

## **PROCEDURES FOR STARTUP AND SHUTDOWN**

### **O&M PROCEDURES**

Procedures for startup and shutdown will be completed in accordance with the manufactures' operating procedures and/or based on plant experience. Excess emissions resulting from startup and shutdown are permitted in condition 26 of PSD-FL-265 and in specific permit conditions of Operation Permit 0310045-008-AV with Rule 62-210.700(1) referenced.

The following is further information on startup and shutdown of specific emissions units.

NGS – CFB Nos. 1 and 2

#### **Startup and Shutdown Procedures**

The CFBs are started and shut down in the most efficient manner possible taking into account manufacturer recommendations, personnel and equipment safety and limitations, operating experience, and other factors such as fuel type and process variables.

NGS – Boiler No. 3

#### **Startup and Shutdown Plans – O&M Procedures**

The JEA will maintain and operate Boiler No. 3 efficiently to maximum performance to minimize environmental emissions. JEA will take necessary actions to ensure the unit does not exceed permitted limits, and will remove a unit from service if required.

NGS Boiler No. 3 is started-up on natural gas. L.P. gas is used as ignitor fuel source. After Start-up the unit is fueled by natural gas and/or #6 fuel oil, depending upon availability.

All JEA units are operated under the boiler, turbine/generator, and operational guidelines as furnished by the manufacturers and JEA internal guidelines and procedures.

Boiler equipment is maintained under a preventative maintenance routine schedule as set forth in JEA's internal P.M. program. Some examples of boiler equipment PM's are: weekly burner cleaning, daily sootblowing, scheduled boiler washings, and continuous boiler emission monitoring. Other maintenance is performed on an as needed basis.

When excessive emissions conditions occurs, the control room operator takes immediate corrective action.

When a unit shut down is required or unit trip occurs, the unit is brought down under established manufacturer and JEA operational procedures.

## NGS – Combustion Turbines No. 5, No. 6, No. 7 and No. 8

### O&M Plans – Startup and Shutdown Plans

The JEA will maintain and operate Combustion Turbines (CTs) No. 5, No. 6, No. 7 and No. 8 efficiently to maximum performance to minimize environmental emissions. JEA will take necessary actions to ensure the units do not exceed permitted limits, and will remove a unit from service if required.

The NGS CTs are started and operated on No. 2 fuel oil.

All JEA units are operated under the boiler, turbine/generator, and operational guidelines as furnished by the manufacturers and JEA internal guidelines and procedures. Combustion turbine equipment is maintained under a preventative maintenance routine schedule as set forth in JEA's internal P.M. program.

When excessive emissions conditions occurs, the control room operator takes immediate corrective action.

When a unit shut down is required or unit trip occurs, the unit is brought down under established manufacturer and JEA operational procedures.

## SJRPP – Boiler No. 1 and Boiler No. 2

### Startup and Shutdown Plans

#### Unit Start-Up

The SJRPP units utilize Electrostatic Precipitators for opacity control, Wet Limestone Scrubbers for sulfur dioxide control and staged combustion technologies for control of nitrogen oxides.

During start-up, the SJRPP units initially utilize No. 2 Fuel Oil ignitors. Once steam quality and turbine conditions are sufficient, coal is introduced to the furnace and oil ignitors remain in service for flame stabilization at low burner capacities. Opacity is reduced to less than 20% through partial energization of precipitator fields after coal is introduced to the furnace and the precipitator reaches 200 F. After opacity is less than 20%, scrubber module(s) are placed in service to facilitate sulfur dioxide removal. After the precipitator has thermally soaked for two hours in excess of 200 F, additional precipitator fields are energized to further reduce opacity and particulate burden to the scrubber.

Excessive NO<sub>x</sub> formation does not typically occur at low heat input levels associated with unit start-up.

#### Unit Shut Down

Upon a unit shut-down or unit trip, automatic controls will abruptly isolate all fuel sources from the furnace, de-energize the precipitator and open the scrubber bypass. No further intentional combustion can occur until the furnace is sufficiently purged with air. The purging requirement is a requisite for the start-up procedure to begin anew.