississippi Branch, et al., “Contentions of the National Association for the Advancement of Colored People-Claiborne County, Mississippi Branch, Nuclear Information and Resource Service, Public Citizen, and Mississippi Chapter of the Sierra Club regarding Early Site Permit Application for Site of Grand Gulf Nuclear Power Plant,” *In the Matter of System Energy Resources, Inc. (SERI) (Early Site Permit for Grand Gulf ESP Site)*, U.S. Nuclear Regulatory Commission, Docket No. 52-009, May 3, 2004.

commensurate with the costs of its additional emergency management and public services obligations. The net financial burden may fall on local residents and taxpayers, most of whom are minority and low-income persons" (§ 5.7.3). If this situation is realized, the NRC staff judges that "the socioeconomic burden on local taxpayers (largely minority, and a majority of whom are low income) may be adverse, disproportionate, and MODERATE" (EIS, § 4.7.2). Construction of the first reactor at the GGNS resulted in very large cost overruns which were passed on to electric ratepayers who were subsequently represented in a successful lawsuit against Entergy over the extraordinarily expensive plant.

Local officials have testified to the fact that an additional reactor could overburden their already insufficient resources (EIS, pg. 2-74). The Claiborne County sheriff, Frank Davis, said in an affidavit that "additional man power is needed to fully fill the required needs of our emergency evacuation plan and provide additional services at Grand Gulf Nuclear Power Plant since the 911 disaster,"<sup>13</sup> while the deputy sheriff attested that "the addition of another plant or two plants will further burden the limited resources and infrastructure of the Claiborne County's Sheriff's Department while exacerbating a disproportionate impact on the minority and low-income community of Claiborne County."<sup>14</sup> Furthermore, Claiborne County Hospital Administrator, Wanda Fleming, affirmed in an affidavit that "any additional nuclear power station unit or units to the current Grand Gulf nuclear generating station would further complicate effective medical response to a radiological emergency and would, most likely, multiply our inabilities to do so many times over."<sup>15</sup>

This testimony calls into question whether the nuclear generation development at the GGNS proposed by SERI meets the NRC regulatory requirement at 10 CFR § 52.18 that ESP applications must demonstrate that "there is no significant impediment to the development of emergency plans" and "provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." Assurance that a new nuclear unit at the GGNS would not compromise the ability of emergency responders to handle an accident at the GGNS is absent from SERI's ESP application and the EIS.

### **Tax Evasion and the Case of Clinton**

Mississippi tax code is unique in that nuclear plants are exempt from all county, municipal, and district taxes. Instead, SERI pays taxes to the State of Mississippi in a sum based on the assessed value of the plant, and the State redistributes the brunt of the funds—about 70 percent—to other counties. Still, Claiborne County receives at least \$7.8 million annually from SERI, roughly 83 percent of the county's tax revenues (EIS, pg. 2-68). This position of dependency puts Claiborne County in a tenuous situation that may deteriorate if SERI moves forward with this project. Indeed, the existing reactor, in more than twenty years of operation, has not lifted the community

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<sup>13</sup> Sheriff Frank Davis, "Declaration of Frank Davis in Support of Petitioners' Contentions Regarding the Grand Gulf Early Site Permit Application," *In the Matter of System Energy Resources, Inc. (Early Site Permit for Grand Gulf ESP site)*, U.S. Nuclear Regulatory Commission, Docket No. 52-009, April 29, 2004.

<sup>14</sup> Joseph C. Davis, "Declaration of Joseph C. Davis, President of the NAACP, Claiborne County, Mississippi Branch," *In the Matter of System Energy Resources, Inc. (Early Site Permit for Grand Gulf ESP site)*, U.S. Nuclear Regulatory Commission, Docket No. 52-009, April 28, 2004.

<sup>15</sup> Wanda C. Fleming, "Declaration of Wanda C. Fleming, Claiborne County Hospital Administrator," *In the Matter of System Energy Resources, Inc. (Early Site Permit for Grand Gulf ESP site)*, U.S. Nuclear Regulatory Commission, Docket No. 52-009, April 27, 2004.

out of poverty. More than 32 percent of the population in Claiborne County exists below the poverty level, and the county has been classified as a "persistent poverty" county (EIS, pg. 2-64) with an unemployment rate of 12.4 percent (EIS, pg. 2-67).

Considering SERI's desire to operate its new reactor as an unregulated merchant facility,<sup>16</sup> its value as a source of tax revenue in the county is in question. The development of an unregulated, merchant facility would not bode well for Claiborne County or Mississippi, since such a facility may be exempt from a large portion of the taxes required of a regulated facility (EIS, pg. 4-30). The NRC's presumption that a deregulated facility may actually *increase* SERI's property tax payments to Claiborne County (EIS, pg. 5-34) is unjustified and contrary to experience. Unregulated electric generation facilities are less reliable sources of tax revenue than regulated facilities. In Illinois, for example, nuclear operator Exelon exploited changes in the tax structure under a deregulated utility environment to dramatically reduce its local property tax payments. The NRC's draft EIS for an ESP at the Exelon ESP site at the Clinton Power Station (CPS) in Illinois<sup>17</sup> reports that the annual property taxes paid by Exelon on its CPS have declined dramatically since 1996, when it paid roughly \$17.9 million to DeWitt County and other taxing districts, to \$9.1 million in 2002 (Exelon EIS, Table 2-13). Over this period, Exelon's property tax payments have declined from 80 percent of the county's total property tax revenue in 1996 to 53 percent in 2002 (Exelon EIS, pg. 2-61).

The cause for the precipitous decline is attributed to "a transition period of declining property tax collections due to deregulation" (Exelon EIS, pg. 2-53). Whereas before deregulation property taxes were based on the "depreciated assessed value of the CPS" (Exelon EIS, pg. 2-53), the institution of deregulation has allowed Exelon to pay taxes based on the market value of power produced from the plant, and Exelon's assessed valuation of the plant has plummeted from \$559 million in 1996 to a mere \$165 million in 2003, only 40 percent of DeWitt County's assessment for that same year (Exelon EIS, Table 2-14).

Meanwhile, the draft EIS for Exelon's ESP reports that the consensus feeling among DeWitt County officials is that the economy of the region has "reached bottom" (pg. 2-47), and Clinton School District 15 has been forced to cut its budget by \$3 million and spending reserves over the past several years (EIS, pg. 2-60). This scenario of deregulation should be considered in the final EIS for the Grand Gulf ESP.

### **Disproportionate Adverse Impact**

Judging from the experience in Illinois, the institution of an unregulated merchant nuclear generating unit would better serve the profit motives of Entergy than the general welfare of the residents of Claiborne County, who would be burdened with the risks incumbent in hosting a nuclear power plant. Because Claiborne County is populated predominantly with minority and low-income people, these groups would be disproportionately impacted—probably adversely—by the addition of a new reactor at the GGNS.

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<sup>16</sup> System Energy Resources, Inc. (SERI), "Part 3: Environmental Report," *Grand Gulf Early Site Permit Application* (Jackson, Mississippi, 2003) 1.1-1.

<sup>17</sup> U.S. Nuclear Regulatory Commission, *Environmental Impact Statement for an Early Site Permit (ESP) at the Exelon ESP Site*, Draft Report for Comment, NUREG-1815, February 2005.

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## Critical Issues Missing from the Draft EIS

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### Vulnerability to Sabotage and Terrorism

Nuclear power plants have known vulnerabilities to terrorist attack and sabotage. According to the 9/11 Commission Report, the infamous terrorist organization al Qaeda specifically discussed targeting U.S. nuclear plants. Fuel storage pools, dry storage facilities, and reactor control rooms are not designed to withstand the type attack that occurred on September 11, 2001. The U.S. Government Accountability Office (GAO) concluded in recent testimony before the U.S. Senate that cargo and general aviation airfields are more vulnerable to security breaches than commercial airports.<sup>18</sup> Ignoring the threat because it is “highly speculative”<sup>19</sup> does not make the threat go away, and indicates one shortfall of using an exclusively risk-based approach—especially considering the GGNS’s location on the Mississippi River, which could make it an attractive strategic target. The draft EIS describes the Mississippi River as a “critical inland shipping route from the Gulf Coast to the interior of the South and Midwest” (pg. 2-4).

One possible security measure to protect the reactor from assault by aircraft is to place a reactor below ground level. Therefore, an analysis in the draft EIS of the suitability of the site to place the reactor containment below-grade level should be done, which would require an in-depth analysis of geological and hydrological conditions at the site.

### Need for Power and Who Benefits

According to NRC regulations at 10 CFR 52.17(a)(2), the need for power does not have to be addressed in the ESP process. But an evaluation of the need for power and who benefits is crucial to determining whether the ESP application should be considered at all. In fact, the first question that should be asked is whether residents of Mississippi will receive any of the benefit of a new nuclear unit. SERI intends to operate its new facility as a “merchant nuclear plant, providing electrical energy to the competitive marketplace,”<sup>20</sup> an assertion unchallenged by the NRC (EIS, pg. 8-4). Unlike power generation under a regulated framework, merchant producers of electricity sell their power on the open market “to any buyer willing to pay the price asked by the facility owner” (EIS, pg. 8-4). This means that SERI is indifferent to the beneficiaries or recipients of its power generation, because its only concern is making profits from the sale of electricity.

The final EIS should include an analysis of the exportation of electricity generated by the new nuclear unit at the GGNS to other states where electricity prices are higher and revenues will be greater for SERI.

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## Other Issues

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<sup>18</sup> U.S. Government Accountability Office, *Aviation Security: Improvement Still Needed in Federal Aviation Security Efforts*, Testimony of Norman J. Rabkin Before the Subcommittee on Aviation, Committee on Commerce, Science and Transportation, U.S. Senate, [GAO-04-592T](#), March 30, 2004.

<sup>19</sup> Nuclear Regulatory Commission, *In the Matter of Private Fuel Storage L.L.C.*, Docket No. 72-22-ISFSI, (CLI-02-25), page 13, Dec. 18, 2002.

<sup>20</sup> System Energy Resources, Inc. (SERI), “Part 3: Environmental Report,” *Grand Gulf Early Site Permit Application* (Jackson, Mississippi, 2003) 1.1-1.

**Education**

Have members of the school board for the Port Gibson district been contacted about the potential influx of 460 children—a 38 percent increase over the present student population—that could result from construction activities at the GGNS (EIS, § 4.5.4.5)? Such an increase could be a substantial burden, yet it does not appear that school administrators were contacted for this draft EIS (see Appendix B, “Organizations Contacted”).

**River Flow**

The flow of the Mississippi River in the vicinity of the Grand Gulf site has shifted considerably to the east in the past 30 years, consuming 85 acres of land so that the site boundary line that originally abutted the bank of the river now extends halfway into the middle of the river (EIS § 2.7.1; Figure 2-4). Is it possible that the flow of this massive river could shift farther east in the next fifty years and intrude further upon the Grand Gulf site, even despite the revetments constructed by the Army Corps of Engineers?

**Electric Transmission**

It is unclear whether any new transmission capacity would be required to serve a new nuclear unit at the GGNS. A transmission analysis conducted by the Federal Energy Regulatory Commission (FERC) would be deferred until a specific facility design is chosen (EIS, § 2.2.2; § 3.3), though there remains the possibility that new transmission lines will be required, which could result in the destruction of up to 1,056 acres of hardwood forest (EIS, pg. 4-10). But absent a more specific proposal by SERI, the actual environmental impact from this project cannot be realistically forecast, thus the EIS must be seen to be deficient in this regard.

**Electromagnetic fields and electric transmission line capacity**

Despite a finding by the National Institute of Environmental Health Sciences (NIEHS) that “extremely low frequency-electromagnetic field (ELF-EMF) exposure cannot be recognized as entirely safe” and may pose a leukemia hazard, the staff does not consider this to be a significant environmental impact to the public (EIS, § 5.8.4). Would a stronger electromagnetic field produced by increased voltage capacity on the transmission lines from the GGNS amplify this hazard? Further, SERI is allowed to wait until the COL licensing stage to determine whether transmission lines from the site meet the requirements of the National Electric Safety Code (NESC) regarding electrostatic effects from operation. Why is this issue not being addressed at this stage in the licensing process?

**Conclusion**

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For the reasons articulated above, the NRC's EIS for the Grand Gulf ESP site at the GGNS is deficient in its consideration of the breadth of environmental impacts that could be reasonably expected from construction of a new nuclear unit. In the final EIS, Public Citizen requests that these matters be addressed fully and fairly.