

### Project Scope:

Great Northern Engineering worked on design and construction engineering for a new Low-Rank Coal Water Fuel (LRCWF) demonstration facility in Ackerman, Mississippi. The scope included mechanical process engineering, mechanical HVAC engineering, and diesel motor generator engineering.

### Project Detail:

- Provide all of the piping system that is required for LRCWF process. This includes valves, pipe, fittings, and supports.
- Provide all of the electrical design for the LRCWF equipment. This includes coal off-loading equipment, ball mills, the mixing equipment, and the pumping requirements.
- Provide the heating and cooling loads generated by the LRCWF process.
- Provide design for the boiler installation and utility piping.
- Structural design of anchor bolts for building attachment.
- Sump system plan.
- Provide motor generator system engineering: fuel, combustion air, cooling system, foundation, exhaust, and electrical and controls.
- Provide chemical engineering required for basis of design of coal processing into Coal Water Fuel. This included:
  - Handling of incoming coal.
  - Processing of raw coal.
  - Washing of the coal.
  - Hydrothermal treatment of the coal.
  - Mixing of coal and water into fuel.
  - Transfer of product into storage tankage.
  - Transfer of the product into tankers or tank cars.

