PERFORMANCE TEST EXPERIENCE

Major projects completed in the last five (5) years

Location: Cooper Generating Station near Somerset, KY

Description: *East Kentucky Power Coop., SCR system and CFB scrubber/fabric filter system Performance Testing*

The CFB system testing for Unit 2 consisted of three, 60-120 minute test runs of USEPA Methods 1-4, 5B, 6C, 30B, NCASI 8A, ASTM D6784-02 Ontario-Hyrdo Method and SCAQMD Method 5.2. The CFB/FF inlet and outlet sampling was performed simultaneously for each item that was measured. In addition to the testing described above, ***GCI*** performed USEPA Methods 1-4, 26A and 30B at the SCR Inlet, in conjunction with mercury testing at the CFB Inlet and Outlet during day one of the test program. On day two of the test program, ***GCI*** performed USEPA Method 6C and 8A at the SCR Inlet in conjunction with the CFB Inlet and Outlet testing.

Constituents measured at the CFB inlet location included flow, moisture, SO2, SO3 and Mercury using Methods 1-4, 6C, 8A, 30B and Ontario-Hyrdo, respectively. Constituents measured at the CFB/Fabric Filter outlet included flow, moisture, SO2, Sulfuric Acid Mist (H2SO4), Mercury, Filterable Particulate and Total Particulate using Methods 1-4, 6C, 8A, 30B, 5B and 5.2, respectively.

GCI provided mobile laboratories and technicians to perform onsite analysis of the particulate (excluding condensable), Sulfuric Acid Mist (by titration) and 30B sorbent traps (using Ohio Lumex 915+ analyzer). Per the clients request, ***GCI*** coordinated and successfully completed a five day turnaround for all reports and analysis.

Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors.

Total Peak Manpower: 13

Reference name and phone number: Mr. Louis Petrey, (859) 745-4157 ext 204

Location: Coronado Generation Station (CGS) near St. Johns, Arizona.

Description: *Salt River Project (SRP) Coronado Emissions Control Project Performance Testing*

Six, four hour test periods were performed at one inlet and the stack location over the course of four days. Tests were performed for SO2 removal efficiency, SO3 Removal Efficiency, Mercury Removal Efficiency and Particulate Emissions testing at the FGD Inlet and Stack Locations. Preliminary Traverses for flow and moisture will performed at

the beginning of the test day to verify Design Gas Flow. USEPA Methods 1, 2, 3A, 4, 5B, 17, 6C, and CCM 8A will be used without modification. Test runs were two hours in duration. Noise readings were taken during the course of the testing with one Noise Survey performed per ANSI/ASME PTC-36-1985. Measurements for temperature, volumetric flow, pressure (including static, velocity and total pressure), and measured power consumption were completed at the inlet and outlet of the ID fans. ***GCI*** personnel collected samples of the coal and limestone for each SO2 removal efficiency test run. Results for Coal Composition, Limestone Quality, available Calcium Carbonate, Gypsum Oxidation & Quality, Limestone Consumption, and Ball Mill Fineness were included in the test report. ***GCI*** performed Mist Eliminator Carryover testing using the KLD AIMs Method.

Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 18

Reference name and phone number: Mr. Eustacio Alderette 928-337-5607

Location: Northern Indiana Public Service Company

Rollin M. Schahfer Generating Station Units 17 & 18

Description: *FGD performance Testing*

GCI completed three, two hour test runs of USEPA Methods 1, 2, 3A, 4, 5B, and 6C at the inlet and outlet locations of each unit. Testing was conducted over the course of two days per unit. ***GCI*** personnel were provided to collect coal and limestone samples for each SO removal efficiency test run. ***GCI*** also performed pressure drop testing on each module and total continuous data logging for each day of testing. Preliminary sample analysis of particulate emissions was completed onsite in the mobile laboratory.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 11

Reference name and phone number: Mr. Craig Myers 219-7477-6580

Location: Babcock & Wilcox at Detroit Edison Units 3 & 4 in Monroe, Michigan.

Description: *Scrubber Performance Test*

GCI completed three, four hour test runs of USEPA Methods 1, 2, 3A, 4, 5B, 6C, 19, 30B and CCM 8A at the Inlet and Stack locations on each unit. Testing took two days per unit and was completed in one mobilization at B&W's request.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 11

Reference name and phone number: Ms. Jammie Thiemar 330-860-2987

Location: Alstom Power at East Kentucky Power Spurlock Station Unit 2 in Maysville, Kentucky.

Description: *Scrubber Performance Test*

Three, two hour test runs per day of USEPA Methods 1, 2, 3A, 4, 6C were performed at the FGD Inlet and Stack. Three, two hour test runs of USEPA Method 9 were performed on the stack per day. Six 30 minute test runs of USEPA Method 8A will be performed at the Stack test location each day. Testing on each location took place simultaneously. The test program resulted in six, two hour test runs of the necessary methods during two forty eight hour tests. Additional weeks of testing included investigative test runs of the above methods per Alstom Power's request.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 14 crewmembers

Reference name and phone number: Dennis Laslo 265-560-1392

Location: Duke Energy – Belews Creek Station Unit 1 and 2 located in Belews Lake, North Carolina

Description: *Scrubber Performance Test*

The performance testing program for each FGD System consisted of two days of testing with 2 four hour test runs performed each day. Tests were performed for SO2 removal

efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and moisture were performed at the beginning of each test day to verify Design Gas Flow. SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer had a SO2, CO2, and O2 monitor along with PC based Data Acquisition System. The trailers were used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: GCI completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 16 crewmembers

Reference name and phone number: Ron Laws 704-382-8411

Location: Duke Energy – Allen Station Units 1 & 3 and Inlets 1-5

Description: *Scrubber Performance Test in Gaston County, North Carolina*

The performance testing program for each FGD System consisted of two days of testing with 2 four hour test runs performed each day. Tests were performed for SO2 removal efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and moisture were performed at the beginning of each test day to verify Design Gas Flow. SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer had a SO2, CO2, and O2 monitor along with PC based Data Acquisition System. The trailers were used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 15 crewmembers

Reference name and phone number: Ron Laws 704-382-8411

Location: Duke Energy – Marshall Station Units 1/2, 3 and 4

Description: *Scrubber Performance Test Catawba County, North Carolina*

The performance testing program for each FGD System consisted of two days of testing with 2 four hour test runs performed each day. Tests were performed for SO2 removal efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and moisture were performed at the beginning of each test day to verify Design Gas Flow. SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer had a SO2, CO2, and O2 monitor along with PC based Data Acquisition System. The trailers were used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 11 crewmembers

Reference name and phone number: Ron Laws 704-382-8411

Location: Duke Energy – Gibson Units 1, 2, and 3

Description: *Scrubber Performance Test Gibson, Indiana*

The performance testing program for each FGD System consisted of two days of testing with 2 four hour test runs performed each day. Tests were performed for SO2 removal efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and

moisture were performed at the beginning of each test day to verify Design Gas Flow. SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer had a SO2, CO2, and O2 monitor along with PC based Data Acquisition System. The trailers were used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 13 crewmembers

Reference name and phone number: Jon Hays 317-838-2490

Location: Duke Energy – Miami Fort Station Units 7 and 8

Description: *Scrubber Performance Test North Bend, Ohio*

The performance testing program for each FGD System will consisted of two days of testing with 2 four hour test runs performed each day. Tests were performed for SO2 removal efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and moisture were performed at the beginning of each test day to verify Design Gas Flow.

SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer had a SO2, CO2, and O2 monitor along with PC based Data Acquisition System. The trailers were used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 10 crewmembers

Reference name and phone number: Jon Hays 317-838-2490

Location: Duke Energy – Cayuga Station Units 1 and 2 in Cayuga, Indiana

Description: *Scrubber Performance Test*

The performance testing program for the FGD System consisted of two days of testing for each unit with 2 four hour test runs performed each day. Tests were performed for SO2 removal efficiency, Particulate Emissions testing, Gypsum Composition, Electrical Power Consumption, and Limestone Consumption. Preliminary Traverses for flow and moisture were performed at the beginning of each test day to verify Design Gas Flow. SO2 testing was performed using USEPA Method 6C and 3A. ***GCI*** utilized two test trailers one for each test location. Each test trailer was equipped with a SO2, CO2, and

O2 monitor along with PC based Data Acquisition System. The trailers were also used for sample recovery for the particulate testing. USEPA Methods 1, 2, 3A, 4, 5B, and 6C were used without modification unless requested by Duke Energy. ***GCI*** personnel collected samples of the Gypsum cake, the Wastewater, Limestone, Limestone Slurry, Makeup Water, Absorber Reaction Tank Slurry, and the Limestone Slurry from the discharge of the Reagent Feed Pumps for each SO2 removal efficiency test run.

Direct and Subcontracted Work: ***GCI*** completed the field work without the use of subcontractors. SGS Laboratories was used for analysis of gypsum and limestone samples.

Total Peak Manpower: 9 crewmembers

Reference name and phone number: Jon Hays 317-838-2490