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June 28, 2005

License Renewal and Environmental Impacts  
Division of Regulatory Improvements Program  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

## Statement at Public Hearing, June 28, 2005

Gentlemen:

The Jefferson County Board of Supervisors recognizes the important impact that is associated with locating a new, advanced technology nuclear power plant in this area. All elected leaders appreciate the economic impact and job creation opportunities that are created for our citizens. We recognize the exemplary safety track record of Grand Gulf, Entergy, and System Energy Resources. As there are positive economic opportunities associated with the expansion of Grand Gulf, there are also potential negative externalities that all elected representative of the public must consider since our first obligation is to protect the health, safety, and welfare of our citizens.

We are concerned that Jefferson County has not been actively involved in participating in the radiological emergency planning activities. My purpose here today is to express our interest in being more actively involved in this process in the future. For that reason, I am requesting that five individuals from Jefferson County be added to the mailing distribution list for the Grand Gulf Early Site Permit process, to assure that we receive proper notice, that representatives from Jefferson County are fully engaged in this process, and have the opportunity to actively participate. These individuals are:

Louis Green, President, Jefferson County Board of Supervisors, P. O. Box 145, Fayette, MS 39069  
Ray Perryman – Jefferson County Board of Supervisors, P. O. Box 605, Fayette, MS 39069  
Trent Hudson – Jefferson County Board of Supervisors, P. O. Box 605, Fayette, MS 39069  
Mrs. Sherley Wyatt – Jefferson County Economic Development, P. O. Box 605, Fayette, MS 39069  
Sam Winchester – Homeland Security Contact, 4915 Travels Rest Road, Lorman, MS 39096

The Jefferson County Board of Supervisors and the citizens of Jefferson County are concerned about the adequacy of emergency response planning in the vicinity of the nuclear reactor and want to assure that offsite radiological emergency planning is effective and can be fully implemented in a timely and coordinated manner during emergency events.

The John C. Stennis Institute of Government at Mississippi State University prepared a brief at the request of the Jefferson County Board of Supervisors to help us to clarify a strategy for addressing issues associated with radiological emergency planning, and also to provide us with an overview, recommendations, and to identify issues that require further examination. We would like to submit that report to you this evening and request assistance and feedback from the appropriate parties to examine these issues in greater detail.

Our review of the Stennis Institute's white paper has illustrated to us the complexity of these issues, the importance of pre planning for emergency events, raised our awareness to the importance of these issues for our community, and motivated us to become increasingly active in planning for the safety of our citizens. Of particular concern to us is the need to aggressively engage our citizens in emergency planning, the need for effective warning devices in our population centers, and the need for interoperable communication between local first responders.

We appreciate the opportunity to address these issues with you this evening and look forward to working with you in the future as partners. I would like to stress that we seek an ongoing dialogue with Entergy, Mississippi Emergency Management, and neighboring Clairborne County; and more involvement in the planning process. We thank you for this opportunity to address you this evening.

Sincerely,

A handwritten signature in black ink, appearing to read "Ray Perryman". The signature is fluid and cursive, with a large initial "R" and "P".

Ray Perryman, Supervisor  
District 5, Jefferson County

**A Brief on Radiological Emergency Planning  
and  
Recommendations for Jefferson County, Mississippi**

Prepared for:

**The Jefferson County Board of Supervisors**

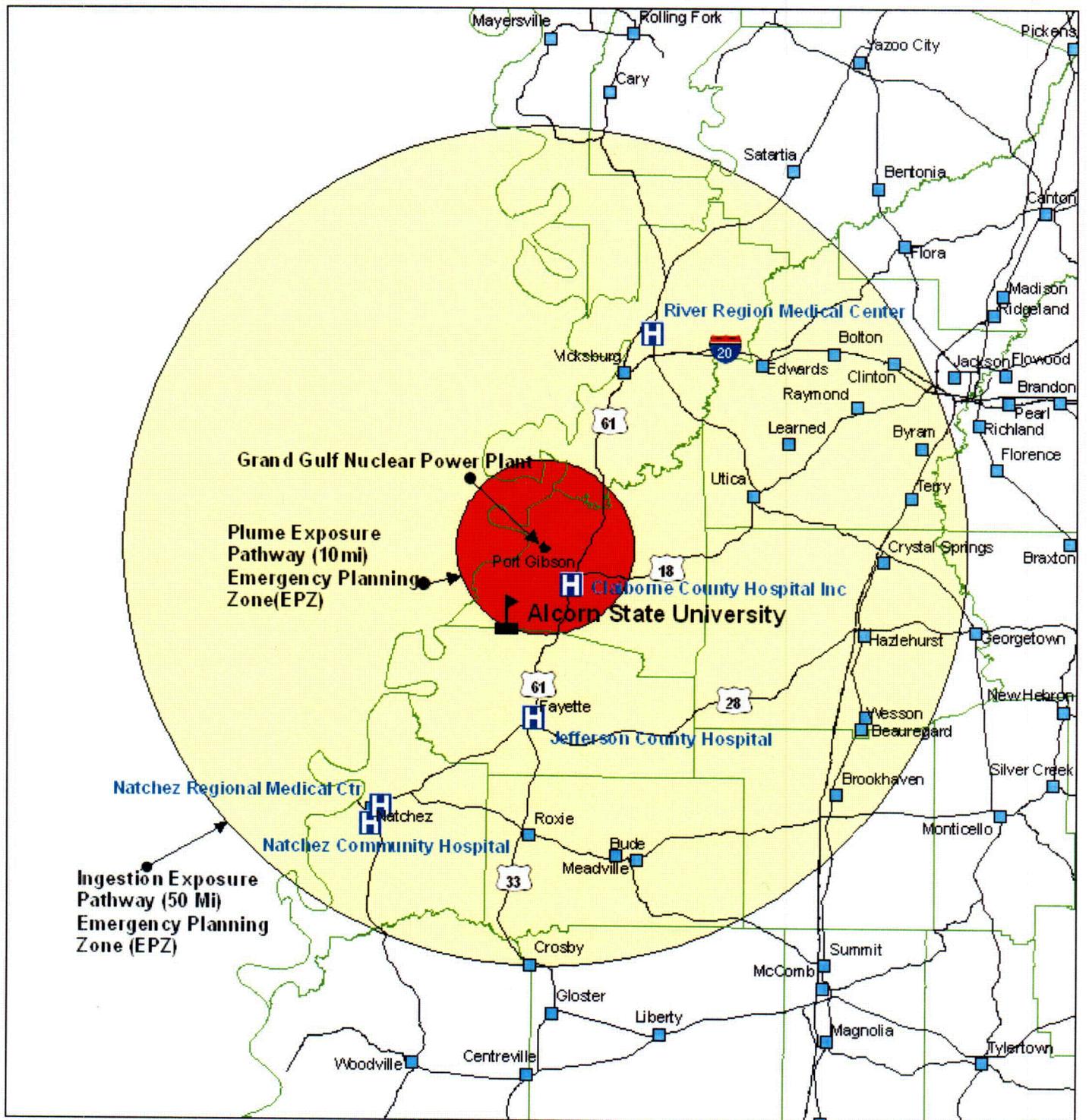
**The John C. Stennis Institute of Government  
June 2005**

**Mississippi State**  
UNIVERSITY

## TABLE OF CONTENTS

Introduction.....	2
Nuclear Power Plants and Radiological Emergency Response Planning – Regulatory Overview .....	7
Radiological Emergency Preparedness.....	7
Citations from Regulatory Guidelines .....	8
<i>Appendix A of 44 CFR Part 354</i> .....	9
Overview of Grand Gulf Nuclear Station.....	14
NuStart Energy Development, LLC .....	14
In-Lieu Tax Payments Related to Grand Gulf Nuclear.....	15
Overview of Jefferson County, MS .....	16
Overview of Fayette, Mississippi .....	19
Jefferson County Emergency Planning Requirements .....	22
Recommendations.....	27
Immediate Goals.....	27
Funding Constraints .....	28

# Emergency Planning Zones - Municipalities, Hospitals, and Alcorn State University



HOSPITAL	[ESTIMATED DISTANCE IN MILES]
Claiborne County Hospital Inc	5.05
Jefferson County Hospital	22.63
Natchez Community Hospital	44.52
Natchez Regional Medical Ctr	47.09
River Region Medical Center	40.91

## Introduction

In the midst of any emergency event, responders depend upon communications systems to transmit critical information and to coordinate response and recovery actions. The key to success in any emergency event is pre event planning and interconnected networks of communication systems – the interoperability and the availability of these systems. These two factors are the primary determinants to protecting the public safety, health, and welfare, saving lives and mitigating the impact of any emergency event.

The events of September 11, 2001 demonstrate the importance of ensuring that communities and states are prepared for emergency events and that communications systems are interoperable and available. The World Trade Center was New York's communications center for voice and data traffic, used by private, public, and by emergency management agencies; it housed the Emergency Operations Center for coordinating activities for New York City emergencies.<sup>1</sup> Upon the collapse of the World Trade Center there was no central command and control to coordinate response activities; the communications backbone of the area was destroyed resulting in temporary inoperability of police and fire departments' communications systems. With communications lost, network traffic jammed remaining communications links and first responders and emergency officials could not use land-lines, cellular and two-way pager systems. As a result, communications between first responders, federal, state, and local agencies were severely disrupted during the first hours after the attack. Due to the lack of interoperability of communications systems between New York Police and Fire Departments, NYPD helicopters flying above the towers were unable to relay information to the Fire Department command center on the ground or to those inside the twin towers regarding the structural damage to the towers.<sup>2</sup>

Although the impact on the communications infrastructure caused by the destruction of the World Trade Center may be completely different than the effects produced by a radiological emergency, the example of the World Trade Center presents a sobering illustration of the need for emergency communication systems that are interoperable and available. A release or a terrorist attack on Grand Gulf Nuclear Station will involve emergency personnel from the facility, the state of Mississippi, and from adjacent counties and municipalities. Communication during a radiological emergency will be further complicated by the requirement for effective communication with federal agencies, such as the Nuclear Regulatory Commission, FEMA, and the National Weather Service to track plume trajectories associated with meteorological data such as wind speed and direction, and other weather impacts such as rain, temperature, and humidity. Emergency personnel will need to be able to communicate quickly, continuously, and accurately to provide the information required to manage the potential for a rapidly evolving radiological emergency event.

Unexpected events and situations can arise in public safety communications when responders from different agencies responding to the same emergency cannot communicate within and across departmental and jurisdictional boundaries. Without interoperability of communication systems, an emergency response may be uncoordinated, available resources may not be marshaled or fully utilized, and in a worst case scenario, information regarding developing events may not be disseminated to responders or to the general public, leading to injury, confusion and resulting panic or the loss of life

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<sup>1</sup> First Line of Defense: Tools and Technology Needs of America's First Responders:  
<http://www.ists.dartmouth.edu/IRIA/fld/fld2.htm>

<sup>2</sup> Increasing FDNY's Preparedness, Fire Department of the City of New York, Mckinsey & Company, 2002.

### **Lack of Certainty Regarding the Impact of Terrorist Attacks on Nuclear Power Plants**

There is a broad-ranging, unresolved national debate about the probability of a terrorist attack on a nuclear power station and the consequences of such an attack. A brief overview of this debate is as follows:

According to the International Atomic Energy Agency's (IAEA) publication, "*Nuclear Terrorism: Reactors and Radiological Attacks After September 11*":

*"Most of the world's 440 nuclear power reactors would be highly vulnerable to a similar attack to those launched on September 11: a passenger aircraft laden with fuel being crashed into the building. The impact and fire caused by such an attack would likely compromise the containment system that surrounds reactors, increasing the risk of a radioactive leak. Many containment facilities are designed to withstand the impact of a small plane: the concrete dome may be 3 feet thick and heavily reinforced by steel, with a 1 inch to 4 inch lining, ...In the United States, reactors are designed to withstand both earthquakes and hurricanes. This might or might not be enough to prevent the reactor vessel itself being broken open by a plane crashing into the facility. The exact nature of the damage caused by such an attack would depend on the size of the plane, amount of fuel it carried, speed and angle of attack. Although the emergency coolant system would ordinarily prevent an explosion, it is possible that both primary and back-up systems could be severely compromised by such an attack, possibly leading to a steam explosion at a reactor."*

The Nuclear Regulatory Commission has not agreed with the IAEA's findings on the potential effects of an airplane strike on a nuclear reactor. Numerous studies conducted by NRC, Sandia National Laboratories, Congressional Hearings, and a myriad of institutions have supported the perspective that Nuclear Power Plants do not represent a significant risk associated with terrorist attack, internal sabotage, or the storage and transportation of spent nuclear fuel.

This national debate continues to be unresolved with knowledgeable parties making a cogent argument on both sides of this issue.

Even without consideration of terrorist actions and the associated potential for rapid and/or a sizeable release of radiation, there are emergency response considerations that must be raised when one considers the risk assessment, planning, and response requirements for a myriad of potential accident scenarios associated with radiological events. These radiological event scenarios are highly complex as it is difficult to arrange nuclear accidents along a simple linear continuum of "slight" to "severe." Many emergency planning scenarios are developed based upon the adage that if planning is conducted for worst case scenarios this will be sufficient to protect for lesser events. This approach may be insufficient due to the complexity of radiological events, for example some accidents may affect large areas, to a lesser degree but over a longer period of time; others may affect smaller areas to a severe degree or events may occur rapidly and be fast breaking. Another alternative method for emergency planning is an "all-disaster spectrum" approach. This approach considers the full range of possible threats, not just one threat at the expense of others and develops emergency planning around a scenario

that identifies similarities among the full range of possible disasters in a locality and devises a general set of guidelines that covers priority disaster situations that may arise. Whatever emergency response planning scenario is utilized – all-disaster or worst case scenarios – at minimum impacted communities must consider and plan for the potential for a major, fast-breaking event that would seriously endanger the lives of many citizens.

Similar to all emergency planning, radiological emergency events are characterized by uncertainty, surprise, and unexpected events. No emergency displays an orderly progression of events as postulated during emergency planning. Events can vary along numerous dimensions – the nature and magnitude of an accident, terrorism, weather, time of event, road congestion at time of event, availability of road systems, population distribution, ability to communicate with the impacted public, and the public's compliance with emergency warnings, etc. When an emergency event occurs a series of unanticipated, chaotic chain reactions can be expected to occur that seriously complicate emergency response processes. The critical first hours, referred to by professional emergency planners as the "golden hour," are when the majority of preventable deaths occur during an emergency event or disaster.

Communications are the lifeblood of an emergency. Emergency personnel need to communicate with each other to share information, discuss protective actions, provide feedback on implementation, and provide command and control for all response efforts. Communications are the key to coordinated and effective action during an emergency event. Communications can compensate for failures and omissions in pre-event emergency planning and enable responders to react quickly to unanticipated events. Effective communications during an emergency event require two components: 1) interoperable communication systems between emergency responders and 2) communication with citizens. In brief, the interrelationship between these two primary functions of emergency response include:

**1) Interoperable communication systems between emergency responders.** Reaction to changing events on the ground and coordination of activities is not possible without communications to coordinate the activities of emergency response personnel and to link their actions together. In a nuclear emergency, hundreds of emergency response personnel may be involved in response and recovery. Coordinated activities are required so that individual activities are channeled toward emergency response goals. Decision-making is based upon communication and coordination. Decision-making requires input on what is happening and what may happen from multiple emergency personnel in the field. Decisions must be coordinated among counties and the municipalities that lie within, between counties and State agencies, and between civil jurisdictions and the nuclear facility, and with numerous federal agencies. In a nuclear emergency, decision-making is highly reliant upon communication and coordination.

Resource management during an emergency must plan for the fact that at the time of an emergency only local resources may be available. Within hours or days, resources will be mobilized from a larger geographic region; but initially, local resources must be mobilized and managed to provide the greatest response to meet emergency goals. Personnel management is a key emergency management requirement. In most emergencies, volunteers and emergency personnel from surrounding jurisdictions converge on a disaster site to offer their services, managing and directing this army of volunteers is a significant element of emergency response effectiveness. Personnel mobilization, management, and assignment during an event consumes precious time and additional traffic to communication systems. An efficient response to an emergency event requires preplanning to the maximum degree possible.

The primary purpose of all emergency response is to a) control and mitigate existing hazards; and 2) protect the health and safety of citizens.

2) **Communication with citizens.** The usual radiological emergency planning process is generally as follows: Nuclear facilities are required to notify impacted counties and state agencies within 15 minutes time when there are changes in emergency classification levels. Once a nuclear facility determines there is a problem and provides notification to the community, the information passes to the county level and to the states respectively. Once a protective action decision is made, the next step is to disseminate information to the public and provide specific and appropriate information on the actions citizens should take. Normally, this is achieved through the combined use of sirens and Emergency Alert Systems – these are interruptions to regular programming to provide emergency messages in a variety of media, such as radio and television. Frequently, cities are not directly informed. Instead they must await notification from the counties or state. This practice results in delays and the potential for no information, incomplete information, or conflicting information to the cities. This problem is exacerbated when alternative sources or rumors develop about conditions at a nuclear facility.

A primary issue in emergency response effectiveness is providing adequate, accurate, timely and coordinated information to the public and to the media. Emergency events create urgent and overwhelming demand for information from the public, from all levels of government, and from the media. The speed at which information is relayed to the public can have a significant bearing on the effectiveness of any protective action. There is a direct relationship between the amount of time the public has to protect itself and the level of protection achieved during a radiological emergency. A nuclear emergency event crisis requires quick action on the part of both the facility and offsite emergency response personnel to adequately protect vulnerable populations. The primary purpose of providing information to the public in a timely manner is to provide protection from hazard events, swiftly meet the needs of at risk populations such as school children, the handicapped, the elderly, and other special needs population. People must be notified to take actions to protect themselves – sheltering, evacuation, seeking medical attention or locating sources administering Potassium Iodine, washing and changing clothes, and protecting livestock or crops. Local governments and local emergency responders have a critical role to play in assisting with this process. The effectiveness of the public's response during an emergency event is predicated upon pre-emergency event mitigation education and associated public awareness and understanding of response protocols.

Communication and protection of the public are vitally interlinked. If communication systems are not interoperable, emergency response planning breaks down, the public is placed at greater risks, and lives may be lost unnecessarily. For example, to assist with protection of the public, emergency personnel need to communicate with each other in manning traffic control points. They need to coordinate with other counties to ensure that traffic moving from one county will not be blocked in another county, redirecting traffic away from high-risk areas such as the plume exposure pathway. Local emergency responders need to receive information on the level of traffic indicating a higher or lower level of evacuation response than desired and make decisions to provide further information to the public. Traffic management resources need to be managed including traffic direction, intersection egress, police cars, traffic cones, accidents, and smooth flow of emergency response vehicles in all directions. Conditions change during disasters – hazards may be controlled or escalate, people may under-mobilize or over-mobilize. These situations require ongoing communication, assessment, and a cohesive response to changing conditions.

Given the large numbers of persons that may be on the roadways during an emergency event highway readerboards may be utilized as a supplemental technology to warn motorists of hazardous events. This technology has a dual-use purpose for multiple emergencies, including natural disaster events and is used in some communities to warn citizens of child abductions. However, during electrical power outages these readerboards may become inoperable.

Emergency management objectives require action and specific behaviors by the at risk public. If people do not receive and heed warnings and take appropriate protective action, emergency events may become catastrophic. Many communities use sirens or tone alerts to provide the public with of an emergency event and to provide warning to tune radios and televisions to emergency broadcasts, move indoors, or to begin evacuation. However, unless emergency planning activities include an aggressive public education program prior to the occurrence of an emergency event, confusion and chaos may ensue.

Of primary concern during any emergency event are at-risk segments of the population – school children and citizens that may require special assistance during and emergency event. Schools develop emergency response protocols and engage parents, students, faculty, and administrative support personnel in educational and learning activities. Basic planning for at-risk populations normally includes: creation of family emergency plans; contact and action protocols for school officials to include early dismissal; sheltering or evacuation; movement or transportation of students to preselected sheltering and reception centers. There should be communications capability between bus drivers and emergency dispatchers. For other special needs populations, such as the elderly or handicapped, the basic requirements for emergency response include: identification of the location of these population; development of protective action plans for institutionalized and non-institutionalized individuals who have sensory, movement, mental or emotional impairments to include transportation or sheltering and meeting medical needs.

From a planning perspective and from a resource constraint perspective it is not possible or realistic to have a different plan for every contingency during emergency events. Unfortunately, it is not financially feasible for every community in every state in the nation to have the resources, response capability, and sophisticated technology that is currently available for disaster response. Nor can the private sector be expected to absorb the prohibitive costs associated with planning for the myriad of probabilistic emergency events. This brief considers existing human and financial resource constraints, recognizes that high profile population centers of the United States in proximity to nuclear power stations such as Indian Point or Turkey Point are perceived as greater risk areas, that many vested interest groups have effectively mobilized grassroots and political organizations to compete effectively for the emergency planning and homeland security funding that is available from federal sources. Consideration is given to the cost-benefit of investment in emergency response resources in a rural, Mississippi county. Therefore, the recommendations contained in this brief are based upon a conservative, "barebones" assessment of only the highest priority emergency response planning and resource requirements of Jefferson County. The recommendations contained in this brief recognize the extremely limited resources that exist within Jefferson County and the state of Mississippi. Consequently, this brief is not intended to be a complete compendium of emergency planning issues and requirements but rather it provides basic information for consideration during emergency planning activities and identifies critical requirements to protect the health and safety of the citizens of Jefferson County specifically related to the potential for a radiological event at Grand Gulf Nuclear Power Station. The implementation of these measures may also provide additional protections for the residents of Jefferson County during any emergency event including natural disasters.

The potential for a radiological event, due to either in-plant failure of process controls, equipment or terrorist event, as well as the ever-present threat of natural disasters such as hurricane, flood, or tornado demand emergency planning and safety communication systems that are adequate to protect the security, health, and safety of citizens in Jefferson County in light of these threats. The degree of risk and the probability of a radiological event at Grand Gulf cannot be calculated. There is however, a degree of certainty that terrorists intend to attack the United States, given the opportunity. Others must shoulder the burden of preventing such action, planning a response to such an event is the responsibility of the leadership of Jefferson County.

### **Nuclear Power Plants and Radiological Emergency Response Planning – Regulatory Overview**

Since 1980, each utility that owns a commercial nuclear power plant in the United States has been required to have both an onsite and offsite emergency response plan as a condition of obtaining and maintaining a license to operate that plant. Onsite emergency response plans are approved by the Nuclear Regulatory Commission (NRC). Offsite plans, closely coordinated with the utility's onsite emergency response plan, are evaluated by the Federal Emergency Management Agency (FEMA) and provided to the NRC, who must consider the FEMA findings when issuing or maintaining a license.

Federal law establishes the criterion for determining the adequacy of offsite planning and preparedness, i.e.: "Plans and preparedness must be determined to adequately protect the public health and safety by providing reasonable assurance that appropriate measures can be taken offsite in the event of a radiological emergency."

Although construction and operation of nuclear power plants are closely monitored and regulated by the NRC, an accident, though unlikely, is possible. The potential danger from an accident at a nuclear power plant is exposure to radiation. This exposure could come from the release of radioactive material from the plant into the environment, usually characterized by a plume (cloud-like) formation. The area the radioactive release may affect is determined by factors such as the amount released from the plant, wind direction, speed and weather conditions. For example, rain may quickly drive the radioactive material to the ground, hence causing increased deposition of radionuclides; wind speed and direction will determine the dispersion and geographic scope of the plume.

If a release of radiation occurs, the levels of radioactivity will be monitored by authorities by Federal and State governments, and on site nuclear plant personnel, to determine the potential danger to the public.

### ***Radiological Emergency Preparedness***

There is a range of reaction time for emergency response during a radiological event. No accuracy can be assumed due to the broad range of potential events, from a terrorist act to an in plant accident. Given the safety record of nuclear plants in the United States, the occurrence of an accidental release may have less probability than does a terrorist attack. Importantly, the magnitude of impact of a release of radioactive materials is probably greater when associated with a terrorist event than with an in plant accident. For example, the range of times between

the onset of accident conditions and the start of a major atmospheric release is on the order of one-half to several hours.<sup>3</sup> Although there has been significant research conducted on the impact of a terrorist attack on a nuclear power plant, there is no conclusive evidence to predict the outcome. Consequently, emergency response planning for radiological events must cover a full spectrum of accidents. The Nuclear Regulatory Commission's policy statement (44 FR 61123) directs "the range of possible selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood."

A Memorandum of Understanding (MOU) establishes a framework for cooperation between the Federal Emergency Management Agency and the U.S. Nuclear Regulatory Commission, this MOU provides for FEMA to take the lead in offsite planning and response in radiological emergency preparedness. Under FEMA-Executive Order 12148, FEMA is charged with responsibility to "work with State and local governments and the private sector to stimulate vigorous participation in civil emergency preparedness, mitigation, response, and recovery programs (Section 2-104).

FEMA's guidelines pursuant to Radiological Emergency Preparedness Program exercise evaluation criteria (66 FR 47526 and 67 FR 20580), evaluates the capability of offsite response organizations (ORO) to respond to a fast-breaking event at a commercial nuclear power plant. FEMA regulation and case law (Atomic Safety and Licensing Appeal Board, ALAB-935) provide regulatory guidelines for judging the adequacy of offsite planning and preparedness for a response to a situation requiring urgent action. Appendix E to 10 CFR Part 50 states: "the licensee shall demonstrate that the State/local officials have the capability to make a public notification decision promptly on being informed by the licensee of an emergency condition;" and "...prompt public notification system shall have the capability to essentially complete the initial notification of the public within the plume exposure pathway within about 15 minutes."

### ***Citations from Regulatory Guidelines***

NUREG-0654/FEMA-REP-1, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, dated October 1980, provides the basis for NRC licensees, State and local governments to develop radiological emergency plans and preparedness. This guidance is the product of the joint FEMA/NRC Steering Committee. This guidance is consistent with NRC and FEMA regulations and superseded other previous guidance and criteria published by FEMA and NRC on this subject. It will be used by reviewers in determining the adequacy of State, local and nuclear power plant licensee's emergency plans and preparedness.

The following paragraphs provide more indepth information on NUREG-0654, it is included for review by the Jefferson County Board of Supervisors to provide background on important elements of radiological emergency event planning:

*44 CFR part 354, Appendix A, Memorandum of Understanding (MOU) between NRC and FEMA Relating to Radiological Emergency Planning and Preparedness, establishes a framework of cooperation between FEMA and the NRC in radiological emergency response planning matters. The MOU is responsive to the President's December 7, 1979, decision that FEMA take the lead in offsite planning and response, his request that NRC assist FEMA in carrying out this role, and the NRC's continuing statutory responsibility for the radiological health and safety of the*

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<sup>3</sup> FEMA: <http://www.fema.gov/rrr/rep/release.shtml>

public. The NRC/FEMA Steering Committee is the focal point for coordination of emergency planning, preparedness, and response activities between the two agencies.

#### **Appendix A of 44 CFR Part 354**

### **Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission**

#### **I. Background and Purposes**

*This Memorandum of Understanding (MOU) establishes a framework of cooperation between the Federal Emergency Management Agency (FEMA) and the U.S. Nuclear Regulatory Commission (NRC) in radiological emergency response planning matters so that their mutual efforts will be directed toward a more effective plans and related preparedness measures at and in the vicinity of nuclear reactors and fuel cycle facilities which are subject to 10 CFR part 50, appendix E, and certain other fuel cycle and materials licensees which have potential for significant accidental offsite radiological releases. The memorandum is responsive to the President's decision of December 7, 1979, that FEMA will take the lead in offsite planning and response, his request that NRC assist FEMA in carrying out this role, and the NRC's continuing statutory responsibility for the radiological health and safety of the public.*

*On January 14, 1980, the two agencies entered into a "Memorandum of Understanding Between NRC and FEMA to Accomplish a Prompt Improvement in Radiological Emergency Preparedness," that was responsive to the President's December 7, 1979, statement. A revised and updated Memorandum of Understanding became effective November 1, 1980. The MOU was further revised and updated on April 9, 1985. This MOU is a further revision, to reflect the evolving relationship between NRC and FEMA and the experience gained in carrying out the provisions of the previous MOU's. This MOU superseded these two earlier versions of the MOU.*

*The general principals agreed to in the previous MOUs and reaffirmed in this MOU, are as follows: FEMA coordinates all Federal planning for offsite impact of radiological emergencies and takes the lead for assessing offsite radiological emergency response plans\* and preparedness, makes findings and determinations as to the adequacy and capability of implementing offsite plans, and communicates those findings and determinations to the NRC. The NRC reviews those FEMA findings and determinations in conjunction with the NRC onsite findings for the purpose of making determinations on the overall state of emergency preparedness. These overall findings and determinations are used by the NRC to make radiological health and safety decisions in the issuance of licenses and the continued operation of licensed plants to include taking enforcement actions as notices of violations, civil penalties, orders, or shutdown of operating reactors. This delineation of responsibilities avoids duplicative efforts by the NRC staff in offsite preparedness matters. However, if FEMA informs the NRC that an emergency, unforeseen contingency or other reason would prevent FEMA from providing a requested finding in reasonable time, then, in consultation with FEMA, the NRC might initiate its own review of offsite emergency preparedness.*

*A separate MOU dated October 22, 1980, deals with NRC/FEMA cooperation and responsibilities in response to an actual or potential radiological emergency. Operations Response Procedures have been developed that implement the provisions of the Incident Response MOU. These documents are intended to be consistent with the Federal Radiological Emergency Response Plan, which describes the relationships, roles, and responsibilities of Federal Agencies for responding to accidents involving peacetime nuclear emergencies. On December 1, 1991, the NRC and FEMA also concluded a separate MOU in support of Executive Order 12657 (FEMA Assistance in Emergency Preparedness Planning at Commercial Nuclear Power Plants).*

*\* Assessments of offsite plans may be based on State and local government plans submitted to FEMA under its rule (44 CFR Part 350), and as noted in 44 CFR 350.3(f), may also be based on plans currently available to FEMA or furnished to FEMA through the NRC/FEMA Steering Committee.*

#### **II. Authorities and Responsibilities**

*FEMA-Executive Order 12148 charges the Director, FEMA, with the responsibility to "...establish Federal policies for, and coordinate, all civil defense and civil emergency planning, management, mitigation, and assistance functions of Executive agencies" (Section 2-101) and "...represent the President in working with State and local governments and the private sector to stimulate vigorous participation in civil emergency preparedness, mitigation, response, and recovery programs" (Section 2-104).*

On December 7, 1979, the President, in response to the recommendations of the Kemeny Commission on the Accident at Three Mile Island, directed that FEMA assume lead responsibility for all offsite nuclear emergency planning and response.

Specifically, the FEMA responsibilities with respect to radiological emergency preparedness as they relate to NRC are:

1. To take the lead in offsite emergency planning and to review and assess offsite emergency plans and preparedness for adequacy.
2. To make findings and determinations as to whether offsite emergency plans are adequate and can be implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment). Notwithstanding the procedures which are set forth in 44 CFR part 350 for requesting and reaching a FEMA administrative approval of State and local plans, findings, and determinations on the current status of emergency planning and preparedness around particular sites, referred to as interim findings, will be provided by FEMA for use as needed in the NRC licensing process. Such findings will be provided by FEMA on mutually agreed to schedules or on specific NRC request. The request and findings will normally be written communications between the co-chairs of the NRC/FEMA Steering Committee. An interim finding provided under this arrangement will be an extension of FEMA's procedures for review and approval of offsite radiological emergency plans and preparedness set forth in 44 CFR part 350. It will be based on the review of currently available plans, and, if appropriate, joint exercise results related to a specific nuclear power plant site.

*If the review involves an application under 10 CFR part 52 for an early site permit, the NRC will forward to FEMA pertinent information provided by the applicant and consult with FEMA as to whether there is any significant impediment to the development of offsite emergency plans. As appropriate, depending upon the nature of information provided by the applicant, the NRC will also request that FEMA determine whether major features of offsite emergency plans submitted by the applicant are acceptable, or whether offsite emergency plans submitted by the applicant are adequate, as discussed below.*

*An interim finding based only on the review of currently available offsite plans will include an assessment as to whether these plans are adequate when measured against the standards and criteria of NUREG-0654/FEMA-REP-1, and, pending a demonstration through an exercise, whether there is reasonable assurance that the plans can be implemented. The finding will indicate one of the following conditions: (1) Plans are adequate and there is reasonable assurance that they can be implemented with only limited or no corrections needed; (2) plans are adequate, but before a determination can be made as to whether they can be implemented, corrections must be made to the plans or supporting measures must be demonstrated (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment) or (3) plans are inadequate and cannot be implemented until they are revised to correct deficiencies noted in the Federal review.*

*If, in FEMA's view, the plans that are available are not completed or are not ready for review, FEMA will provide NRC with a status report delineating milestones for preparation of the plan by the offsite authorities as well as FEMA's actions to assist in timely development and review of the plans.*

*An interim finding on preparedness will be based on review of currently available plans and joint exercise results and will include an assessment as to (1) whether offsite emergency plans are adequate as measured against the standards and criteria of NUREG-0654/FEMA-REP-1 and (2) whether the exercise(s) demonstrated that there is reasonable assurance that the plans can be implemented.*

*An interim finding on preparedness will indicate one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in an exercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision.*

3. To assume responsibility, as a supplement to State, local, and utility efforts, for radiological emergency preparedness training of State and local officials.
4. To develop and issue an updated series of interagency assignments which delineate respective agency capabilities and responsibilities and define procedures for coordination and direction for emergency planning and response. [Current assignments are in 44 CFR part 351, March 11, 1982. (47 FR 10758)]

The Atomic Energy Act of 1954, as amended, requires that the NRC grant licenses only if the health and safety of the public is adequately protected. While the Atomic Energy Act does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as a part of the licensing process. The NRC rules (10 CFR 50.33, 50.34, 50.47, 50.54, and appendix E to 10 CFR part 50, and 10 CFR part 52) include requirements for the licensee's emergency plans.

Specifically, the NRC responsibilities for radiological emergency preparedness are:

1. To assess licensee emergency plans for adequacy. This review will include organizations with whom licensees have written agreements to provide onsite support services under emergency conditions.
2. To verify that licensee emergency plans are adequately implemented (e.g., adequacy and maintenance of procedures, training, resources, staffing levels and qualifications, and equipment).
3. To review the FEMA findings and determinations as to whether offsite plans are adequate and can be implemented.
4. To make radiological health and safety decisions with regard to the overall state of emergency preparedness (i.e., integration of emergency preparedness onsite as determined by the NRC) such as assurance for continued operation, for issuance of operating licenses, or for taking enforcement actions, such as notices of violations, civil penalties, orders, or shutdowns of operating reactors.

### **III. Areas of Cooperation**

#### **A. NRC licensing reviews**

FEMA will provide support to the NRC for licensing reviews related to reactors, fuel facilities, and materials licenses with regard to the assessment of the adequacy of offsite radiological emergency response plans and preparedness. This will include timely submittal of an evaluation suitable for inclusion in NRC safety evaluation reports.

Substantially prior to the time that a FEMA evaluation is required with regard to fuel facility or materials license review, NRC will identify those fuel and materials licenses with potential for significant accidental offsite radiological releases and transmit a request for review to FEMA as the emergency plans are completed.

FEMA routine support will include providing assessments, findings and determinations (interim and final) on offsite plans and preparedness related to reactor license reviews. To support its findings and determinations, FEMA will make expert witnesses available before the Commission, the NRC Advisory Committee on Reactor Safeguards, NRC hearing boards and administrative law judges, for any court actions, and during any related discovery proceedings.

FEMA will appear in NRC licensing proceedings as part of the presentation of the NRC staff. FEMA counsel will normally present FEMA witnesses and be permitted, at the discretion of the NRC licensing board, to cross-examine the witnesses of parties, other than the NRC witnesses, on matters involving FEMA findings and determinations, policies, or operations; however, FEMA will not be asked to testify on status reports. FEMA is not a party to NRC proceedings and, therefore, is not subject to formal discovery requirements placed upon parties to NRC proceedings. Consistent with available resources, however, FEMA will respond informally to discovery requests by parties. Specific assignment of professional responsibilities between NRC and FEMA counsel will be primarily the responsibility of the attorneys assigned to a particular case. In situations where questions of professional responsibility cannot be resolved by the attorneys assigned, resolution of any differences will be made by the General Counsel of FEMA and the General Counsel of the NRC or their designees. NRC will request the presiding Board to place FEMA on the service list for all litigation in which it is expected to participate.

Nothing in this MOU shall be constructed in any way to diminish NRC's responsibility for protecting the radiological health and safety of the public.

#### **B. FEMA Review of Offsite Plans and Preparedness**

NRC will assist in the development and review of offsite plans and preparedness through its membership on the Regional Assistance Committees (RAC). FEMA will chair the Regional Assistance Committees. Consistent with

*NRC's statutory responsibility, NRC will recognize FEMA as the interface with State and local governments for interpreting offsite radiological emergency planning and preparedness criteria as they affect those governments and for reporting to those governments the results of any evaluation of their radiological emergency plans and preparedness.*

*Where questions arise concerning the interpretation of the criteria, such questions will continue to be referred to FEMA Headquarters, and when appropriate, to the NRC/FEMA Steering Committee to assure uniform interpretation.*

### **C. Preparation for and Evaluation of Joint Exercises**

*FEMA and NRC will cooperate in determining exercise requirements for licenses, and State and local governments. They will also jointly observe and evaluate exercises. NRC and FEMA will institute procedures to enhance the review of objectives and scenarios for joint exercises. This review is to assure that both the onsite considerations of NRC and the offsite considerations of FEMA are adequately addressed and integrated in a manner that will provide for a technically sound exercise upon which an assessment of preparedness capabilities can be based. The NRC/FEMA procedures will provide for the availability of exercise objectives and scenarios sufficiently in advance of scheduled exercises to allow enough time for adequate review by NRC and FEMA and correction of any deficiencies by the licensee. The failure of a licensee to develop a scenario that adequately addresses both onsite and offsite considerations may result in NRC taking enforcement actions.*

*The FEMA reports will be a part of an interim finding on emergency preparedness; or will be the result of an exercise conducted pursuant to FEMA's review and approval procedures under 44 CFR part 350 and NRC's requirement under 10 CFR part 50, appendix E, Section IV.F. Exercise evaluations will identify one of the following conditions: (1) There is reasonable assurance that the plans are adequate and can be implemented as demonstrated in the exercise; (2) there are deficiencies that must be corrected; or (3) FEMA is undecided and will provide a schedule of actions leading to a decision. The schedule for issuance of the draft and final exercise reports will be as shown in FEMA-REP-14 (Radiological Emergency preparedness Exercise manual).*

*The deficiency referred to in (2) above is defined as an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant. Because of the potential impact of deficiencies on emergency preparedness, they should be corrected within 120 days through appropriate remedial actions, including remedial exercises, drills, or other actions.*

*Where there are deficiencies of the types noted above and when there is a potential for remedial actions, FEMA Headquarters will promptly (1-2 days) discuss these with NRC Headquarters. Within 10 days of the exercise, official notification of identified deficiencies will be made by FEMA to the State, NRC Headquarters, and the RAC with an information copy to the licensee. NRC will formally notify the licensee of the deficiencies and monitor the licensee's efforts to work with State and local authorities to correct the deficiencies. Approximately 60 days after official notification of the deficiency, the NRC, in consultation with FEMA, will assess the progress being made toward resolution of the deficiencies.*

### **D. Withdrawal of Reasonable Assurance Finding**

*If FEMA determines under 44 CFR 350.13 of its regulations that offsite emergency plans or preparedness are not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of radiological emergency to protect the health and safety of the public, FEMA shall, as described in its rule, withdraw approval.*

*Upon receiving notification of such action from FEMA, the NRC will promptly review FEMA's findings and determinations and formally document the NRC's position. When, as described, in 10 CFR 50.54(s)(2)(ii) and 50.54(s)(3) of its regulations, the NRC finds the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, the NRC will notify the affected licensee accordingly and start the "120-day clock."*

#### **E. Emergency Planning and Preparedness Guidance**

*NRC has lead responsibility for the development of emergency planning and preparedness guidance for licensees. FEMA has lead responsibility for the development of radiological emergency planning and preparedness guidance for State and local agencies. NRC and FEMA recognize the need for an integrated, coordinated approach to radiological emergency planning and preparedness by NRC licensees and State and local governments. NRC and FEMA will each, therefore, provide opportunity for the other agency to review and comment on such guidance (including interpretations of agreed joint guidance) prior to adoption as formal agency guidance.*

#### **F. Support for Document Management System**

*FEMA and NRC will each provide the other with continued access to those automatic data processing support systems which contain relevant emergency preparedness data.*

#### **G. Ongoing NRC Research and Development Programs**

*Ongoing NRC and FEMA research and development programs that are related to State and local radiological emergency planning and preparedness will be coordinated. NRC and FEMA will each provide opportunity for the other agency to review and comment on relevant research and development programs prior to implementing them.*

#### **H. Public Information and Education Programs**

*FEMA will take the lead in developing public information and education programs. NRC will assist FEMA by reviewing for accuracy educational materials concerning radiation, and its hazards and information regarding appropriate actions to be taken by the general public in the event of an accident involving radioactive materials.*

#### **I. Recovery from Disasters Affecting Offsite Emergency Preparedness**

*Disasters that destroy roads, buildings, communications, transportation resources or other offsite infrastructure in the vicinity of a nuclear power plant can degrade the capabilities of offsite response organizations in the 10-mile plume emergency planning zone. Examples of events that could cause such devastation are hurricanes, tornadoes, earthquakes, tsunamis, volcanic eruptions, major fires, large explosions, and riots.*

*If a disaster damages the area around a licensed operating nuclear power plant to an extent that FEMA seriously questions the continued adequacy of offsite emergency preparedness, FEMA will inform the NRC promptly. Likewise, the NRC will inform FEMA promptly of any information it received from licensees, its inspectors, or others, that raises serious questions about continued adequacy of offsite emergency preparedness. If FEMA concludes that a disaster-initiated review of offsite radiological emergency preparedness is necessary to determine if offsite emergency preparedness is still adequate, it will inform the NRC in writing, as soon as practicable, including a schedule for conduct of the review. FEMA will also give the NRC (1) interim written reports of its findings, as appropriate, and (2) a final written report on the results of its review.*

*The disaster-initiated review is performed to reaffirm the radiological emergency preparedness capabilities of affected offsite jurisdictions located in the 10-mile emergency planning zone and is not intended to be a comprehensive review of offsite plans and preparedness.*

*The NRC will consider information provided by FEMA Headquarters and pertinent findings from FEMA's disaster-initiated review in making decisions regarding the restart or continued operation of an affected operating nuclear power reactor. The NRC will notify FEMA Headquarters, in writing, of the schedule for restart of an affected reactor and keep FEMA Headquarters informed of changes in that schedule.*

*\* Per 10 CFR 50.54(s)(2)(ii), the Commission will determine whether the reactor shall be shut down or other appropriate enforcement actions if such conditions are not corrected within four months. The NRC is not limited by this provision of the rule, for, as stated in 10 CFR 50.54(s)(3), "Nothing in this paragraph shall be construed as limiting the authority of the Commission to take action under any other regulation or authority of the Commissioner at any time other than that specified in this paragraph"(emphasis added).*

## Overview of Grand Gulf Nuclear Station

Grand Gulf Nuclear Station, Unit 1, is the largest boiling water reactor in the United States. The nuclear reactor at Grand Gulf recently increased capacity to 1,231 net Megawatts, from its previous capacity of 1,179 Megawatts. The increased capacity allowed Grand Gulf to increase output to over 10 billion Kwh in 2000 and 2002.<sup>4</sup> Grand Gulf is owned by System Energy Resources, Inc. (90%) and South Mississippi Electric Power Association (10%); the plant is operated by Entergy which operates 10 nuclear units at 8 sites. The plant was placed into operation in July 1985 and the license expires in November 2024.

Entergy and its Grand Gulf Nuclear Station have received national awards and recommendations for excellence and safety in plant operations, to include the Voluntary Protection Program Star rating from OSHA for the highest possible industrial safety rating for a work site. Of the nation's 103 operating nuclear power plants, only five have received the VPP Star rating, four of these were awarded to Entergy's nuclear plants – Grand Gulf, Arkansas Nuclear One, River Bend, and Waterford.

## ***NuStart Energy Development, LLC***

Currently, NuStart Energy Development, LLC is seeking operating licenses in anticipation of selecting sites for the construction of advanced nuclear energy plants. According to the NRC Website, the sites being considered are:

- Bellefonte Nuclear Plant in Northeast Alabama, owned by the Tennessee Valley Authority
- Grand Gulf Nuclear Station, Port Gibson, Miss., owned by Entergy Nuclear
- River Bend Nuclear Station, St. Francisville, La., also owned by Entergy
- Savannah River Site, a Department of Energy facility near Aiken, S.C.
- Calvert Cliffs Nuclear Power Plant in Lusby, Md., owned by Constellation Energy
- Nine Mile Point Nuclear Station in Scriba, N.Y., owned by Constellation Energy

The NuStart project is a major first element of the U.S. Department of Energy's *Nuclear Power 2010*. The *Nuclear Power 2010* initiative is designed to pave the way for new nuclear power plants with advanced safety characteristics to be built in the United States by the end of the decade. According to the Department of Energy's Website, "*DOE partnered with Dominion Energy, Entergy and Exelon to submit formal applications and to demonstrate NRC's Early Site Permit (ESP) process. All three companies announced that they will seek ESP approvals that would enable them to locate new, safe advanced technology nuclear plants at sites owned by the utilities and currently hosting commercial nuclear power plants. Dominion Energy will seek approval of an ESP application for the North Anna site in Virginia; Entergy will seek approval of the Grand Gulf site in Mississippi, and Exelon will seek approval of the Clinton site in Illinois. The utilities expect to submit applications by fall 2003, for NRC approval by mid-decade. DOE will share the cost of permit application expenses, with each company providing at least 50*

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<sup>4</sup> U.S. Department of Energy: [eia.doe.gov](http://eia.doe.gov)

percent of the funding. The government's total estimated cost-share over a four-year period is approximately \$17 million.<sup>5</sup>"

According to a NuStart press release:<sup>6</sup> "NuStart Energy Development, LLC, is a limited liability company formed in 2004 with eight member companies. These members, plus the Tennessee Valley Authority (TVA) and two reactor vendors form the NuStart Consortium. The consortium objectives are: 1) to demonstrate the US Nuclear Regulatory Commission's (NRC) never-before-used licensing process for obtaining a combined Construction and Operating License (COL) for an advanced nuclear power plant. And 2) complete the design engineering for the two selected reactor technologies.

*With respect to the first objective, NuStart's mission is simply to test the process, to see how efficiently and effectively the NRC and industry can work together towards a positive result — the granting of a COL. Construction decisions at this time are premature. As such, none of the companies involved is obligated to build a new nuclear plant, although individual companies or groups of companies could decide to use the COL.*

*With respect to the second objective, NuStart will work with the reactor vendors to complete the one-time generic engineering work necessary for the standardized plant designs. This will position these technologies for deployment when needed, thereby significantly reducing the time to market for a new nuclear plant. NuStart has begun a process that is projected at this time to take until 2011."*

### ***In-Lieu Tax Payments Related to Grand Gulf Nuclear***

Investor-owned utilities operating on a large scale within the state of Mississippi are assessed centrally by the Mississippi State Tax Commission, using a unit approach to valuing company assets based on income. Property owned by these firms is taxed at the local level on approximately 30% of its true value. Entergy, Mississippi Power Company, and Gulf Power Company are treated in this manner. System Energy Resources, operating the Grand Gulf Nuclear Power station, is also assessed centrally by the state, it makes in-lieu tax payments to state and local governments as mandated by statute. The estimated amount of property taxes paid by these three firms is approximately \$95 million annually.<sup>7</sup>

This centralized approach to determining the value of generation facilities is directly related to the income and revenues of the power installations and the value of these facilities, in turn these values are related to the income and revenues of both the municipalities and counties who receive in-lieu payments which are in turn related to the value. Consequently, municipalities and counties have a vested interest in the financial success and profit of these plants. For example, an older plant may lose value if it cannot produce power as cheaply as newer types of facilities. Conversely, a plant that proves to be an effective power producer may gain value,

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<sup>5</sup> U. S. Department of Energy  
[http://www.energy.gov/engine/content.do?PUBLIC\\_ID=13029&BT\\_CODE=PR\\_PRESSRELEASES&TT\\_CODE=PRESSRELEASE](http://www.energy.gov/engine/content.do?PUBLIC_ID=13029&BT_CODE=PR_PRESSRELEASES&TT_CODE=PRESSRELEASE)

<sup>6</sup> <http://www.nustartenergy.com/AboutUs.aspx#FactSheet>

<sup>7</sup> "Local Property Taxes and Retail Competition in the Electric Industry," The John C. Stennis Institute of Government, Mississippi State University, 1999.

thereby increasing local revenues. Of most concern would be plants that are taken offline. If this event occurs, the entire revenue stream related to a plant may be affected.

For communities that host generation assets, the real estate itself has significant value outside of the buildings and equipment upon it. Power generation facilities are becoming increasingly difficult to site. Siting regulations make even old sites of significant value to new developers seeking to enter the power market by building new facilities – environmental regulations alone make the installation of new transmission grid facilities extremely costly. Of significant concern, are nuclear power plants. The regulatory and disaster mitigation costs related to the routine operation of a nuclear power plant are very high, driving up per-unit costs of nuclear-produced power.

In-lieu payments related to Grand Gulf are approximately \$20 million annually. Payments made to the Mississippi State Tax Commission are then redistributed to the counties, municipalities, and to Mississippi's General Fund. With the exception of Claiborne County and Port Gibson, distributions made to counties and municipalities based upon proportional amounts of electric energy consumed by retail customers in each county and in each municipality based upon the total amount of electric energy consumption by all retail customers the utility in the State of Mississippi. Historically, the distribution of these in lieu payments has been a hotly debated issue in the state.

In 2005, the Mississippi Tax Commission distributed \$7,408,610 of nuclear plant in lieu payments to 140 Mississippi Municipalities; compared to \$7,505,635 in 2004. In 2005, distribution to municipalities ranged from \$1,644,219 received by the City of Jackson to \$217 to the Town of Metcalfe. In 2005, the median in lieu payment related to nuclear power plants was \$8,511; twenty cities and towns received payments in excess of \$100,000 and 55 cities and towns received payments of less than \$5,000. The Town of Port Gibson received \$190,409; the Town of Fayette received \$16,355.29. The Town of Fayette ranked 54<sup>th</sup> of the 140 municipalities that received these nuclear in lieu payments, it received \$16,355 - \$165 less than in fiscal year 2004, but its rank did not change.

In 2005, the Mississippi Tax Commission distributed \$11,391,389 of nuclear plant in lieu payments to 45 counties in Mississippi; compared to \$11,294,364 in 2004. In 2005, distribution to counties ranged from \$7,848,144 received by Claiborne County to \$170.00 received by Calhoun County. In 2005, the median in lieu payment received by Mississippi counties was \$27,039; 12 counties received payments in excess of \$100,000 and eight counties received less than \$5,000. Jefferson County ranked third lowest of all counties receiving in lieu distribution; prior to 2005 Jefferson County received approximately \$4,000 annually. However, in 2005 it received only \$447 compared to \$4,502 in 2004, a reduction of \$4,055 from the prior year.

## **Overview of Jefferson County, MS**

Jefferson County is a deeply rural Mississippi County located in Southwest Mississippi and is bordered on its western boundary by the Mississippi River. The county's population density is 18.8 persons per square mile, the total land area of the county is 517 square miles, and housing density per square mile is 7.4 units – the sixth lowest housing density ratio in the state (Issaquena 2.1; Sharkey 5.6; Kemper 5.9; Greene 6.9; Franklin 7.3; followed by Jefferson County). According to the U.S. Census Bureau the population of Jefferson County Mississippi is the fifth smallest county in Mississippi in terms of population. In 2003, the total population of

Jefferson County was 9,523.<sup>8</sup> Jefferson. From 2000 to 2003 the total population of the county declined by 2.1 percent. By every socio-economic measurement variable, Jefferson County is an extremely impoverished Mississippi community; Jefferson County presents a bleak economic picture.

Mississippi is notable within the United States for its low educational attainment levels, low income, and high unemployment levels; Jefferson County lags behind Mississippi in these measurements of economic and social vitality. Jefferson County has the lowest per capita personal income of the 82 counties in Mississippi - \$13,608. As demonstrated in the table below, Median Household Income in Jefferson County is approximately \$12,800 less than the state's Median Income; the poverty rate is 16 percent higher (nearly double) the state's poverty level. In Jefferson County the percentage of high school graduates is 13 percent lower in the population aged 25 and over than in the state of Mississippi; and unemployment is approximately 18 percent higher in Jefferson than the overall unemployment level in the State of Mississippi.

**TABLE 1: GENERAL SOCIO-ECONOMIC CHARACTERISTICS<sup>9</sup>**

	Jefferson County	State of Mississippi
White persons, percent, 2000	13.1%	61.4%
Black or African American persons, percent, 2000	86.5%	36.3%
High school graduates, percent of persons age 25+, 2000	59.7%	72.9%
Bachelor's degree or higher, pct of persons age 25+, 2000	10.6%	16.9%
Homeownership rate, 2000	80.4%	72.3%
Median value of owner-occupied housing units, 2000	\$48,700	\$71,400
	Jefferson County	State of Mississippi
Persons per household, 2000	2.75	2.63
Median household income, 1999	\$18,447	\$31,330
Per capita money income, 1999	\$9,709	\$15,853
Persons below poverty, percent, 1999	36.0%	19.9%
Minority-owned firms, percent of total, 1997	41.5%	13.1%
Employment status: Population 16 years and over; In Civilian labor force; Employed; Percent (2000)	36.3	54.3

*Source: U.S. Census Bureau, 2000*

### Employment and Economy

With the exception of Issaquena County, Jefferson County has the smallest total employment in Mississippi – 1,837.<sup>10</sup> According to the Mississippi Employment Security Commission, Jefferson County had an unemployment rate of 19.5% in 2000 and an unemployment rate of 18.5% in 2003, compared to a state unemployment rate of 5.7% in 2000 and 6.3% in 2003; and had the highest unemployment rate of any county in Mississippi in 2004 – 20.4%.<sup>11</sup> Approximately 47.8 percent of the employed residents of Jefferson County work within the county; 14.7 percent work in Adams, 14.3 percent work in Claiborne, and 12.3 percent work in Warren County.

### Housing Issues

Within Jefferson County there are approximately 3,819 housing units; Homeownership rates are higher in Jefferson County (80.4%) compared to Homeownership rates at the state level

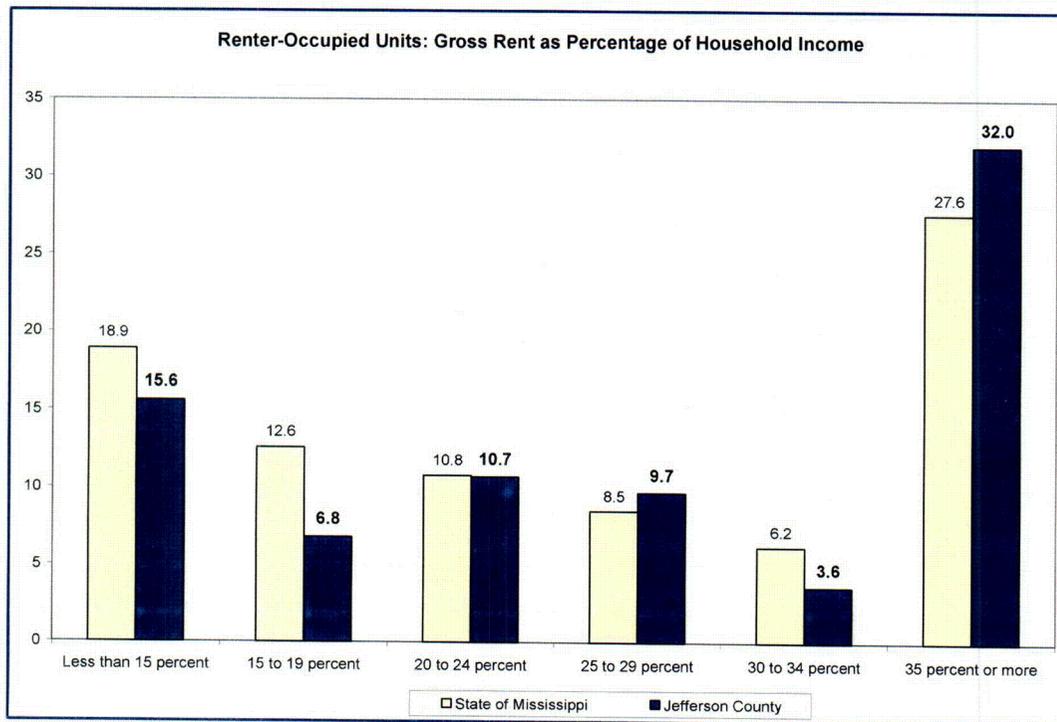
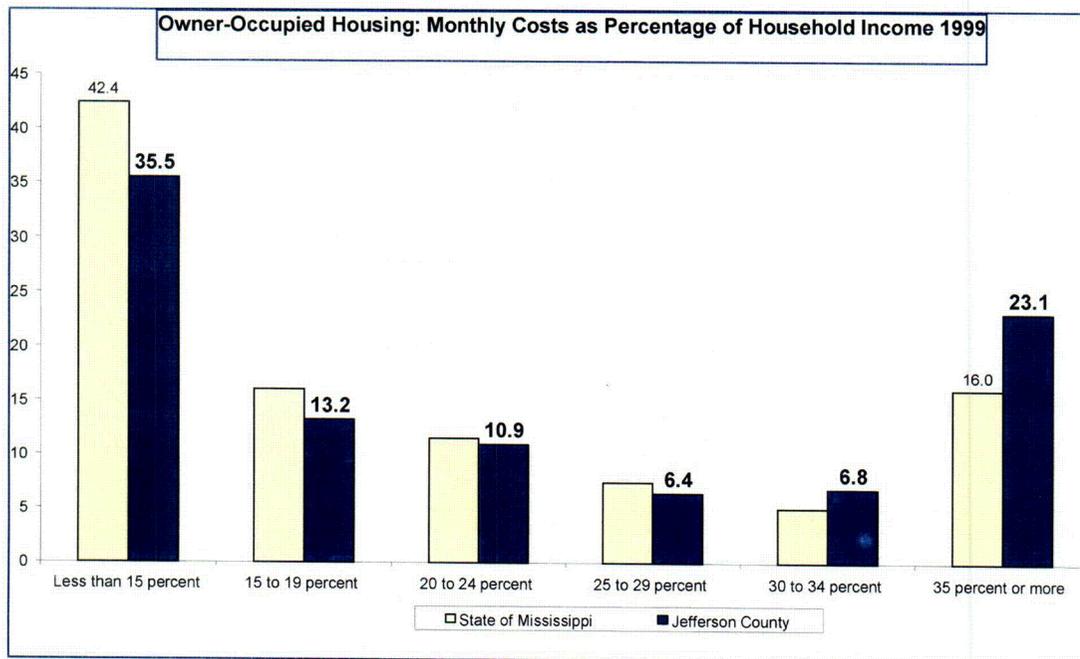
<sup>8</sup> U.S. Census Bureau, 2003

<sup>9</sup> Ibid.

<sup>10</sup> Source: U.S. Census Bureau, Quick Facts 2003.

<sup>11</sup> <http://208.137.131.31/lmi/files/urates/urate.pdf>

(72.3%); however, as demonstrated in the two charts below, the cost of housing, both homeownership and rental, tends to represent a higher burden on residents of Jefferson County as a percentage of Household Income.



Of the 3,819 housing units in Jefferson County, 1,257 are mobile homes; 32.9 percent of housing units in Jefferson County compared to a percentage of 16.6 percent at the state level.

CO2

Residents of Jefferson County lack basic amenities in their homes when compared to other Mississippians. For example, there are 440 homes without telephone service; 75 residential units lack complete plumbing facilities; and 35 residential units lack complete kitchen facilities – the absence of these basic amenities occur at a higher percentage in Jefferson County than is the average across the State of Mississippi, see table below.

<b>HOUSING CHARACTERISTICS</b>						
	Owner-occupied housing units; No telephone service; Number	Owner-occupied housing units; No telephone service; Percent	Renter-occupied housing units; No telephone service; Number	Renter-occupied housing units; No telephone service; Percent	Owner-occupied housing units; Lacking complete plumbing facilities; Number	Owner-occupied housing units; Lacking complete plumbing facilities; Percent
State of Mississippi	31,314	4.1	37,218	12.9	5,783	0.8
Jefferson County	316	11.9	124	19.2	52	2.0
	Renter-occupied housing units; Lacking complete plumbing facilities; Number	Renter-occupied housing units; Lacking complete plumbing facilities; Percent	Owner-occupied housing units; Lacking complete kitchen facilities; Number	Owner-occupied housing units; Lacking complete kitchen facilities; Percent	Renter-occupied housing units; Lacking complete kitchen facilities; Number	Renter-occupied housing units; Lacking complete kitchen facilities; Percent
State of Mississippi	3,232	1.1	4,004	0.5	3,466	1.2
Jefferson County	23	3.6	23	0.9	12	1.9

*Source: U.S. Census Bureau*

### **Overview of Fayette, Mississippi**

Fayette is the county seat of Jefferson County, Mississippi. The population of Fayette is 2,242 according to the U.S. Census Bureau, with a population increase of approximately 400 persons during the period 1990 to 2000. Approximately 97.4 percent of the residents of Fayette are Black or African-American community. Some reference sources indicate that Fayette and Jefferson County have the largest population percentage of African-Americans within the United States.<sup>12</sup>

<b>Population</b>	<b>2000</b>	<b>1990</b>
Fayette, Mississippi	2,242	1,853
Black or African-American	2,183	1,796
White	43	53
Hispanic	14	0
Asian	5	4
American Indian	2	0

*Source: U.S. Census Bureau*

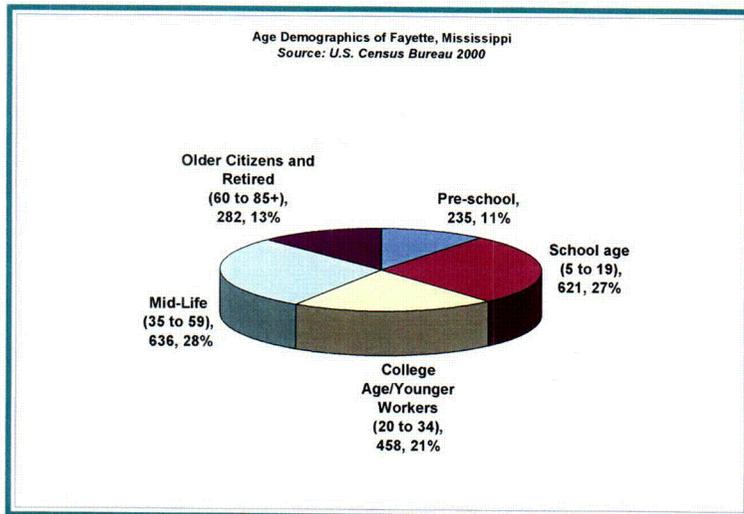
Of the 1,957 sampled by the 2000 Census in Fayette, 1,422 lived in the same house in 1995; 535 lived in a different house in 1995. Of the 535 respondents who moved since 1995, 395 moved to Fayette from another place within Jefferson County and 131 lived within the State of Mississippi but moved into Fayette from a county outside of Jefferson. Of the 58 individuals who

<sup>12</sup> U.S. Census Bureau: <http://www.census.gov/Press-Release/www/2000/cb00-126.html>

lived in a different state, but had moved into Fayette since 1995, 26 moved to Fayette from a Midwestern state; 30 moved to Fayette from a Southern state; two moved to Fayette from a Western state; and none moved from the Northeast.

### Age Demographics

Fayette exhibits a young age demographic, with approximately 38 percent of the population consisting of school-age children; this segment of the population increased approximately 24 percent from 1990 to 2000 (from 685 to 856 persons in the age group 19 years or less). The



magnitude of growth in school age children creates significant issues and potential demand for high quality preschool and after school programs in every age category.

The age demographics of Fayette indicate a large elderly population, approximately 300 persons of whom 156 persons aged 65 and older live alone – this age segment has doubled during the period 1990 to 2000.

<i>Fayette, MS: Age Demographics</i>	
	<b>2000</b>
Pre-school	235
School age (5 to 19)	621
College Age/Younger Workers (20 to 34)	458
Mid-Life (35 to 59)	636
Older Citizens and Retired (60 to 85+)	282

### Housing

There are 843 housing units in the City of Fayette, of these 91.9 percent are occupied and 8.1 percent are vacant; lower than the Jefferson County, Mississippi, or United States average vacancy rates; Fayette also has a significantly lower homeownership level. For the 441 single-family, owner-occupied homes in Fayette, the median value is \$45,900 and the monthly median owner costs are \$548.<sup>13</sup>

<b>COMPARATIVE HOUSING OCCUPANCY 2000</b> (expressed as a percentage)				
	<i>Fayette</i>	<i>Jefferson County</i>	<i>MS</i>	<i>U. S.</i>
<b>Owner Occupied</b>	56.9	80.4	72.3	66.6
<b>Renter-occupied</b>	43.1	19.6	27.7	33.8
<b>Vacant</b>	8.1	13.4	9.9	9.0

Source: U.S. Census Bureau 2000

<sup>13</sup> U.S. Census Bureau, 2000

Approximately 34.4 percent of renters and 31.8 percent of homeowners are paying more than 30 percent of household income to pay for housing costs; when these costs approach or exceed 30 percent the householder is considered to be financially burdened.

**Employment, Income, and Poverty.**

Of the 1,527 persons aged 16 years and over, 633 persons in Fayette are in the Civilian labor force; of these 494 (32.4%) are employed, 139 are unemployed (9.1%), and 892 (58.4%) are not in the labor force.

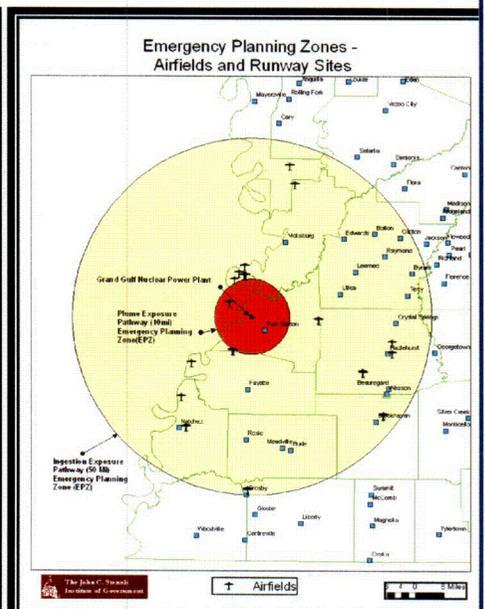
## Jefferson County Emergency Planning Requirements

Within the State of Mississippi, each county has home rule power to determine its local affairs. The power of each county is vested in its board of supervisors. Consequently, if not limited by the constitution of inconsistent with state law, a board may exercise any power and perform any function it deems appropriate to preserve and improve the peace, safety, health, welfare, comfort, and convenience of its residents. This is not only a power, but a duty of county supervisors. A comprehensive review of emergency planning for Jefferson County is required to assure that the community is prepared to respond to a radiological event at Grand Gulf Nuclear Power Station.

This brief assumes a fast-breaking event and concentrates on response that requires an evacuation to save the lives of citizens. Although many other emergency planning activities are required in Jefferson County, of primary urgency is a plan to respond to a significant event. More limited events appear to have been already considered within the framework of Mississippi Emergency Management's Protective Action Area Plan for Claiborne County.

Although conventional wisdom suggests that high profile urban areas are at greatest risk for terrorist attack, the assumption being that terrorist seek sensational events that kill thousands of people. However, the trauma of a significant event in a rural area with the potential to kill hundreds or thousands of people coupled with the lack of preparedness and low level of alert in these areas may present an opportune target for an attack. The impact of such an attack on a nuclear power plant cannot be overstated.

A cursory review of opportunities for terrorist attack indicate two primary methods could be used, either an air attack similar to the events of September 11, 2001 or an attack from a barge moving in proximity to the power plant. As evidenced in the satellite image below, geo-referenced imagery of Grand Gulf is readily available for download from the internet.

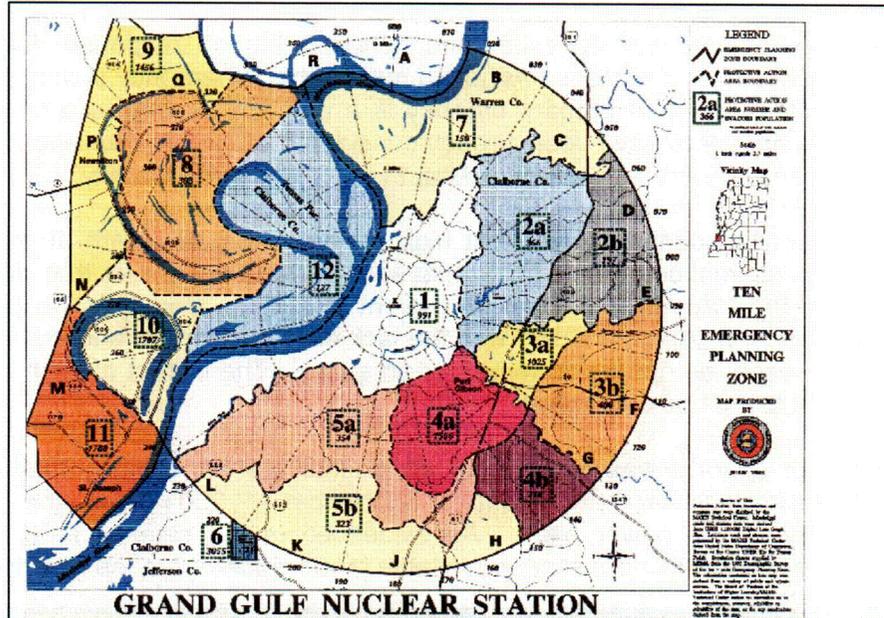


The proximity of approximately 20 airfields to Grand Gulf Nuclear allows limited reaction time to divert a well-planned attack.

## MEMA Radiological Emergency Plan for Grand Gulf

Grand Gulf Nuclear Power Plant is located approximately five miles northwest of Port Gibson, Mississippi in Claiborne County, 9 miles northwest of Lorman, Mississippi in Jefferson County, and approximately 17 miles north of Fayette, Mississippi in Jefferson County. The total population of these areas are: Claiborne County – 11,546 and Jefferson County – 9,546; the major population centers in these counties are Port Gibson, population 1,840 and Fayette, population 2,242.<sup>14</sup> In addition, there are approximately 3,300 undergraduate and graduate students enrolled at Alcorn and 400 faculty, instructors, and support staff.

### MEMA EPZ PLAN



### Protective Action Areas Claiborne County

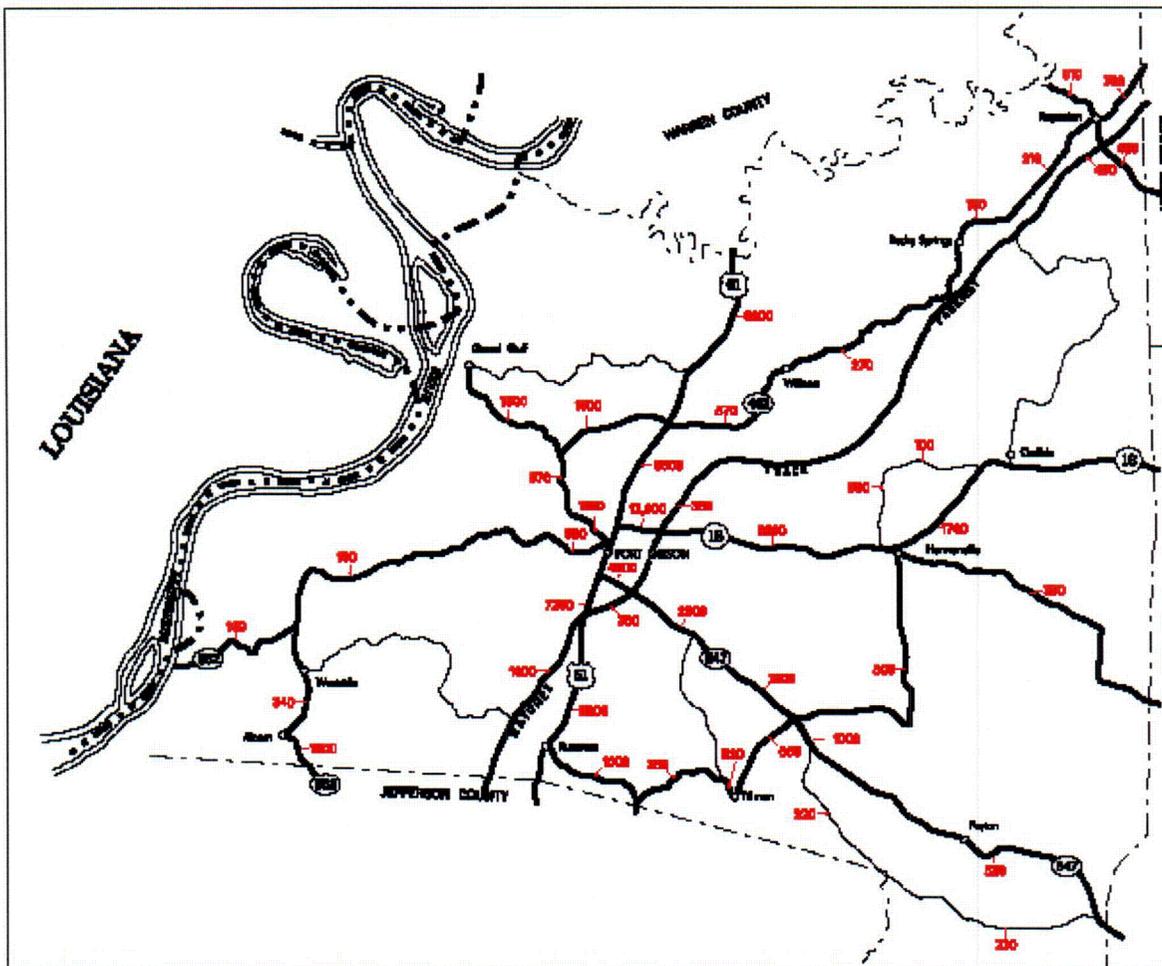
Area	Primary Evacuation Routes	Reception Center
1	U.S. Highway 61 north to Vicksburg	Warren Central High School
2a	U.S. Highway 61 north or MS Route 462 east to Vicksburg	Warren Central High School
2b	U.S. Highway 61 north or MS Route 462 east to Vicksburg	Warren Central High School
3a	MS Highway 18 east to Utica	Hinds Community College, Utica Campus
3b	MS Highway 18 east to Utica	Hinds Community College, Utica Campus
4a	Ms Route 547 south to MS Highway 28 east to Hazlehurst	Hazlehurst High School
4b	Ms Route 547 south to MS Highway 28 east to Hazlehurst	Hazlehurst High School
5a	Ms Route 552 east to U. S. Highway 61 south to Natchez	Natchez High School
5b	Ms Route 552 east to U. S. Highway 61 south to Natchez	Natchez High School
6	Ms Route 552 east to U. S. Highway 61 south to Natchez	Natchez High School
7	U.S. Highway 61 north to Vicksburg	Warren Central High School

<sup>14</sup> U.S. Census Bureau, Summary File 1.

MEMA's radiological emergency plan attempts to divert traffic to alternative road systems to avoid congestion. Therefore, it evacuates areas 1, 2a, and 2b in a north or northeast direction using Highway 61 and MS Route 264. Of concern would be prevailing wind, direction and speed. These evacuation routes might result in routing motorists directly into the plume. Additionally, local residents are aware that Grand Gulf lies to their north and may instinctively head south on highway 61 rather than north along planned evacuation routes towards Grand Gulf.

MEMA's REP identifies areas 5a, 5b, 6 and 7 evacuees to use Highway 61 south through Jefferson County. Of particular concern during an emergency event would be rerouting traffic moving north on Highway 61 through Jefferson County into Claiborne County.

#### TRAFFIC PATTERNS CLAIBORNE COUNTY, MS

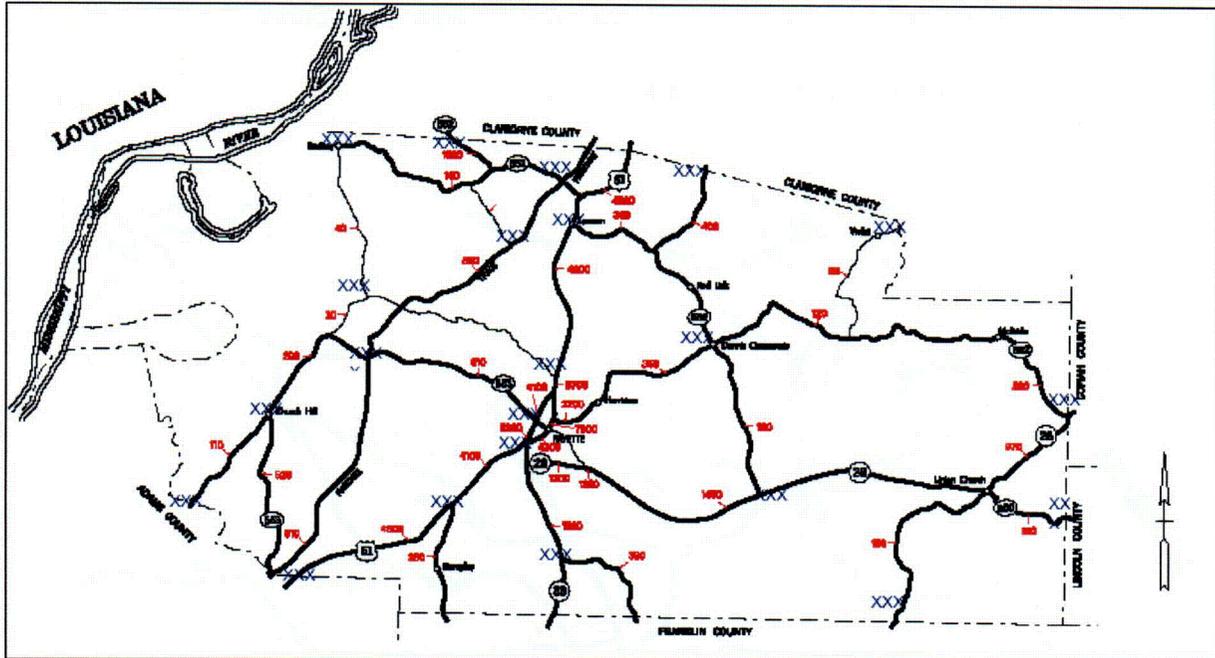


The Vicksburg/Natchez area is a primary destination tourism location. Highway 61 is a primary route of travel for tourists, who will be unfamiliar with the area and are likely to have little knowledge of area highways and roads, creating additional confusion during any evacuation.

Any evacuation would require the immediate mobilization of traffic control posts for the purpose of controlling traffic flow, to provide warning and advice to the traveling public. During the

planning process these traffic control posts should be identified, specific personnel and location assignments should have been completed, and traffic control post staffing personnel should be equipped with two-way radios for communication with the local Sheriff's offices, police departments, communication with the Mississippi Department of Transportation's Traffic Control Post, and other emergency response command and control centers. Additional requirements at Traffic Control Posts will be supplies of water, gasoline, access to traffic cones, signs, and transportation vehicles. Because the time of an event is unpredictable, emergency lighting is also required.

#### HIGHWAY AND TRAFFIC MAP JEFFERSON COUNTY



Claiborne and Jefferson County are rural counties with numerous small, isolated communities, the highway and road system is relatively limited. This enables a rather efficient traffic control system to be established using a network of approximately 18 traffic control posts, identified with blue hatch marks on the above map of Jefferson County. Not only could these traffic control posts be utilized to direct traffic and prevent traffic from moving directly into the plume exposure pathway, they could be utilized as communication posts for interface with residents of isolated towns and population centers throughout the county.

A copy of the existing Mississippi Department of Transportation's *Comprehensive Emergency Transportation Response Plan* and Mississippi Emergency Management's *Radiological Emergency Plan* has been reviewed and a copy of the plan has been submitted to the Jefferson County Board of Supervisors with a list of issues that require further delineation and exploration.

The following is a brief discussion of issues that require further examination: conducted by MEMA and the Mississippi Department of Transportation exhibits elements that raise concern. The primary issue of response time is discussed to illustrate the need for Jefferson County to be prepared to act during a radiological event and not to depend upon assistance arriving in a timely manner. Examples are provided to demonstrate this point to Jefferson County and to

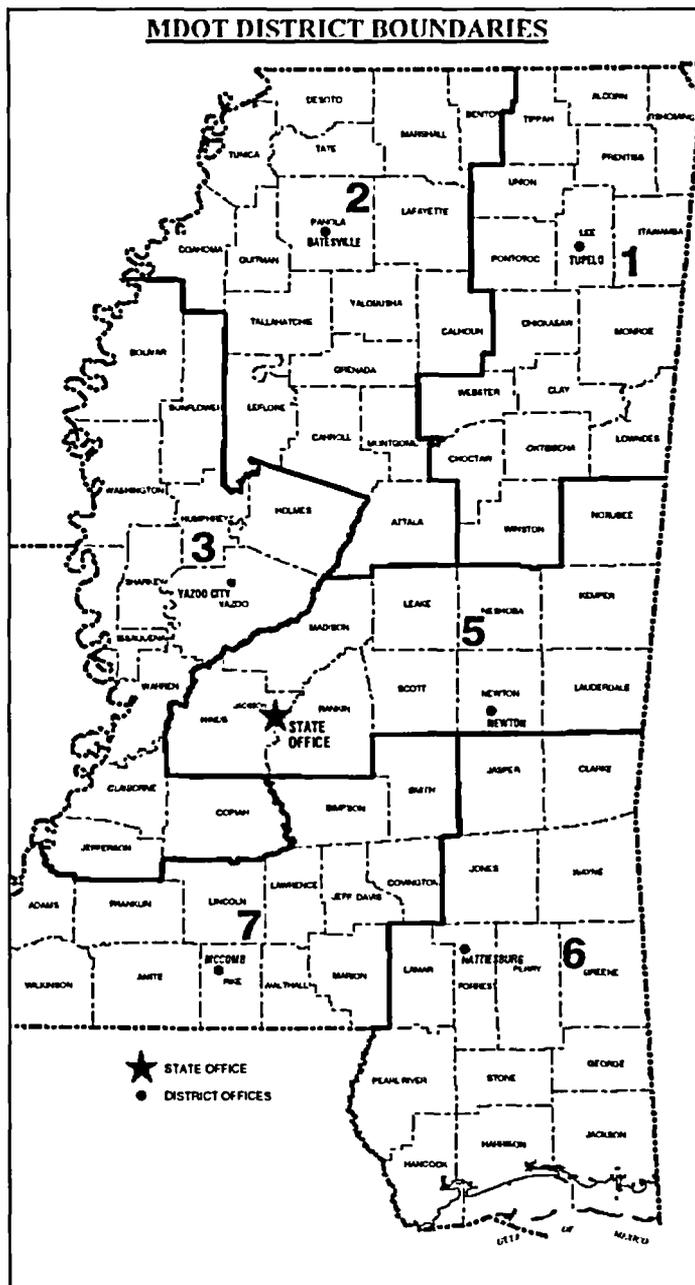
raise issues that require further examination to assure that offsite emergency planning is effective and can be fully implemented in a timely manner.

The State Emergency Operations Center (SEOC) is located in Jackson, Mississippi; this facility is shared with MDOT, MEMA, the Mississippi National Guard STARC. Upon activation appropriate persons will deploy to the SEOC. MDOT is primarily responsible for all traffic control issues during emergency events. District Engineers serve as District Emergency Operations Center Emergency Coordinators. As illustrated in the map below, these districts are located in Tupelo, Batesville, Yazoo City, Newton, Hattiesburg, and McComb with the state office located in Jackson. MDOT has defined district boundaries, as illustrated in the map below MDOT District Emergency Operations Center 3, located in Yazoo City, is designated to meet the needs of Jefferson County during a radiological emergency. The primary route from Yazoo City to Fayette or Jefferson County is directly south on Highway 61, past Grand Gulf Nuclear –

potentially the area of greatest chaos – passing through the plume exposure pathway.

The estimate distance between Yazoo City and Fayette is 98 miles, approximately 1 hour and fifteen minutes under normal conditions. The need to travel against evacuating traffic, through the center of the incident site may be anticipated to significantly impede travel during a radiological emergency event.

According to MDOT Radiological Emergency Plan, "local police and sheriffs are responsible for establishing traffic control within their jurisdictions;" the Mississippi Highway Patrol will staff state traffic control posts; and MDOT will deliver access control equipment including traffic cones, drums, signs and barricades. The MDOT REP indicates that Crew # 6 and #7 will deploy to the Jackson shop to obtain signage for 5 traffic control points in Jefferson County. Upon completion of assigned duties these units would stanby at the Vicksburg Office radio for further instructions. Of concern would the travel time from Jackson to Jefferson County (approximately 1 hour under normal circumstances) moving against evacuating traffic. Upon completion of assignments these crews appear to then travel through the plume exposure pathway to return to



Vicksburg. Further examination of this process is required.

Under emergency circumstances, Jefferson County must assume that assistance from either Jackson or Yazoo may be significantly delayed from arrival in a timely manner. Consequently, Jefferson County must be prepared to take action to protect the citizens of the county.

### **Recommendations**

Currently Jefferson County has no adequate radiological emergency plan that would implementation in a timely and coordinated manner. Planning must begin immediately to prepare to protect the safety and welfare of the citizens of Jefferson County.

### ***Immediate Goals***

- Fayette, the population center of Jefferson County, should have warning sirens to alert citizens to emergency events
- Traffic control points need to be identified and discussions with MDOT and MEMA should be held to discuss the adequacy of the measures
- Interoperable communications radios need to be secured for local emergency responders to assure effective communications between local and state emergency personnel, and to permit notice and responsiveness to changing situations.<sup>15</sup>
- A Certified Emergency Response Team (CERT) should be established in Jefferson County. It is recommended that a team of military veterans be recruited to engage in this training. Military persons are familiar with command and control, and usually have acquired skills and competency in responding to emergency events. The Jefferson County Board of Supervisors should contact MEMA to explore the creation of CERT teams within the county. CERT members will need to be attend training and educational programs and equipment will need to be acquired to make these effective during an emergency event
- A Homeland Security Citizen's Council should be created in Jefferson County to assist with public information and outreach, education, and planning activities. MEMA should be contact for assistance with the establishment of the Council.
- Planning for developing emergency response protocols for schools should begin immediately, the creation of either a CERT or Citizen's Council could provide assistance in developing family emergency plans and working with school officials to identify sheltering and evacuation protocols. Jefferson County may be able to obtain guest speakers or coaches for school programs from either Port Gibson or Alcorn State's CERT groups. MEMA also should be able to provide professional educators to provide training.
- At-risk populations need to be identified and the special needs of the elderly and handicapped population need to be inventoried. Meetings should be held with Medical personnel at Jefferson County Hospital and long-term care facilities to identify the special needs that exist within Jefferson County
- Jefferson County emergency planning requires more effective coordination, information sharing, and process controls. The creation of a Citizen's Council and a CERT team can provide a nucleus within the community for more effective planning and public outreach

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<sup>15</sup> There appears to be inconsistency between MDOT's Comprehensive Emergency Transportation Response Plan which states that an 800 MHz repeater system was set up for Copiah, Claiborne and Jefferson County vs MDOT's Radiological Emergency Response Plan which states that 800 MHz repeater systems are located in Hazlehurst, Vicksburg, and Natchez. These discrepancies need resolution.

- Jefferson County officials and emergency responders should actively participate in state training and meeting activities to develop integrated partnerships with the emergency response community

### **Funding Constraints**

The recommendations provided in the previous paragraph may be accomplished in a cost effective manner. However, funding for basic equipment such as emergency warning sirens and radio communication devices will be required; additional costs will be incurred for training for CERT teams associated with fees and travel for educational activities, the publication of educational literature and supporting information.

It is recommended that one entity within the community acts as the umbrella organization to coordinate the above recommendations. This entity should assume responsibility for organization, supervision, and accountability for all related activities. If the community intends to solicit grant funding for activities related to emergency response planning, proper accounting and transparency is an absolute requisite for good management.

The Director of the Jefferson County Economic Development District should be tasked to identify grant funding sources. The Civic Capacity Development Initiative at the Stennis Institute of Government will provide assistance to Jefferson County to identify grant funding opportunities and provide assistance with securing funding for the Development District to implement the recommendations provided in this document.

EVAN DOSS, JR.  
Concerned Citizen  
P. O. BOX 653  
PORT GIBSON, MISSISSIPPI 39150

JUNE 28, 2005

CHIEF, Rules Review and Directives Branch  
U. S. Nuclear Regulatory Commission  
Mail Stop T6-D59  
Washington, DC 20555-0001

**RE: NUREG-1817**

**COMMENTS**

This environmental impact statement (EIS), that has been prepared in response to an application submitted to the United States Nuclear Regulatory Commission (NRC) by System Energy Resources, Inc. (SERI) for an early site permit (ESP), is with {Emphasis Added} “Appalling”, “Shocking” and very “Disturbing”:

The proposed action requested in SERI’s application is for the NRC to (1) approve a site within the existing Grand Gulf Nuclear Station boundaries as suitable for the construction and operation of a new nuclear power generating facility, and (2) issue an ESP for the proposed site identified as the Grand Gulf ESP site co-located with the existing Grand Gulf Nuclear Station. This EIS includes the NRC staff’s analysis that considers and weighs the environmental impacts of constructing and operating up to two new nuclear units at the Grand Gulf ESP site or at alternative sites, and mitigation measures available for reducing or avoiding adverse impact.

**Section 102 of the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321) directs that an environmental impact statement (EIS) is required for major Federal actions that significantly affect the quality of the human environment.**

To guide its assessment of environmental impacts of a proposed action or alternative actions, the NRC has established a standard for quantifying environmental impacts using the Council on Environmental Quality guidance (40 CFR 1508.27). Using this approach, the NRC established three significance levels: **SMALL, MODERATE, OR LARGE**. The definitions of these significance levels are as follows:

**SMALL** - Environmental effects are not detectable or are so minor that they neither destabilize nor noticeably alter any important attribute of the resource.

**MODERATE** - Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

**LARGE** - Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

This EIS addresses the potential environmental impacts resulting from construction and operation of up to two new nuclear units at the proposed Grand Gulf ESP site located in Claiborne County, Mississippi, { northwest of Port Gibson, Mississippi, the only incorporated City within Claiborne County}.

During the course of preparing this EIS, the staff reviewed the application, including the environmental report submitted by SERI, consulted with Federal, State, Tribal, and local agencies, and in addition, the staff considered the public comments related to the environmental review received during the scoping process, and in processing the application for the Early Site Permit, the staff conducted an independent review of the issues.

**The staff's recommendation to the Commission related to the environmental aspects of the proposed action is that the ESP should be issued.**

Now the staff on Tuesday, June 28, 2005 at 6:00 p.m. in City Hall, in the City of Port Gibson, Mississippi, provides members of the public with information to assist them in formulating comments on this EIS.

## 2.8 Socioeconomics

{The population data for the area affected by the proposed Grand Gulf ESP site are primarily based on the 2000 U.S. Census, as mapped with the landView 5 geographic information system by SERI (SERI 2003c). When economic, employment, or population trends were analyzed over time, comparisons were made between data from the 1990 U.S. Census and the 2000 U.S. Census.}

### 2.8.1 Population Characteristics

{The nearest population center is Port Gibson, Mississippi, located approximately 10 km (6 mi) to the southeast with a population of 1840 based on the 2000 U.S. Census (USCB 2003). The majority of the population in this area is African American.}

{Rural communities, similar to Port Gibson, are located throughout the outlying area and provide limited services (USCB 2003).}

### 2.8.2 Community Characteristics

{The Community surrounding the Grand Gulf ESP site is rural and economically isolated. The County in which the proposed site is located (Claiborne County, Mississippi) and three of the counties next to the proposed site (Copiah and Jefferson Counties in Mississippi and Tensas Parish in Louisiana) are classified as persistent poverty counties (tootle 1999). County poverty estimates in the 2000 U.S. Census indicate that 32.4 percent of individuals are below the poverty level in Claiborne County, compared to the state of Mississippi with 19.9 of individuals below the poverty level (USCB 2004d).}

### 2.8.2.1 Economy

{Approximately 750 people work at GGNS Unit 1, with up to 970 personnel on site during outages (SERI 2003c), making the site one of the large, stable employers in the four-county region. Table 2-11 shows an April 2003 distribution of residence locations of SERI's employees at GGNS. About 46 percent of the employees lived in Warren County (Vicksburg), about 18 percent in Claiborne County, 15 percent in Hinds County, almost 6 percent in Jefferson County, over 4 percent each in Copiah and Franklin Counties, almost 3 percent in Lincoln County, and the rest scattered.}

{The December 2002 labor force data show Claiborne County had an unemployment rate of 12.4 percent as compared to the surrounding four contiguous counties in Mississippi (Copiah, Hinds, Jefferson, and Warren) and Tensas Parish, Louisiana. The surrounding counties had an average unemployment rate of 8.3 percent, and the state of Mississippi had an unemployment rate of 6.1 percent (SERI 2004a).}

### 2.8.2.2 Transportation

{Bald Hill Road is scheduled for reconstruction from Grand Gulf Road to Headley Road to accommodate commercial traffic to/from Port Claiborne. A highway construction plan to extend the present path of Highway 18 is in the early planning stages (see Figure 2-11). This proposed extension will connect Highway 18 to Grand Gulf Road, providing additional access to the Grand Gulf ESP site (SERI 2004a)}.

### 2.8.2.3 Taxes

{Mississippi Code Title 27 addresses taxation of nuclear generating plants and the distribution of tax revenues from nuclear plants (Mississippi Tax Code 2003). This code states that any nuclear generating plant located in the State, which is owned or operated by a public utility, is exempt from county, municipal, and district ad valorem taxes, the nuclear power plant pays the State Tax Commission a sum based on the assessed value of the nuclear generating plant}.

{GGNS is taxed by the State for a sum equal to 2 percent of the assessed value but not less than \$20 million annually. At least \$7.8 million goes to Claiborne County (SERI 2004c). Of this amount, \$3 million is allocated contingent upon Claiborne County upholding its commitment to the GGNS offsite emergency plan. The \$7.8 million represents roughly 83 percent of all Claiborne County revenues (Mississippi State 2002)}.

{The State Tax Commission transfers \$160,000.00 annually to the city of Port Gibson provided that the city maintains its commitment to the GGNS offsite emergency plan. Ten percent of the remainder of the payments are transferred from the Mississippi Tax Commission to the General Fund of the State. The balance of the tax revenue from the GGNS site is transferred to the counties and municipalities in the State of Mississippi where electric service is provided. The tax revenues are distributed in proportion to the amount of electric energy consumed by the retail customers in each county, with no county receiving an excess of 20 percent of the funds (Mississippi Tax Code 2003). This distribution, based on energy consumed, also includes Claiborne County)}.

{Depending on the type of facility (unregulated merchant facility or a facility regulated by the Public Service Commissions of Mississippi and Louisiana), the tax structure of the Grand Gulf ESP facility may be similar to the above for GGNS (a regulated facility), or may be some mutually agreeable amount for an unregulated merchant facility}.

#### 2.8.2.5 Housing

{U.S. Census data for 2000 indicates 567 vacant housing units are located within Claiborne County, representing 13 percent of the total housing in the county (USCB 2000e). Based on the vacancy numbers, no overall housing shortage appears to exist in the region, although availability is more limited in Claiborne County and Jefferson County}.

### 2.8.2.6 Public Services

#### **Police, Fire, and Medical**

{GGNS maintains its own security force to handle the security within the GGNS site property boundaries}.

{GGNS Unit 1 maintains an emergency response team onsite, including a fire brigade to respond to fires within the facility buildings and structures}.

{The Claiborne County Sheriff's Department has performed adequately in all of its offsite emergency responsibilities in Federal Emergency Management Agency emergency planning exercises. However, with a staff of only nine deputies, the department has concerns about the adequacy of its staffing to cover simultaneously its emergency responsibilities at GGNS as well as offsite evacuation in the event of actual emergencies (Scott 2004)}.

{The Claiborne County Hospital has 32 beds. The staff consists of five doctors, ten registered nurses, six nurse's aides, and three X-ray technicians (SERI 2004a). Information for hospitals located in the adjoining counties is listed in Table 2-15 (SERI 2004a). The local hospital does not have the full range of services available all of the time. In an emergency, the Claiborne County Hospital has the space, equipment, and staff to handle about 3 to 4 casualties at a time. It has one decontamination room (14 years old) that is not co-located with the emergency room. Claiborne County officials are concerned this is not sufficient should there be an emergency at the Grand Gulf ESP facility. They believe their communications and transportation capability to evacuate patients is not adequate. County officials do have verbal agreements and are in contact with other licensed facilities within 97 km (60 mi) and believe that emergency responders would come to help from other counties, but they would like to have much more capability under local control (Scott 2004)}.

### 2.8.2.7 Education

{Claiborne County, number of Schools 4, Student population 1195}.

## 2.10 Environmental Justice

{Minority populations are primarily concentrated on the Mississippi side of the river in Claiborne and Jefferson counties, and Hinds County has the largest number of minorities. Claiborne County is entirely composed of minority block groups and contains 10 of the 129 blocks groups containing exceptionally significant minority populations}.

{In fact, most of the area near the proposed site, especially Claiborne and Jefferson counties, has percentages of low-income populations in the range of 20 to 30 percent of the population}.

**To put all of this in some kind of perspective:** The above just-mentioned Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource **{LARGE}**!

**What will it profit the Citizens of Claiborne County,** (1) approve a site within the existing Grand Gulf Nuclear Station boundaries as suitable for the construction and operation of a new nuclear power generating facility, and (2) issue an ESP for the proposed site identified as the Grand Gulf ESP site co-located with Gulf Nuclear Station **and lose the benefits.**

According to this Environmental Impact Statement, the first Grand Gulf Nuclear Power Plant, **did nothing, absolutely nothing,** to change and affect the minority and low-income population, poverty, housing, medical, and the unemployment rate, within the County (Claiborne County) where the first Grand Gulf Nuclear Power Plant is located.

And the Environmental Impact Statement further verifies the following:

#### 5.5.5 Summary of Socioeconomic impacts

{The effect on tax revenues would be positive and **SMALL** except for property tax receipts in Claiborne County, which could be positive and anywhere from **SMALL** to **LARGE**, depending on how the State of Mississippi treats the plant for tax purpose}.

#### 5.7 Environmental Justice Impacts

{With the locations of minority and low-income populations identified, the staff proceeded to evaluate whether the environmental impacts of the proposed action could affect these populations in a disproportionate manner. Based on staff guidance (NRC 2001 and 2004b; 69 FR 52040), air, land, and water resources within about 80 km (50 mi) of the Grand Gulf ESP site were examined. Within that area, potential environmental impacts affect human populations. All physical environmental impacts would be **SMALL** for the general population, and the socioeconomic impacts varied from **LARGE** beneficial to **MODERATE** adverse, depending on how the new facility would be treated for tax purposes and where the plant related population actually would decide to reside}.

#### 7.6 Socioeconomics, Historic and Cultural Resources, Environmental Justice

{If tax revenues dramatically increase, the residents of Claiborne County (who are disproportionately minority and low-income) would enjoy **LARGE** beneficial tax revenue impacts}.

**Time** want permit me to further go into a depth discussion of the Affected Environment, **however**, based upon the in lieu of the payment of county, municipal, and district ad valorem taxes, the first grand gulf nuclear power plant pays the State Tax Commission a sum based on the assessed value of the nuclear generating plant, and are thereby **distributed**. This distribution of in lieu payment is **Racist**, and in fact **Discriminate** against the predominately Black Claiborne County.

Given the severity of the State of Mississippi misconduct, it would be unreasonable in the extreme for the United States Nuclear Regulatory Commission to overlook the obvious, and neglect to take appropriate measure to prevent further actual discrimination against the predominately Black Claiborne County in connection with the second Grand Gulf Nuclear Power Plant.

Based on the information provided in this Environmental Impact Statement, SERI, Entergy, the second Grand Gulf Nuclear Power Plant should be exempt from county, municipal, and district ad valorem taxes, as well as any in lieu payment of county, municipal, and district ad valorem taxes, **totally EXEMPT.**

SERI, Entergy, the second Grand Gulf Nuclear Power Plant would pay a sum based upon **INCOME** to fund local 501(c)(3) organization(s) considering Education, Economic Development, Housing, and Health on a competitive basic, to help develop Claiborne County and its residents (who are disproportionately minority and low-income), no less than the value of the nuclear generating plant, thus further guaranteeing a **TAX WRITE-OFF, for SERI, Entergy.**

Respectfully submitted,



**Evan Doss, Jr.**  
**Concerned Citizen**

# African American Environmentalist Association



Testimony of

**Norris McDonald**

Founder and President  
African American Environmentalist Association

On the

**Draft Environmental Impact Statement**

for an

**Early Site Permit (ESP)**

at the

**Grand Gulf ESP Site**

**Draft Report for Comment**

[NUREG 1817]

Presented to the

**U.S. Nuclear Regulatory Commission**  
**Office of Nuclear Reactor Regulation**

June 28, 2005

**Introduction**

My name is Norris McDonald and I am the founder and president of the African American Environmentalist Association (AAEA). AAEA, founded in 1985, is an organization dedicated to protecting the environment, enhancing human, animal and plant ecologies and promoting the efficient use of natural resources. AAEA includes an African American point of view in environmental policy decision-making and resolves environmental racism and injustice issues through the application of practical environmental solutions. AAEA supports the Early Site Permit (ESP) to build a new nuclear power plant at the Grand Gulf site.

AAEA supports the Nuclear Regulatory Commission (NRC) staff recommendation, based on the draft environmental impact statement (DEIS), that an ESP should be issued to System Energy Resources, Inc.(SERI) to build a new nuclear power plant within the existing Grand Gulf Nuclear Station (GGNS). SERI submitted an ESP application on October 16, 2003 in accordance with 10 CFR 52.17(a)(2). If the ESP is approved, AAEA strongly urges SERI to submit a combined license application in order to accelerate the construction and operation of a specific NRC approved plant design.

AAEA expressed public support for nuclear power for the first time in 2002 in Washington, D.C. after a two-year internal process of studying and debating the issue. The fundamental reasons that AAEA supports nuclear power are:

- Nuclear power provides electricity safely and reliably,
- Nuclear power produces no smog forming emissions,
- Nuclear power produces no greenhouse gases,
- Spent fuel can be reprocessed for reuse,
- Yucca Mountain is acceptable as a repository for non-recyclable products,
- Nuclear power has an excellent quarter century safety record, and
- Nuclear power plants can use nuclear bomb warhead material as a fuel.

Grand Gulf is one of 102 other commercial nuclear power plants that provide 20 percent of our nation's electricity needs and 27.2 percent of the electricity

## **AAEA Statement on the Early Site Permit**

generation in Mississippi. During 2000, Mississippi's nuclear power plants avoided approximately 58,000 tons of sulfur dioxide emissions, 24,000 tons of nitrogen oxide emissions, and 2.47 million metric tons of carbon emissions.<sup>1</sup> The plants also avoided emissions of mercury. Avoiding these additional emissions is particularly important to areas that are experiencing air quality problems due to traffic and industry.

The NRC quantified the environmental impacts of this proposed action using the Council on Environmental Quality (CEQ) guidance (40 CFR 1508.27) and established three levels of significance: Small, Moderate, or Large.<sup>2</sup> A public hearing in Port Gibson, Mississippi (Claiborne County), location of the GGNS, provides stakeholders and NRC staff with an opportunity to discuss the DEIS. AAEA's comments in this statement are limited to the environmental justice issues included in the DEIS.

### **Environmental Justice**

Environmental justice is defined by AAEA as the fair treatment of all people regardless of race or income with respect to environmental issues. AAEA was among the participants at the U.S. Environmental Protection Agency in 1991 when environmental justice policies were first being considered by the agency. AAEA is currently promoting environmental justice locally, regionally and nationally.

The NRC adopted a specific numerical process in the DEIS for defining minority populations.<sup>4</sup> The NRC also eliminated environmental justice in the Atomic Licensing Safety Board process maintaining that it would be adequately addressed in the National Environmental Policy Act (NEPA) process (see 69 FR 52040). The DEIS addresses environmental justice issues.

Charges of environmental racism will be injected into these proceedings. We believe the charge is inaccurate and unfair. Entergy owns and operates nuclear plants in many locations that are not in minority communities. Moreover, the mayor of Port Gibson, the county supervisor and the Entergy vice president at Grand Gulf (George A. Williams), and Congressman Bennie Thompson are all

## **AAEA Statement on the Early Site Permit**

African-American and support a new plant. The elected representatives of the area populations clearly have the best interests of their constituents in mind. They are not racists. City aldermen and the County Board of Supervisors also support a new plant. Although we do not have exact numbers, anecdotal evidence suggests that many African American residents in Port Gibson and Claiborne County want the project.

The African American Environmentalist Association supports the new unit or units and we are an African American-led environmental organization. We would not support the ESP if we believed it was a racist proposal. Our long history of fighting environmental injustice qualifies us to conclude that the project is not racist. The project will benefit African American communities in Port Gibson, Claiborne County, the State of Mississippi and African American communities downwind of the facility in the Eastern part of the United States.

### **4.0 Construction Impacts at the Proposed Site**

AAEA concurs with the NRC staff position that the Grand Gulf ESP site “would not result in disproportionate and adverse offsite environmental impacts to minority and low-income populations.” We agree with the findings that impacts during the construction would be temporary and insignificant. The NRC concluded that there would be a MODERATE impact if tax revenues were not allocated to the local community to mitigate for additional construction traffic and new residents. The city, county and state governments should assure that any tax revenues generated by a new nuclear power plant should be equitably distributed. The tax considerations are included in EIS Section 2.8:

Socioeconomics.<sup>3</sup>

### **5.0 Station Operation Impacts at the Proposed Site**

AAEA believes that the operation of a second nuclear unit at Grand Gulf would be positive for the local, state, regional and national communities. The regional and national impacts would be reductions in smog-forming and greenhouse gases that would be beneficial to downwind states.

## **AAEA Statement on the Early Site Permit**

AAEA concurs with the conclusions in the report that operation of a new facility would be beneficial to the local community and “the impacts to minority and low-income populations from operating new units at the Grand Gulf ESP site would be minor.” The tax questions surrounding the operation of the facility will be determined at some future date by the county and state legislatures. This is also the conclusion of the NRC staff:

It is not clear how the new nuclear facility would be treated for property tax purposes, so it is not clear whether Claiborne County would receive property taxes, sales, and use taxes, or other taxes and public monies commensurate with the costs of its additional emergency management and public services obligations.

### **7.0 Cumulative Impacts**

AAEA concurs with NRC staff in concluding that, “the cumulative environmental impacts related to environmental justice would be SMALL.” Concurrently, “If tax revenues dramatically increase, the residents of Claiborne County (who are disproportionately minority and low-income) would enjoy LARGE beneficial tax revenue impacts.”

### **8.5 Evaluation of Alternative Sites**

The DEIS examines one alternative region of interest (ROI) for considering environmental justice and it is located near Baton Rouge, Louisiana. The facility in this ROI is the River Bend Station. Entergy Nuclear has six existing ROI sites with operating nuclear power plants licensed by the NRC:

1. Arkansas Nuclear One (near Russellville, Arkansas)
2. Grand Gulf Nuclear Station
3. James A. FitzPatrick Nuclear Power Plant (near Vicksburg, Mississippi)
4. Indian Point Point Energy Center (Buchanan, New York)
5. River Bend Station (near Baton Rouge, Louisiana)
6. Waterford-3 (near New Orleans, Louisiana)

## **AAEA Statement on the Early Site Permit**

The ROI is the geographical area considered in searching for candidate ESP sites. AAEA concurs with the NRC staff findings that the impacts of a new unit or units at the River Bend site on minority and low-income populations would be SMALL. No adverse or disproportionately high impacts were identified. The city of Port Gibson and the residents of Claiborne County should be aggressively petitioning SERI to build the plant in their jurisdiction. There is no ironclad guarantee that the Grand Gulf location will be the site of the new plant. Stakeholders should be aware that the competitive climate for new nuclear facilities is increasing.

### **Recommendation**

The DEIS should contain racial and income demographic information in chart and narrative forms early in the report (Section 2.8 Socioeconomics). Although the information is illustrated in map form in Figure 2-12 and Figure 2-13, it would be beneficial for readers if it were presented in chart form with narrative explanations. For instance, the following demographics data should be included early in the report. According to the 2000 Census, African Americans are 12.3% of the population in the U.S., 36.3 % of the population in Mississippi, 84.1% in Claiborne County and 80% in Port Gibson.

### **Conclusion**

AAEA supports the ESP for the Grand Gulf location. We encourage the facility owner to accelerate its decision to apply for a construction and operating license and to construct a new plant at the earliest possible date.

## AAEA Statement on the Early Site Permit

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<sup>1</sup> Nuclear Energy Institute, Website.

<sup>2</sup> **SMALL** – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

**MODERATE** – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

**LARGE** – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource

<sup>3</sup> Mississippi Code Title 27 addresses taxation of nuclear generating plants and the distribution of tax revenues from nuclear plants (Mississippi Tax Code 2003). This code states that any nuclear generating plant located in the State, which is owned or operated by a public utility, is exempt from county, municipal, and district ad valorem taxes. In lieu of the payment of county, municipal, and district ad valorem taxes, the nuclear power plant pays the State Tax Commission a sum based on the assessed value of the nuclear generating plant.

GGNS is taxed by the State for a sum equal to 2 percent of the assessed value but not less than \$20 million annually. At least \$7.8 million goes to Claiborne County (SERI 2004c). Of this amount, \$3 million is allocated contingent upon Claiborne County upholding its commitment to the GGNS offsite emergency plan. The \$7.8 million represents roughly 83 percent of all Claiborne County revenues (Mississippi State 2002).

The State Tax Commission transfers \$160,000 annually to the city of Port Gibson provided that the city maintains its commitment to the GGNS offsite emergency plan. Ten percent of the remainder of the payments are transferred from the Mississippi Tax Commission to the General Fund of the State. The balance of the tax revenue from the GGNS site is transferred to the counties and municipalities in the State of Mississippi where electric service is provided. The tax revenues are distributed in proportion to the amount of electric energy consumed by the retail customers in each county, with no county receiving an excess of 20 percent of the funds (Mississippi Tax Code 2003). This distribution, based on energy consumed, also includes Claiborne County.

Depending on the type of facility (unregulated merchant facility or a facility regulated by the Public Service Commissions of Mississippi and Louisiana), the tax structure of the Grand Gulf ESP facility may be similar to the above for GGNS (a regulated facility), or may be some mutually agreeable amount for an unregulated merchant facility.

<sup>4</sup> For the purpose of the [NRC] staff's review, a minority population is defined to exist if the percentage of each minority, or aggregated minority category within the census block groups potentially affected by the ESP for the Grand Gulf ESP site, exceeds the corresponding percentage of minorities in the entire state of Mississippi or Louisiana by 20 percent, or if the corresponding percentage of minorities within the census block group is at least 50 percent. A low-income population is defined to exist if the percentage of low-income population within a census block group exceeds the corresponding percentage of low-income population in the entire state of Mississippi or Louisiana (as applicable) by 20 percent, or if the corresponding percentage of low-income population within a census block group is at least 50 percent.

**Remarks by  
Scott Peterson  
Vice President  
Nuclear Energy Institute**

**Grand Gulf Early Site Permit  
Environmental Impact Statement Meeting  
June 28, 2005**

Good evening.

I am Scott Peterson, vice president at the Nuclear Energy Institute. NEI represents 270 companies that use nuclear energy technologies for the production of energy, medical uses, and other beneficial uses of nuclear technology

I would like to applaud Entergy for pursuing an early site permit at the Grand Gulf nuclear power plant, and for its efforts in preserving options to make prudent future choices for providing affordable, reliable electricity to its customers.

By preserving the option to build new nuclear power plants in the United States, Entergy is ensuring that we maintain a diversity of electricity supply options.

Here is the reality. When our children are adults, America will need 50 percent more power than we use today. We will need all resources to produce safe, reliable, affordable generation -- nuclear energy, renewables, coal and natural gas.

Today, all renewables produce 2 percent of our electricity. We'll need more. Today, nuclear power produces 20 percent. We'll need more if we are to maintain our quality of life for the next generation. We'll need more electricity from all sources.

This diversity helps us keep energy reliable and affordable ... and reduces our dependence on foreign supplies.

Entergy is not alone in this endeavor.

It is joined by several other energy companies testing new federal government licensing processes—all part of an effort to look at providing electricity for the future.

And these efforts are broadly supported by the public, policymakers and, in the last few years, by leading environmentalists. President Bush called for the construction of new nuclear plants in a speech last week at the Calvert Cliffs nuclear power plant in Maryland. And the U.S. Senate today passed comprehensive energy policy legislation by a broad bipartisan margin – 85-12. Like the House version of the bill, the Senate legislation includes provisions to support the construction of advanced designed nuclear power plants.

Simply put, it makes sense for Entergy to take this step of exploring its options for serving millions of consumers in Mississippi who depend on them for affordable electricity.

Nuclear energy is the nation's second largest electricity source that powers our energy-hungry, high-tech economy ... in an environmentally responsible manner. That helps secure our energy supply.

Nuclear energy helped back oil out of the electricity sector in the 1970s and 1980s. It can do the same thing in the transportation sector by cleanly producing hydrogen for vehicles powered by fuel cells.

And nuclear power is the only large-scale, emission-free source of electricity that we can readily expand to meet our growing energy demand.

Nuclear power plants also emit no greenhouse gases; chief among them is carbon dioxide. In 2004, U.S. nuclear plants prevented nearly 700 million metric tons of carbon dioxide—the same as eliminating the carbon dioxide emissions from 9 out of 10 passenger cars in the entire country.

These clean air benefits are why support for nuclear energy is widespread among leaders in government, business and academia and is growing among many environmentalists. Six out of 10 self-described environmentalists favor nuclear energy.

And many speakers tonight have discussed security at our plants. We're serious about security, because we want to protect our workers, our families and our neighbors. Nobody is more committed to the safety and security of our workers and neighbors than the industry. We are one of the few industry's whose security is regulated by the federal government, and we have met all federal requirements. Our plants are inspected daily by the NRC.

Nuclear plant security is based on three important and coordinated levels: structural security of the plant itself, including state of the art design and secure physical construction; automated security, including 24-hour monitoring and failsafe mechanisms; and security provided by highly trained, well-armed security officers there to protect the facilities.

Today, more than 100 nuclear power reactors are an important part of America's diverse energy mix. Along with solar and wind, nuclear is an essential provider of emission-free electricity.

The early site process preserves the option to build new nuclear power plants, helping ensure that we will have a diverse, secure, sustainable energy supply to power our future. We need reliable ... affordable ... clean sources of energy for Mississippi and America.

An editorial last week in the Clarion-Ledger in Jackson put it this way: "The issues of nuclear energy — including technology — have changed dramatically since the Grand Gulf was built. A mix of energy sources outside of oil and gas, including nuclear, is needed for the future. Entergy is right to plan ahead."

And the Washington Post, in an August 2004 editorial on energy policy, said it is time to "look again at nuclear energy, a taboo issue yet potentially a huge source of homegrown, non-carbon producing energy."

Entergy is doing just that ... looking at its options for producing electricity for future generations in a way that is safe, sustainable and affordable for all consumers. That's good for all residents of Mississippi and the Southeast.

Let me close with one other important benefit that may surprise many of you...and one of the most important recycle programs in the world.

Many U.S. nuclear plants use uranium for fuel that has been extracted from Russian warheads—10,000 warheads in all by the end of this year. That's 10,000 warheads that used to be aimed at U.S. cities now powering the U.S. economy...lighting our cities and rendering those weapons useless for war.