



JEA

Jacksonville Electric Authority – Northside Generating Station

Introduction

JEA's Northside Generating Station is the site of the world's largest clean coal technology circulating fluidized bed generating plants. It is also home to the only true solution to provide an adequate turnkey training program to equip the Operations Department with the technical expertise, confidence and operating experience to fire and maintain the next generation of clean coal fueled power plants proficiently and safely.

Foster Wheeler Clean Coal CFB Simulator

MEL designed, built and commissioned the CFB simulator based on the five-year operating history of JEA Northside Unit Two and on Foster Wheeler circulating fluidized bed technology, resulting in one of the most viable options for journeyman-level control room operation training available today.

JEA Operator Training Program

JEA and MEL have developed a comprehensive training program based on the CFB Simulator that demonstrates and instructs in the following essential systems and concepts:

- Complete in-depth boiler start-up, including fan and blower sequencing and draft inception
- Furnace bed mitigation, fluidization and clarifying
- Natural gas burner light-offs, ramping, malfunctions and shutdowns
- Limestone injection
- Solid fuel distribution and coal/petroleum coke firing ratios
- Complete combustion theory and dynamics
- Air distribution, including process casualties and equipment failures
- SNCR (Selective Non-Catalytic Reduction) design and operation
- SDA (Spray Dryer Adsorption) design and operation, including discussion concerning the application of varying densities and flue gas air temperatures
- Casualty response and damage control situations, including loss of parasitic load power supplies, loss of fluidization, loss of condenser vacuum, abnormal bed level and equipment failures
- Complete turbine-generator set operation, control, design and safety including, heat soaks, rotor warming, roll-offs, casualty situations and shutdowns
- Balance of plant cycles, including the condensate system, feed water system, turbine extraction systems, auxiliary steam systems and water chemistry control systems
- Emissions monitoring equipment and parameters and response to out-of-parameter emissions measurements for SO₂ & SO₃, NO_x, opacity, CO, CO₂, and excess O₂

Northside Generating Station Unit 2 CFB Simulator

