IMPORTANT EMERGENCY INFORMATION

PLEASE READ AND KEEP!

Grand Gulf Nuclear Station

Emergency Public Information

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What to do in case of a Nuclear Power Plant Emergency

LISTEN FOR 3 TO 5 MINUTE SIREN SIGNAL

People who live, work, visit and go to school within the 10-mile Emergency Planning Zone (EPZ) will be notified by sirens, tone-alert receivers and/or information broadcasts on radio or television. The Coast Guard and state officials will alert boaters and traffic on waterways.

REMEMBER, hearing a siren or tone-alert does NOT mean evacuate. It simply means TURN ON YOUR RADIO and listen for instructions. The radio stations listed on this page or your NOAA weather radio will give the most up-to-date information on what to do.

IF ORDERED TO SHELTER IN PLACE

Remain in your home. Close all doors and windows. Turn off all outside sources of air (attic or window fans.) Turn heating or air condition unit to "recirc" or "vent closed." Close fireplaces. Use the phone only during a personal emergency. Stay tuned to local radio stations.

IF ORDERED TO EVACUATE

Bring these items with you if needed: Clothing, medicines, baby supplies, blankets, pillows, sanitary supplies, portable radio, flashlight, first aid kit, batteries. Check these: 1. Turn off appliances (except refrigerators and freezers) and faucets. 2. Close all blinds, curtains. 3. Check your home for security. 4. Lock the doors. 5. Tie a white cloth on or near the front door to show that you have left. 6. Check with your neighbor to see if they are able to leave. 7. Print and place a copy of the cover page from this document on your dashboard so you can be identified by emergency workers.

ADDITIONAL INFORMATION

Handicapped- Call your local civil defense/emergency preparedness office for help.

Students- If school is in session, children will be taken to a safe area and cared for until the parent/guardian arrives. Their safety is first and foremost. Please do not go to schools to pick up children.

Some children must spend time by themselves. Their parents must work or tend to other duties. If you are one of these parents, please speak with your children about the proper emergency response in the event of an incident at the nuclear station. Then, if you are away, your children will know what to do until you return.

MONITOR AND PREPARE A type of precautionary action intended to advise the public within the EPZ that a serious emergency at the nuclear power plant exists. Persons directed to monitor and prepare should monitor their media information source and prepare for the possibility of evacuation, sheltering in place, or other protective actions. If an evacuation is underway, individuals who are not involved in the evacuation should remain off evacuation path roadways to allow for those who are instructed to evacuate to do so.

Expectations for those under a "monitor and prepare" instruction include:

- Reunite with family members
- Monitor information channels
- Prepare for the possibility of evacuation
- Keep off the evacuation path roadways, until instructed to evacuate

Stay Tuned to your Radio. Remain Calm. Follow Instructions!

FOR PERSONS IN MISSISSIPPI (24-hour broadcasting):

Jackson/Vicksburg – WMSI at FM 102.9
Jackson – WJMI at 99.7
Jackson – WJDX at AM 620
Jackson – WMPN at FM 91.3
Lorman – WPRL at FM 91.7
Natchez – WQNZ at FM 95.1
McComb – WAKH at FM 105.7
Port Gibson – WATU at FM 89.3
WTSY at FM 97.1
Vicksburg – WRTM at FM 100.5 and AM 1490

FOR PERSONS IN LOUISIANA (24-hour broadcasting): Monroe – KMVX-FM at FM 101.9, WTSY-LP at 97.1, and KMLB-AM at AM 540

FOR MORE INFORMATION DURING EMERGENCIES CALL: EMERGENCY INFORMATION CENTER 1-800-499-2203

FOR MORE INFORATION DURING NON-EMERGENCIES CALL YOUR LOCAL EMERGENCY PREPAREDNESS OFFICE:

Claiborne County Civil Defense Emergency Management Agency: (601) 437-4684 or (601) 437-3996
Tensas Parish Office of Homeland Security and Emergency Preparedness: (318) 766-3992 or (318) 766-3376
Mississippi Emergency Management Agency: 1-866-519-6362
Louisiana Governor's Office of Homeland Security and Emergency Preparedness: (225) 925-7500

Emergency workers urge you to know emergency plans.
This brochure is prepared for you who live, work, visit, and go to school near the Grand Gulf Nuclear Station. It gives basics about the plant and information you may need in an emergency. Grand Gulf Nuclear Station and local and state officials worked together to create an emergency preparedness plan for residents living in Tensas Parish and Claiborne County. This brochure is about this plan. Remember, this is just part of the emergency preparedness effort provided by you locate and state officials. Please read this information carefully and study the map. If you and your family are familiar with this plan, you will be better prepared for an emergency.

Marvin Ball, Director, Port Gibson/Claiborne County Civil Defense Emergency Management Agency (601) 437-4684
Kiley Sanders, Director Tensas Parish Office of Homeland Security and Emergency Preparedness (318) 766-3992 Cell 318-557-8983

Radiation is Energy

Radiation is a form of energy. It comes from radioactive elements, natural and man-made, whose atoms are unstable. Radiation has been around since the beginning of time.

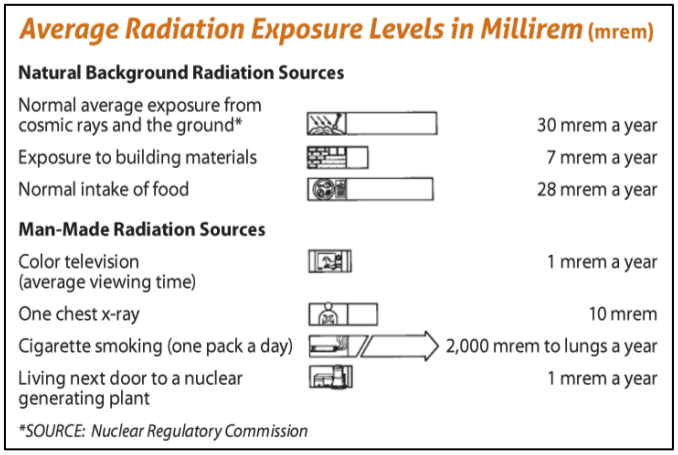
Radiation is all around us. It is in the air we breathe, the food we eat, and the water we drink. It is in our homes and even in our bodies. This is called natural or background radiation.

In addition to background radiation, there is also man-made radiation. It comes from such things as medical and dental x-rays, color televisions, smoke detectors and some watches with dials that glow in the dark. Very small amounts of radiation come from nuclear power plants.

Radiation is measured in units called millirems. A millirem is a unit used to measure radiation dose to humans. The drawing on this page shows how much radiation we get from different things.

For radiation to cause any measurable biological effect in human beings, most scientists agree that the exposure must reach about 25,000 millirems – in a single, short-time exposure.

Federal standards drawn up and enforced by the Nuclear Regulatory Commission (NRC) require that workers at nuclear power plants receive no more than 5,000 millirems of radiation a year.



Emergencies are Classified in Four Ways

TERMS YOU NEED TO KNOW (Emergency Classification Levels)

A **Notification of Unusual Event** is the lest serious of the four emergency classifications. It means there is a problem that is being handled by plant workers. Strict federal rules require that a number of problems are reported as Unusual Events even though they pose no danger to the public. They are reported to the Nuclear Regulatory Commission and to the local and state officials.

An **Alert** is an event that could affect plant safety. Even though there is still no danger to the public, local and state officials may set up emergency operation centers in case the situation at the plant gets worse.

A **Site Area Emergency** is an event that could possibly affect the public. The sirens may be sounded to alert the public to listen to their radios for information and instructions.

A **General Emergency** is the most serious of the four emergency classifications. Local, state and federal authorities would take action to protect the public. Designated radio stations and the Emergency Alert System would continue to give information and instructions. If necessary, some areas would be sheltered or evacuated.

Monthly Siren Test

Emergency sirens in your area are tested on the first Wednesday of each month.

Words Defined

Contamination- is the presence of radioactive material in unwanted places (on the skin, in water or on food.) It usually can be removed by washing.

Emergency Planning Zone (EPZ)- is the area for which planning is done to assure that prompt and effective action is taken to protect the public in an emergency. (Please refer to map.)

Exposure- is receiving radiation. Being in contact with or close to radioactive will result in exposure.

Half-life- is the time required for a radioactive substance to lose one-half its radioactivity. Half-life can vary from minutes to years, depending on the source.

Millirem- a unit used to measure radiation dose to humans.

Potassium Iodide- commonly referred to as KI, is a U.S. Food and Drug Administration (FDA) approved drug that is available without a prescription. KI can be used to protect the thyroid gland from radioactive iodine which may be released under certain emergency conditions at a nuclear power plant. State officials will advise whether KI should be taken in the event of a radiation emergency. People allergic to iodine should not use KI. You may contact your physician to find out if you are allergic to iodine.

Radioactivity- is the property possessed by some elements that give off energy in the form of waves or particles. Radiation may be alpha, beta or gamma.

Alpha particles are the least penetrating. They can be stopped by a sheet of paper.

Beta particles can be stopped by thick cardboard.

Gamma rays are the most penetrating. They are almost the same as x-rays. They can be stopped by heavy shielding such as lead or concrete.

Reception Center- is a facility, located well beyond any danger, at which evacuated people will be registered, checked for contamination and sent to a shelter (if needed).

Protective Action

Protective Action Guidelines (PAGs) are guides used in planning for protective actions to safeguard public health. The actions are taken to limit the radiation dose from ingestion by avoiding or reducing the contamination in or on human food and animal feeds following the release of radionuclides. In order to ensure public safety, Derived Intervention Levels (DILs) have been recommended by the US Food and Drug Administration (FDA) to protect food, milk, and water from radioactive contamination. Each DIL is a set point where protective measures should be considered. For example, if levels of radioactive cesium in milk approach the preventive "response level," surveillance and protective actions for dairy animals may be recommended (e.g., placing dairy animals on uncontaminated feed and water).

EMERGENCY PROTECTIVE ACTIONS

The following are examples of protective actions that may be recommended if a release of radioactive materials occurs and contamination of agricultural products is verified or suspected.

- When you go outside, wear clothing that covers all portions of the body. Remove outer clothing before going indoors.
- Wash hands thoroughly before preparing or consuming food.
- Do not engage in any dust producing activities such as cultivating, disking, baling, or harvesting. Wear a dust mask or a folded, dampened cloth over your nose and mouth to reduce the quantity of radioactive materials inhaled when such activities cannot be avoided.
- Do not process or distribute agricultural products until they have been sampled and found to be free of contamination.
- Do not destroy, slaughter or market animals.

Several of the response actions, which may be taken to protect agriculture products, animals, and other agriculture commodities, include:

- Temporary holding of food crops from market.
- Quarantine of food, animals, and other agriculture commodities.
- Placing animals on stored feed in place of grazing or forage.

Giving Animals Protected Feed

You may be advised to place animals on protected feed and water. This will help prevent contamination from harming your animals, and from entering the human food supply. Types of protected feed include:

- Grain stored in covered bins;
- Hay stored in a barn or covered shed.

Sheltering Animals

One way of protecting your animals is to provide them with shelter. Dairy cows and other milk-producing animals should be given priority as these animals can pass contamination on to humans through their milk. Secondary consideration should be given to egg-producing fowl, breeding stock, other livestock and poultry. Barns, milking parlors, machine sheds, garages, corn cribs, and swine or poultry buildings are all possible livestock shelters. Generally, masonry or concrete buildings offer the best protection. Although a ventilation system is needed to keep sheltered livestock healthy, it allows radioactive material to enter the building. Therefore, it is important to limit outside air entering the building to the minimum amount necessary for the animals' safety. Do not use fans for ventilation unless necessary. If you must use fans, set them on low speed to reduce air intake.

What to do with your pets?

If you need to evacuate due to a radiological emergency at a nuclear power plant, you can bring certain domesticated pets and service animals to the designated reception center. These animals include dogs, cats, birds, rabbits, rodents, and turtles traditionally kept in the home for pleasure and can travel in commercial carriers and can be housed in temporary facilities. Service animals are defined as dogs or miniature horses individually trained to do work or perform tasks for people with disabilities. Any other type of animal that is not listed above will not be allowed at the reception center or shelters.

In order for a pet to gain access into an emergency shelter, the owner will need to ensure the following: proof of vaccination, three (3)-day supply of food and water for each pet, leash and collar for each pet, medication, litter box, crate or carrier large enough for your pet to stand up and turn around in, and comfort items.

If you chose to leave your pets at home, place them inside of your home or in an enclosed garage with a supply of protected food and water that will last for an extended period of time.

Protection from Packaged Food Products

Food in packaging prepared before the release of radioactive material will not be harmful to eat as long as the outer wrappings are carefully removed and discarded.

Food, Milk Processors, Warehouses, and Commodity Terminals

Windows and vents to the outdoors should be closed. Any system that draws air from the outdoors to the inside should be shut down, such as vacuum systems, air conditioners and compressed air systems.

PREVENTATIVE PROTECTIVE ACTIONS

Preventative Protective Actions are measures taken to prevent or minimize contamination of food products.

Milk: Remove all dairy animals from pasture, shelter them if possible, and provide them with protected feed and water.

Fruit and Vegetables: Wash, scrub, peel or shell fruits and vegetables, including roots and tubers to remove surface contamination.

Meat and Meat Products: Place animals on uncontaminated feed and water.

Poultry and Poultry Products: Monitor poultry if they are raised outdoors, especially if they are used for egg production. Poultry raised indoors and given protected feed and water are not likely to be contaminated.

Soils: If officials find that the soil is contaminated, proper soil management procedures can be implemented to reduce contamination to safe levels. 1) Idling, the nonuse of the land for a specific period of time may be necessary in some cases. However, in a worst-case situation, removal and proper disposal of soil may be more appropriate. 2) Alternating types of crops may be beneficial. 3) Deep-plowing the soil may keep radioactive substances below the plant root zone, preventing plants from taking up contaminated nutrients, and allow the level of radioactivity to decrease with the passage of time.

Grains: Permit grains to grow to maturity. Additional milling and polishing will remove most of the radioactive contamination.

Water: Cover open wells, rain barrels, and tanks to prevent contamination. Filler pipes should be disconnected from storage containers that are supplied by runoff from roofs or other surface drain fields.

Food Processors and Distributors: Radioactive contamination of milk or food products in an affected area can occur during processing or transportation. These products should not be released for consumption until they are deemed safe or a decision is made to dispose of them.

EFFECTS OF CONTAMINATION OF HUMAN FOOD AND WATER SUPPLIES

The amount of radioactive material released into the atmosphere, the duration of the release, and weather conditions, all can affect the accident's impact on people, animals, crops, land, and water near the site of the emergency. An initial concern would be the condition of fresh milk from dairy animals grazing on pasture and drinking open sources of water. Testing may be performed at the farm, the transfer station, or the processing plant. If fresh milk and processed milk products are shown to be contaminated, state officials will decide whether to dispose of them or hold them until safe for consumption.

Another concern would be the possible contamination of vegetables, grains, fruits, and nuts. The severity would depend on the time of year the emergency occurred. The time just before or during harvest is the most critical period. Crops may be sampled and analyzed by state officials to determine if they are safe to eat.

An additional concern would be the possible impact of the contamination on livestock and poultry. Pasture, feed, and water sources, as well as meat and poultry products, may be sampled and analyzed to determine if the meat and poultry products are safe to eat. Contamination of drinking water supplies is not likely to be a problem. If it occurs, it probably will affect only surface water supplies and not ground wells or underground water sources.

If land becomes contaminated, proper soil management techniques can reduce contamination of crops grown on the land. The procedures to be used would depend on the severity of contamination and specific crops to be grown.

Additional information is available from:

• Governor's Office of Homeland Security & Emergency Preparedness.... 225-925-7500	www.gohsep.la.gov
• Louisiana Department of Environmental Quality 225-219-0941	www.deq.louisiana.gov
• Louisiana Department of Agriculture and Forestry 855-452-5323	www.ldaf.state.la.us
• Mississippi Emergency Management Agency 800-222-6362	www.msema.org
• Mississippi State Department of Health 601-987-6893	www.msdh.state.ms.us
• Mississippi Department of Agriculture and Commerce 601-359-1100	www.mdac.state.ms.us
• Your local County or Parish Extension Office	

Plans Made for School Children

Special care has been taken to protect school children. If an evacuation is ordered, there is an emergency plan for school children within the EPZ.

- School officials will be contacted by local civil defense/emergency preparedness officials in the event of an emergency.
- The children will be assembled, accounted for and taken by bus to a Reception Center, All Reception Centers are more than 10 miles from the nuclear station. To find out which Reception Center your children will be taken to during an emergency, refer to the Protective Action Sections map and information on the following pages, check the "Evacuation of Schools" tab on the website or mobile app, or contact your local emergency preparedness office listed in this brochure.
- Once school buses reach their assigned Reception Center, the children will be accounted and cared for until their parents pick them up.
- **It is important that you do not try to pick up your children at their school. Go to the Reception Center where your children are located using your evacuation route. (See map on next page.)**

Whatever the situation, children in school during an emergency will be given top priority. They will be moved under close adult supervision.

Residents with Special Needs

Your local emergency preparedness offices maintain records of people with special needs and will help during an emergency. They can notify and evacuate people with special needs during an emergency.

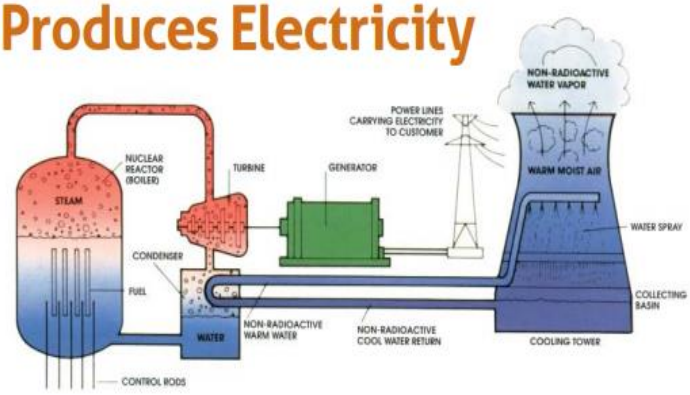
If you or someone you know is hearing impaired, blind, has a physical handicap or is in need of transportation, please complete the special needs form on the website or mobile application.

If you move, notify your local preparedness office.

How you can help those with special needs: If you know of someone who is hearing impaired, blind, has a physical handicap or is in need of transportation, you can help with carpools or by contacting your local emergency preparedness office to make sure they are on the list of people with special needs.

Contact information for local emergency preparedness offices is listed on Page 2 of this document.

Grand Gulf Nuclear Station Produces Electricity



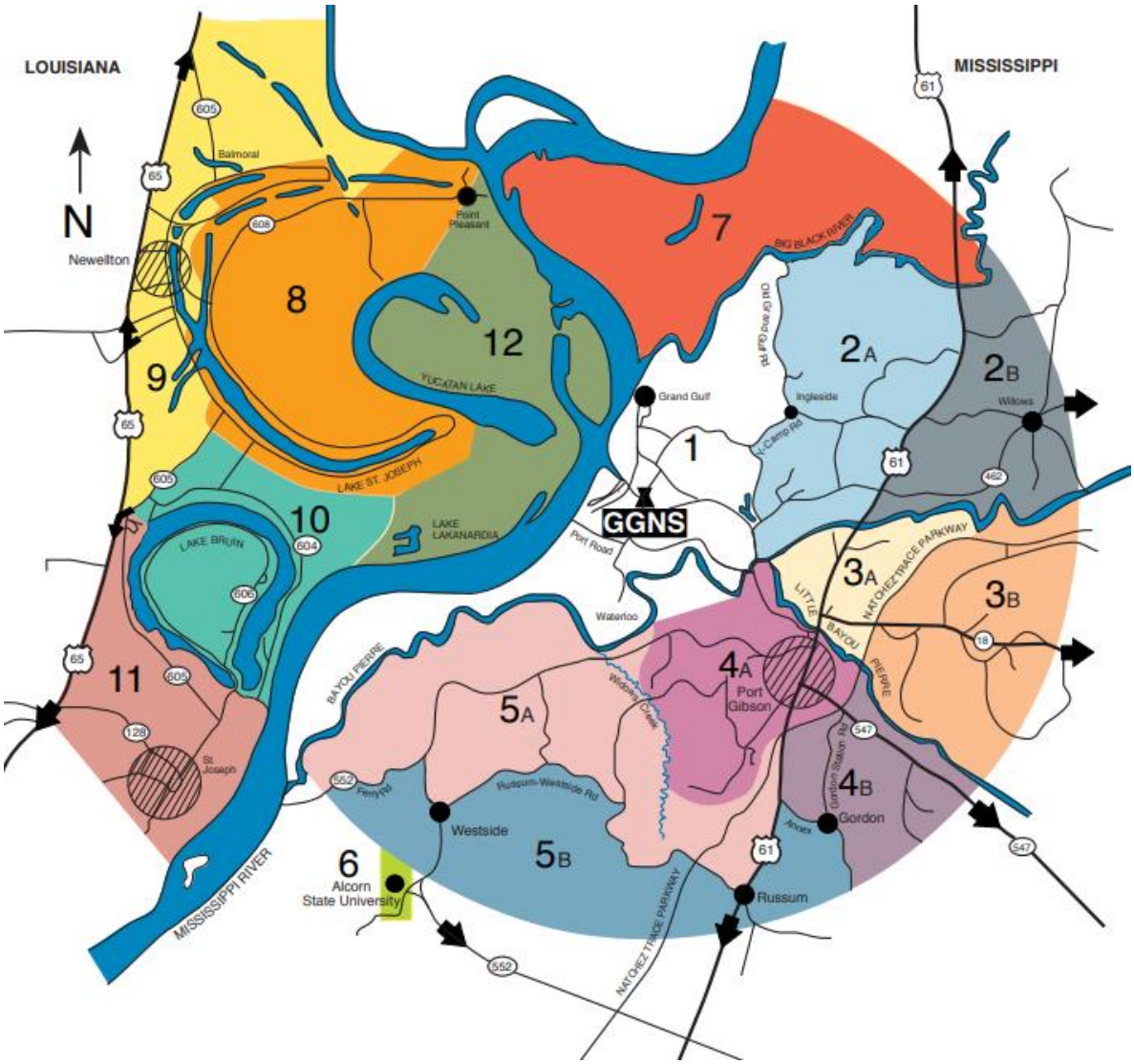
A Nuclear power plant uses steam to generate electricity. Steam, created by heating water though energy produced by a nuclear reaction, drive turbine blades to spin. This rotational energy is then converted to electrical energy by a generator.

A nuclear power plant uses uranium as its fuel. Uranium atoms can be more readily split apart than other types of atoms. This process is called nuclear fission. When the atoms split, energy is released in the form of heat and radiation with fission products left behind. This is the heat source used to create steam in a nuclear power plant. The plant is designed to keep any radiation safely inside.

Once the steam has been used to spin the turbine, it is sent to a condenser. A condenser is a large vessel with thousands of small tubes. Cool water is channeled through these tubes while the exhausted steam from the turbine passes over the outside of the tubes. This process allows the heat of the exhausted steam to be transferred to the cooler water inside that tubes. This allows the steam to condense back into water, which is then recirculated through the system, starting the process over again. The water inside the tubes – now heated up after passing through the condenser tubes – is circulated through a separate cooling system, allowing it to safely release the heat it has absorbed, be cooled back down, and then circulated back through the condenser tubes.

Since the steam passing through the turbine and the water from the cooling tower system are in two separate systems, physically isolated from each other, the cooling tower water contains no radioactive contaminants. This water never intermingles with the water passing through the reactor.

Protective Action Areas



Note Your Protective Action Information Here

Please take a moment to fill out the information below so you will have quick access to it should an emergency arise. Check the table on the following pages to locate the Protective Action Section, Evacuation Route and Reception Center to which you are assigned.

My Protective Action Section Is:

_____

My Evacuation Route Is:

_____

My Reception Location Is:

_____

My Children Can Be Picked Up At:

_____

PROTECTIVE ACTION AREAS - Claiborne County, Mississippi

AREA	LOCATION	PRIMARY EVACUATION ROUTES	RECEPTION CENTER
1	Between Big Black River and Bayou Pierre west of Old Grand Gulf Road	U.S. Highway 61 North to Vicksburg (Warren County)	Sherman Avenue Elementary School 2145 Sherman Ave. Vicksburg, MS 39183
2A	Between Big Black River and Bayou Pierre West of Hwy. 61 to Old Grand Gulf Road	U.S. Highway 61 North or Mississippi Route 462 East to Vicksburg (Warren County)	Sherman Avenue Elementary School 2145 Sherman Ave. Vicksburg, MS 39183
2B	Between Big Black River and Bayou Pierre, east of Hwy. 61	U.S. Highway 61 North or Mississippi Route 462 East to Vicksburg (Warren County)	Sherman Avenue Elementary School 2145 Sherman Ave. Vicksburg, MS 39183
3A	Between Bayou Pierre and Little Bayou Pierre, west of Natchez Trace Parkway	Mississippi Highway 18 East to Utica (Hinds County)	Hinds Community College Utica Campus, 34175 MS-18 Utica, MS 39175
3B	Between Bayou Pierre and Little Bayou Pierre, east of Natchez Trace Parkway	Mississippi Highway 18 East to Utica (Hinds County)	Hinds Community College Utica Campus, 34175 MS-18 Utica, MS 39175
4A	Between Little Bayou Pierre and Widows Creek south and east of Bayou Pierre to Natchez Trace Parkway, including Port Gibson	Mississippi Route 547 South to Mississippi Highway 28 East to Hazlehurst (Copiah County) Take I 55 North to the Gallman Exit. Bear right onto West Gallman Rd. Turn immediately to the left onto Epps Ln. Continue to the Safe Room	Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120
4B	Between Little Bayou Pierre, south and east of Natchez Trace Parkway and north of Gordon Station Road	Mississippi Route 547 South to Mississippi Highway 28 East to Hazlehurst (Copiah County) Take I 55 North to the Gallman Exit. Bear right onto West Gallman Rd. Turn immediately to the left onto Epps Ln. Continue to the Safe Room	Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120
5A	Between Bayou Pierre and Russum-Westside Road east to Widows Creek	Mississippi Route 552 East to U.S. Highway 61 South to Natchez (Adams County)	Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120
5B	South of Russum-Westside Road from Ferry Road east to Gordon Station Road	Mississippi Route 552 East to U.S. Highway 61 South to Natchez (Adams County)	Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120
6	Alcorn State University	Mississippi Route 552 East to U.S. Highway 61 South to Natchez (Adams County)	Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120
7	North of Big Black River and East of Mississippi River	U.S. Highway 61 North to Vicksburg (Warren County)	Sherman Avenue Elementary School, 2145 Sherman Ave, Vicksburg, MS 39183
CLAIBORNE COUNTY SCHOOLS: Students in Claiborne County, Mississippi, will be evacuated to the following reception center:			Louis Gunning Safe Room, 323 Liberty Road, Natchez, MS 39120

PROTECTIVE ACTION AREAS - Tensas Parish, Louisiana

AREA	LOCATION	PRIMARY EVACUATION ROUTES	RECEPTION CENTER
8	East Bank of Lake St. Joseph and East of Newelton, Including Point Pleasant	Louisiana Route 608 North, to Louisiana 605 North at Balmoral to U.S. Highway 65 North at Somerset to Tallulah, LA	Richmond Civic Center 598 Wood St. Richmond, LA 71282
	West Bank of Lake St. Joseph	Louisiana Route 608 West, to Louisiana Route 605 North to Balmoral, continue on Louisiana Route 605 North to U.S. Highway 65 North at Somerset to Tallulah, LA	
9	East of U.S. Highway 65	Louisiana Route 608 North, to Louisiana 605 North at Balmoral to U.S. Highway 65 North at Somerset to Tallulah, LA	Richmond Civic Center 598 Wood St. Richmond, LA 71282
	West of Louisiana Route 605, including Newelton	West to U.S. Highway 65 North, to Tallulah, LA	
	East of Louisiana Route 605, including Newelton	Louisiana Route 887 West, to Louisiana Route 605 North to Balmoral. Continue on Louisiana Rote 605 North to U.S. Highway 65 North at Somerset, to Tallulah, LA	
10	Outside of Lake Bruin	Louisiana Route 604 North, to Louisiana Route 605 West, to U.S. Highway 65 South to Ferriday	Ferriday High School 801 EE Wallace Blvd. Ferriday, LA 71334
	Inside of Lake Bruin	Louisiana Rote 606 South to Louisiana Route 604 South, to Louisiana Route 128 West to U.S. Highway 65 South to Ferriday, LA	
11	Outisde of Lake Bruin	Louisiana Route 605 North, to Louisiana Route 605 West, to U.S. Highway 65 South to Ferriday, LA	Ferriday High School 801 EE Wallace Blvd. Ferriday, LA 71334
	St. Joseph Area	Louisiana Route 128 West, to U.S. Highway 65 South, to Ferriday, LA	
12	North of and inside Yucatan Lake	Levee Road to Louisiana Route 608, to Louisiana Route 605 North, to U.S. Highway 65 North, to Tallulah, LA	Richmond Civic Center 598 Wood St. Richmond, LA 71282
	South of Yucatan Lake, including Lake Lakanardia	Levee Road to Louisiana Route 604 North, to Louisiana Route 605 West, to U.S. Highway 65 South, to Ferriday, LA	Ferriday High School 801 EE Wallace Blvd. Ferriday, LA 71334
TENSAS PARISH SCHOOLS: Students in Tensas Parish, Louisiana, will be evacuated to the following reception center: Tensas Academy, Tensas Elementary, and Tensas High Schools			Ferriday High School 801 EE Wallace Blvd. Ferriday, LA 71334