



UREA INFRASTRUCTURE PROJECT

POWER UTILITY – NORTH CAROLINA

As part of a design build effort, PENTA provided complete engineering and design for a series of Urea Infrastructure projects. The scope of this project consisted of adding a utility-grade Urea Liquor unloading, dilution, storage and transfer system that can be used with the Selective Non-Catalytic Reduction (SNCR) systems at four (4) of the Power Company's sites. Urea Liquor is delivered to each site by rail car or tanker truck. These new facilities provide for the unloading, dilution and storage of urea liquor, and for the transfer of the liquor for injection into the SNCR system.

The equipment requirement at each site varied, based upon the existing equipment and site conditions at each location. PENTA worked closely with our construction partner to identify these differences and deliver site-specific systems.



PENTA's design and engineering role included:

- Process design/ P&ID development
- General arrangement drawings
- Piping plan and details drawings
- Piping isometric drawings
- Pipe supports
- Civil site plan drawings
- Structural foundation plan and detail drawings
- Power and lighting plans
- Power and lighting panel drawings
- Motor elementary drawings
- Grounding drawings
- Heat tracing drawings

Major pieces of equipment included:

- Urea Delivery Skids including pumps, piping, valves and instrumentation
- Dilution Water Skids including pumps, piping, valves and instrumentation
- Truck Unloading Stations
- Large capacity, insulated, FRP Holding Tanks with heating pads

