



March 14, 2002

Mr. Frank E. Hsu
President
AirPol, Inc.
339 Jefferson Road
Parsippany, NJ 07054

Re: Semi-dry Scrubber System for Two (2) 210 tpd Municipal Solid Waste Incinerators

Dear Mr. Hsu:

I am writing this letter to express our appreciation to you and your colleagues for a job well done. The AirPol system has exceeded our expectations as well as the specified performance and operational requirements of this turnkey project.

As in any project of this size and complexity, we had our share of challenges. I thank you for the timely, honest and straightforward manner in which you and your team rectified problems as they occurred and addressed our concerns.

The success of this project was due in no small part to the skilled and professional members of your team, Bob Gibbons, Billy Kelleher and Tien Tsui. Your personal involvement in both the pre- and post-contract stages of the project was also valuable.

I wish you the best of success in your future endeavors. If you wish to refer potential clients to me, I can offer a favorable recommendation without reservation.

Sincerely,

Wasatch Energy Systems

A handwritten signature in black ink, appearing to read "Nathan Rich".

Nathan Rich, P.E.
Executive Director

Air Pollution Control System Retrofit Experience At Wasatch Energy Systems

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Abstract

Wasatch Energy Systems owns and operates two (2) mass burn incinerators each rated at 210 tons/day in Layton, Utah. Each incinerator was equipped with a three field Electrostatic Precipitator (ESP) to control the particulate emissions. Dry sorbent (trona) was injected just upstream of the economizer to control acid gas emissions. The performance of the dry sorbent injection system was marginal.

In anticipation of the upcoming EPA emission guidelines, 40 CFR Part 60, Subpart BBBB, Emission Guidelines for existing small municipal waste combustion units, Wasatch Energy Systems decided to update the existing APC systems several years ahead of the schedule. A request for proposal was released in October 1999 and eight proposals were received by the facility. AirPol Inc. of Parsippany, NJ was awarded a turnkey contract in June 2000 to add a dedicated Gas Suspension Absorber (FLS miljo Inc GSA) upstream of each existing ESP. A common lime slurry storage and preparation system, carbon storage and delivery system, ash conveying system, MCC, and control system were also provided under the contract.

The new APC system was commissioned and put into service in September, 2001. Initial stack testing was conducted in October 2001 to evaluate system performance. Compliance stack testing was conducted for the Utah Division of Air Quality in November 2001. Results of testing demonstrate that particulate, metals, acid gas and dioxin/furan emissions from the retrofit facility are substantially lower than required under, now final, 40 CFR Part 60, Subpart BBBB – Class 1 Emission Limits for Existing Small Municipal Waste Combustion Units. This paper discusses the retrofit system design and performance.

Introduction

Wasatch Energy Systems (WES) owns and operates the Davis County Energy Recovery Facility (DCERF), a mass burn municipal solid waste incinerator, and the Davis County Landfill, both located in Davis County, Utah. WES is a Special Service District providing integrated solid waste disposal services to more than 200,000 residents in 15 cities and two counties. WES was formed in 1984 and the DCERF was commissioned in 1988.

In October 1999 WES solicited proposals from qualified contractors for new air pollution control equipment as required to meet, the then proposed, federal regulations 40 CFR Part 60, subpart BBBB – Class 1 Emission Limits for Existing Small Municipal Waste Combustion Units. In June 2000 WES awarded AirPol Inc. of Parsippany, NJ a turnkey contract for supply, installation and startup of a dedicated Gas Suspension Absorber (FLS miljo Inc GSA) upstream of each existing ESP. Under the contract AirPol also supplied a common lime slurry storage and preparation system, carbon storage and delivery system, ash conveying system, MCC, and control system .

The new APC system was commissioned and put into service in September, 2001. Initial stack testing was conducted in October 2001 to evaluate system performance. Compliance stack testing was conducted for the Utah Division of Air Quality in November 2001. Results of testing demonstrate that particulate, metals, acid gas and dioxin/furan emissions from the retrofit facility are substantially lower than required under, now final, Subpart BBBB. This paper discusses the retrofit system design and performance.

Facility Description

The DCERF consists of two (2) mass burn refractory lined furnaces supplied by Katy Seghers Engineering, each rated at 210 tons per day. Each furnace is equipped with a waste heat boiler supplied by Zurn Industries. The facility was originally commissioned in 1988. The units each produce approximately 52,000 pph of steam at 550 psi and 515° F. High-pressure & turbine-generator steam is used to turn a 1.6 MW backpressure turbine and low pressure steam is purchased by neighboring Hill Air Force Base.

Original Air Pollution control system

Each incinerator was originally equipped with an Environmental Element Corporation (EEC) three field Electrostatic Precipitator (ESP) for control of particulate emissions. Acid gases were controlled by dry sorbent injection (trona) at the economizer inlet. Performance of the dry sorbent injection system was marginal due to short retention times and poorly controlled temperatures. The dry sorbent injection also aggravated fouling of the economizer section and increased particulate loading to the ESP.

Table 1 summarizes average emissions from the facility before the APC retrofit based on stack test data collected between 1995 and March 2001.

Table 1: Original APC System Performance Data
(per 12/99 to 3/01 stack test data)

Pollutant¹	Average Pre-Retrofit Performance	Subpart BBBB Class 1 Emission Limits
particulate matter (mg/dscm)	18.3	27
total dioxin/furan (ng/dscm)	330	60
Cadmium (mg/dscm)	0.03	0.04
Lead (mg/dscm)	0.41	0.49
Mercury (mg/dscm)	0.10	0.08
Hydrogen Chloride (ppmdv)	247	31
Hydrogen Fluoride (mg/dscm)	2.6	-
Sulfur Dioxide (ppmdv)	49	31
Opacity (%)	3	< 10
Boiler Steam Flow (kpph)	52.5	
ESP Inlet Temperature (degrees F)	390 – 450	

1. All emissions corrected to 7% oxygen.

As Table 1 indicates, emissions from the existing facility were likely to exceed Subpart BBBB emission limitation for; total dioxins/furans, metals, HCl, and SO₂. As such, retrofit of the APC system was required.

Retrofit Air Pollution Control system

WES selected the semi-dry scrubber system proposed by AirPol Inc. and AirPol was awarded a contract for a turnkey installation at the DCERF. The existing dry sorbent injection system was removed from operation and one GSA was added upstream of each existing ESP. The semi-dry system uses pebbled lime for acid gas removal and Powdered Activated Carbon (PAC) injection as an adsorbent for mercury and dioxin/furan control. In addition, the existing ESP structure had to be reinforced and larger Induced Draft (ID) fans installed to meet the increased pressure drop across the GSA. A common lime slurry storage and preparation system, carbon storage and delivery system, ash conveying system, MCC, and control system were also included in the contract.

The GSA system is a patented process developed by FLS miljø a/s (Denmark), which was the parent company of AirPol from 1989 to 1998. During those nine years, AirPol specifically engaged in commercializing the GSA technology in the US and successfully installed nine (9) GSAs in the US, Taiwan, and India. Subsequent to the change of ownership in July 1998, AirPol entered into an agreement with FLS miljø Inc. to sell, engineer, and execute selected GSA projects in the United States (US), Canada and Mexico.

To suit the general arrangement of the facility, each GSA was located upstream of the existing precipitators as shown in Figure 1. To maintain access to the existing precipitator, a length of

ductwork was provided which directs the flue gas from the economizer outlet to the GSA reactor and back to the ESP inlet.

The design is based on the following inlet flue gas conditions:

Flue Gas Flow	acfm	63,167 – 72,000
	dcfm	29,896 - 34,076
Flue Gas Temperature	°F	370 – 450
Water	%	10 – 12.5
O ₂	Vol%, dry	8 – 12
SO ₂ Concentration	ppmd	175
HCl Concentration	ppmd	1,000
Particulate	mg/dscm @ 7% O ₂	2,400
Mercury	mg/dscm @7% O ₂	0.60
Lead	mg/dscm @7% O ₂	35
Cadmium	mg/dscm @7% O ₂	2.3
Dioxin/Furan	ng/dscm @ 7% O ₂	860

At the time the contract executed, Subpart BBBB had been proposed and was in the public comment and review process. Guaranteed emission limits were set at 70% of the limits found in the proposed Subpart BBBB. The subsequent emission limitations contained in the final Subpart BBBB are lower than some of the following guaranteed levels:

<u>Pollutant</u>	<u>Performance Guarantee</u>
Particulate	Not to exceed 24 mg/dscm
Opacity	7% (Maximum 6 min. average)
SO ₂	Not to exceed 38 ppmdv @ 7% O ₂
HCL	Not to exceed 140 ppmdv @ 7% O ₂
Mercury	Not to exceed 0.06 mg/dscm
Lead	Not to exceed 1.1 mg/dscm
Cadmium	Not to exceed 0.07 mg/dscm
Dioxin/Furan	Not to exceed 86 ng/dscm

Warrants

AirPol warrants that the GSA system shall meet the above performance guarantees for three (3) years following the initial startup of the GSA system.

Detailed Description of the Retrofit APC System

The Retrofit APC system included the following equipment and modifications:

- Installation of Gas Suspension Absorber (GSA)
- Stiffening casings of Existing Electrostatic Precipitator and inlet/outlet ducts
- New larger Induced Draft Fan with variable frequency drive
- Pebble Lime Storage, Preparation, and Delivery System
- By-Product Transport System (Drag Conveyors)
- Activated Carbon Storage and Delivery System
- Structural Supports and Platforms
- Water Pumps
- Lime Slurry Pumps
- Instrumentation and Controls
- Expansion Joints and Ductwork
- Air Compressors

The process flow diagram for the retrofit APC system is shown in Figure 1.

GSA Reactor

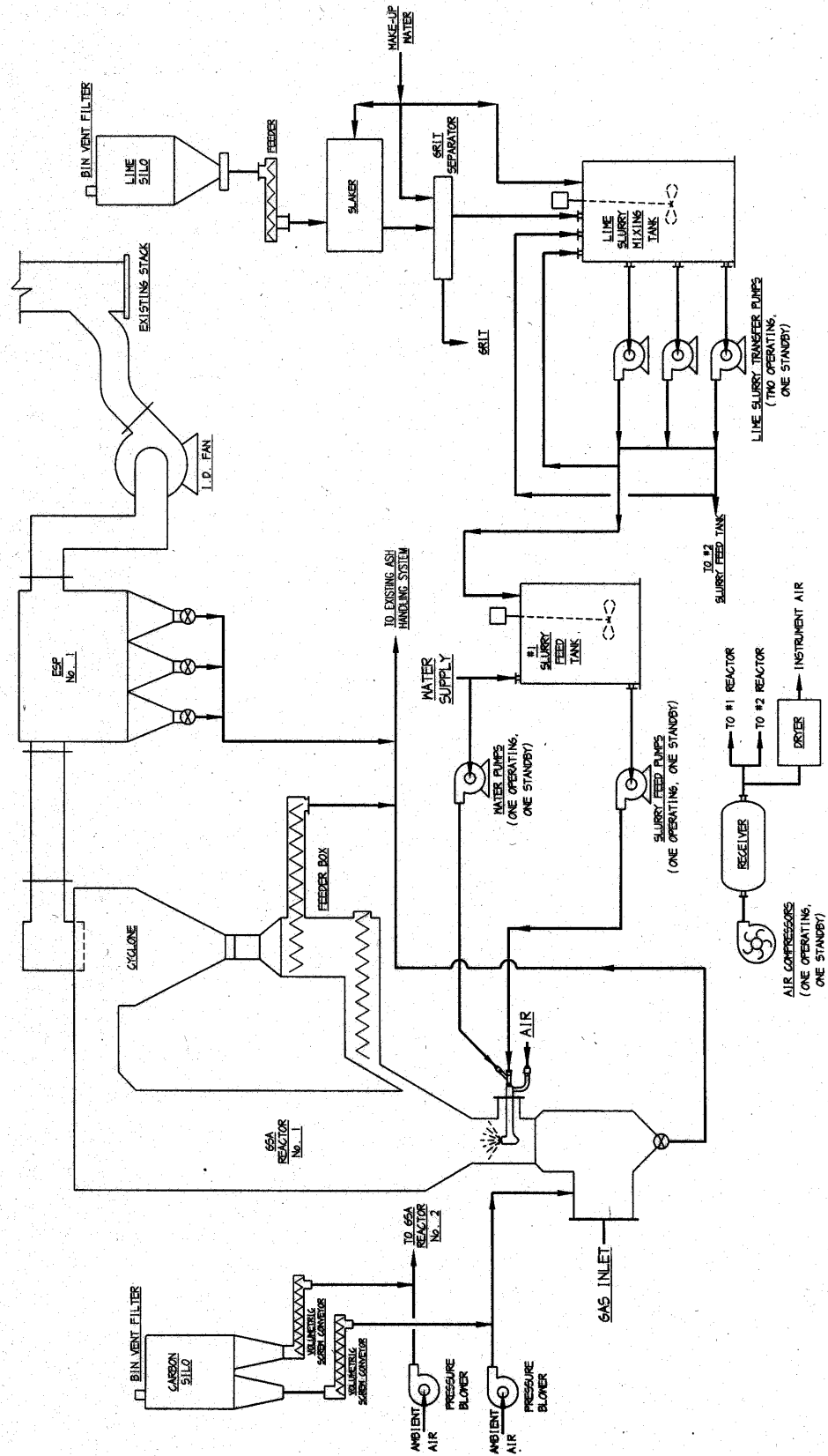
One GSA reactor has been provided for each incineration train. The reactor is a vertical cylindrical vessel consisting of an inlet elbow, venturi section with injection lance assembly, reaction chamber with material return chute, supporting ring and radial outlet. The inlet elbow is provided with rotary air lock for automatic removal of any fall out material and an inspection door.

The flue gas enters the bottom of the reactor and flows upward through a restriction (venturi) in the vessel. An injection lance with a single nozzle is located in the center of the venturi spraying co-currently with the gas flow. The injection lance assembly is connected to lime slurry, cooling water and compressed air feed lines. The slurry and water mixture is atomized by the compressed air in the dual-fluid nozzle.

Recycled solids from the feeder box are introduced into the reactor just above the venturi where the solids become coated with the lime slurry. When the flue gas comes in contact with the lime coated solids the lime chemically reacts with SO_2 , HCl, and other acid gases in the flue gas to capture and neutralize them. The water in the slurry will start to evaporate and simultaneously cool the gas. The reactor provides the necessary reaction and drying retention time before the solids enter the GSA cyclone. The suspended solids travel upward in the GSA reaction under great turbulence and keep the walls free from dust or slurry buildup.

The flue gas then flows through the cyclone where the solids are separated from the gas stream. Approximately 99% of the solids are fed back to the reactor via the feeder box. The remaining solids continue with the gas and are removed in the ESP. The recycled solids still contain reactive lime and are able to neutralize the acid in the flue gas, thus minimizing the need for fresh lime. The by-product is a dry powder with very low moisture content (less than 1%) consisting of calcium sulfite/sulfate, calcium chloride and fly ash.

Figure 1: Flow Process Diagram



The flue gases are drawn from the cyclone through the particulate collector, ESP, by the induced draft fan, which handles the pressure drop of the system. The fan discharges the cleaned flue gases to the stack for exhaust to atmosphere.

The GSA Control System automatically maintains the required level of acid gas emissions while keeping the lime consumption at a minimum via a dedicated PLC. The system is comprised of three (3) control loops:

1. **Material Recycle**

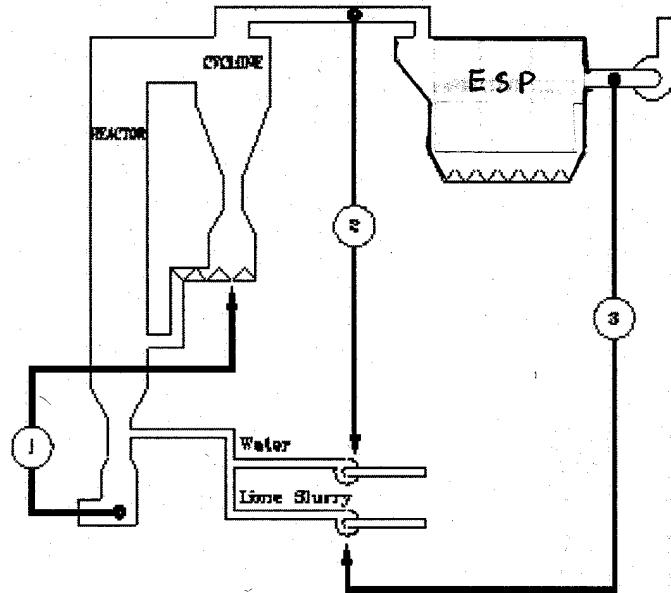
A sensor in the reactor inlet measures the dynamic pressure and converts it to flow. Based upon gas flow the controller adjusts the speed of the metering screws in the feeder box and controls the rate of recycle material flow to the reactor in direct proportion to the gas flow.

2. **Flue Gas Temperature**

A temperature indicator, located between the cyclone and ESP, controls the speed of the pump supplying cooling water to the injection nozzle in the reactor.

3. **Acid Gas Emission**

The acid gas emission monitor in the stack controls the speed of the pump administering lime slurry to the injection nozzle in the reactor. The metering screws in the feeder box, the water pump, and the lime slurry pump are all driven by motors with variable frequency drives (VFD) for precise control of the flow.



Water Pumps

Two positive displacement hose-type pumps are provided to deliver the water to GSA spray nozzle for each incinerator. These pumps are of peristaltic type, which delivers a variable flow at constant pressure. Each water pump is equipped with a variable frequency drive motor. A temperature indicator located between the cyclone and baghouse controls the speed of the pump supplying cooling water to the injection nozzle in the reactor.

Slurry Feed Pumps

Two slurry pumps are provided for each incineration train. The pumps are also positive displacement hose-type pumps. Each slurry pump is equipped with a variable frequency drive motor. Feedback from the stack SO₂ monitor in the stack controls the speed of the slurry feed pump administering lime slurry to the injection nozzle in the reactor.

Slurry Feed Tanks

One slurry feed tank is provided for each incineration train. It is used to store the lime slurry before it is delivered to the reactor spray nozzle. Two (2) enclosures, one for each GSA system, are provided to house the slurry feed tanks, slurry feed pumps and water pumps. Each pump house is insulated and heated. A ventilation fan is also provided.

Lot of Water, Slurry and Air Piping and Valves

AirPol provided redundant slurry piping to minimize the downtime in the event the lime slurry delivery line is obstructed. All lime, water and compressed air lines are insulated and heat traced.

Upgrade of Existing Electrostatic Precipitator

During the proposal stage, AirPol and FLS miljo Inc. examined emissions data and inspection reports provided by WES and concluded that the existing ESP was in very good physical and operating condition. Based on this information and the GSA outlet gas conditions, it was concluded that the existing ESPs could be reused as a part of the newly retrofitted GSA system.

After WES awarded the contract to AirPol, AirPol engineers inspected the ESP and concluded that the ESP mechanical and electrical components were in good condition. However, the original ESP structure was designed for a maximum suction pressure of 15 inches water column (iwc). After the addition of the GSA system the operating pressure will increase to 18.5 iwc. As such, the original ESP's structure required stiffening to safely handle the extra suction pressure. Design of the required reinforcements to the ESP was completed by Environmental Element. The work was accomplished by a local company under a separate contract with WES.

Induced Draft Fan

The original ID fans were replaced with two (2) new arrangement 7, Class IV, SWSI inlet centrifugal induced draft fans. Each fan is equipped with a variable frequency drive motor. Each fan is designed to deliver 75,800 acfm flue gases at 450 F with a static head of 18.9 iwc. Each fan is equipped with one (1) 400 HP 480 volt AC VFD's with main circuit breaker and (1) 400 HP 1200 rpm 460 volt AC inverter duty TEFC rated motor.

Common Lime Preparation and Storage System

AirPol Inc. supplied one (1) common lime preparation and storage system for both incinerators. The new lime preparation and storage system consists of one pebble lime silo, two (2) volumetric feeders, two (2) slakers, one (1) lime slurry mixing tank with agitator, three (3) lime slurry transfer pumps, and associated piping, valves and controls.

The Lime Preparation and Storage system is designed to receive the dry pebble lime from self-unloading bulk trucks. Dry pebble lime is pneumatically conveyed into the main storage silo via the self-unloading trucks on board blower. Conveying and displaced air are vented from the silo by a bin vent filter. A high level alarm alerts the fill operator to stop filling the silo. The lime silo has a ten (10) day storage capacity based on the lime usage at average gas flow condition. The lime silo is a 13'-0" diameter vessel and has a 42'-0" overall height.

A bin activator at the base of a 60 degree cone promotes flow of dry product out of the storage area of the silo. A knife gate valve at the discharge outlet serves as a maintenance shut off gate for down stream components.

The silo feeds lime to one slaking train consisting of a volumetric feeder, paste type slaker and grit separator. The slaking process is controlled automatically on a batch basis dependent on liquid level in the slurry tank. During lime slaking, slurry flows from the grit separator into the slurry tank by gravity where a turbine type agitator maintains lime particles in suspension. One grit conveyor is provided to convey from the grit separator to a grain container. Three (3) 60 gpm centrifugal slurry pumps are provided for delivery of slurry to the lime slurry feed tanks located near the GSA reactor. The lime slurry feed pump conveys the slurry from the main slurry tank to slurry feed tank where the slurry is delivered to the spray nozzle in the GSA reactor via a hose pump. Accessories, instrumentation, local control panels and terminal panels are provided for system operation.

Air Compressor System

Two (2) air-cooled rotary screw type compressors, each rated at 75HP for 350 cfm @ 125 psig, are provided for the new APC system. The complete equipment includes electronic modulation control, heavy duty air inlet filter, aftercooler with moisture separator and automatic trap lubricant, NEMA 12 magnetic starter 460 volts, auto controller with digital display for 3 mode selections, LED pressure/temperature displays, LED advisory lamps, LED shutdown displays, receiver tank, and desiccant type air dryer.

Residual Transport System

AirPol provided two (2) drag conveying systems, one for each GSA reactor/ESP, to transfer the residual from the GSA reactor drop out port, feeder box overflow, ESP hopper discharge to the ash pit. Before the residual is loaded to a truck for final disposal, it is wetted to prevent the residual becoming airborne during transportation. Each conveyor is designed to transport 10,000 lbs/hr residual with an estimated bulk density of 60 lbs/cf.

Activated Carbon Storage and Injection System (one common system supplied)

One PAC storage silo was supplied to receive and store the carbon from bulk trucks. Dry carbon is pneumatically conveyed into the silo via the self-unloading trucks on board blower. Conveying air and displaced air is vented from the silo through a bin vent filter.

Bin activators located at the discharge of the silo's bifurcated cone promotes flow of dry carbon from the silo. A manual knife gate valve at the discharge serves as a maintenance shut off gate for downstream components. The silo feeds powdered activated carbon to one feed train consisting of a volumetric feeder, eductor and pneumatic blower assembly. The PAC discharge from each eductor is directed through a flexible hose that can be attached to the skirt area discharge fittings. Accessories, instrumentation, local control panel and terminal panels are provided for system operation.

The estimated activated carbon injection rate for each new APC system is 4 lbs/hr.

Instrumentation and Controls

Local Instruments and controls are provided. The control system consists of two PLCs, data highway and logic designed for the plant's existing PROVOX system.

Electrical and Control System

AirPol furnished the following electrical and control system:

Two (2) motor control centers (MCC), 480 V, 3 Phase, 3 wire, NEMA 1A Class 1B. Each MCC has 65 KAIC bracing and copper bus. Each center has 400 A. main fused disconnect, and all starters will be full voltage combination fusible switch with overload heaters. All fuses and overloads are included. The MCC's included a matching PLC Enclosure where all starter control wiring will be connected. MCC's included a 480 V to 120 V power transformer and distribution panel for control power.

Two (2) 350 HP 480 V VFD's with main circuit breaker, two (2) new 350 HP 1200 rpm 460 V. inverter duty TEFC rated motors.

Two (2) NEMA 12 PLC panels. The PLC panels include main lockout disconnect, isolation transformers, Allen Bradley SLC Processors, necessary racks, I/O, power supplies, etc., interposing relays, terminal strips, wire, wire duct, etc. to complete the panels.

One (1) NEMA 12 enclosure for the main operator interface. Included is all necessary programming to operate the reactor system.

One (1) lot of non—fused/lockout field disconnects equipped with auxiliary contacts, and Hand-Off-Auto switches.

One (1) lot of remote HOA stations.

All local area lighting, panels, 110 volt outlets and wiring.

Ductwork and Expansion Joints

Ductwork provided includes the connection between the Economizer Outlet to GSA inlet and GSA outlet to ESP inlet. Ductwork includes stiffeners, transitions, elbows, flanges and expansion joints as well as structural supports.

Construction, Erection and Tie-in

The new APC system foundation work started in December, 2000 and was completed in February 2001. The general contractor for the balance of the work mobilized the second week of March, 2001. By the end of July, 2001 all the electrical installation and commissions were complete. The facility shut down on July 30, 2001 for tie in. AirPol completed the inlet/outlet ductwork tie in, installation of new ID fan and new drag conveyors in fourteen days on both incinerators. Both incinerators were brought back on line during the week of August 30, 2001 with the GSAs fully operational. For the plan and elevation view of the new APC system, see Figure 2 and 3 for details.

Figure 2: New APC System – Plan View

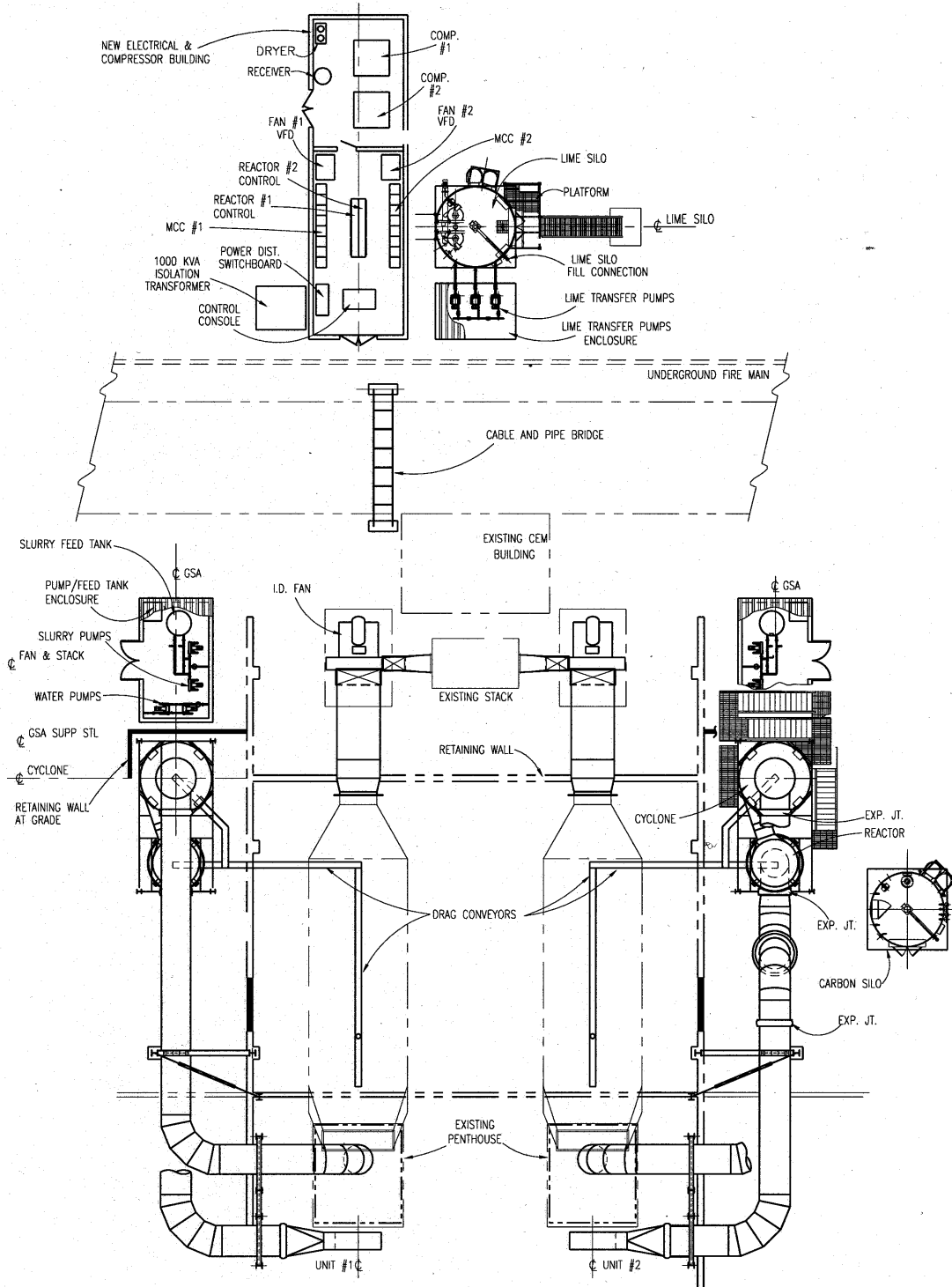
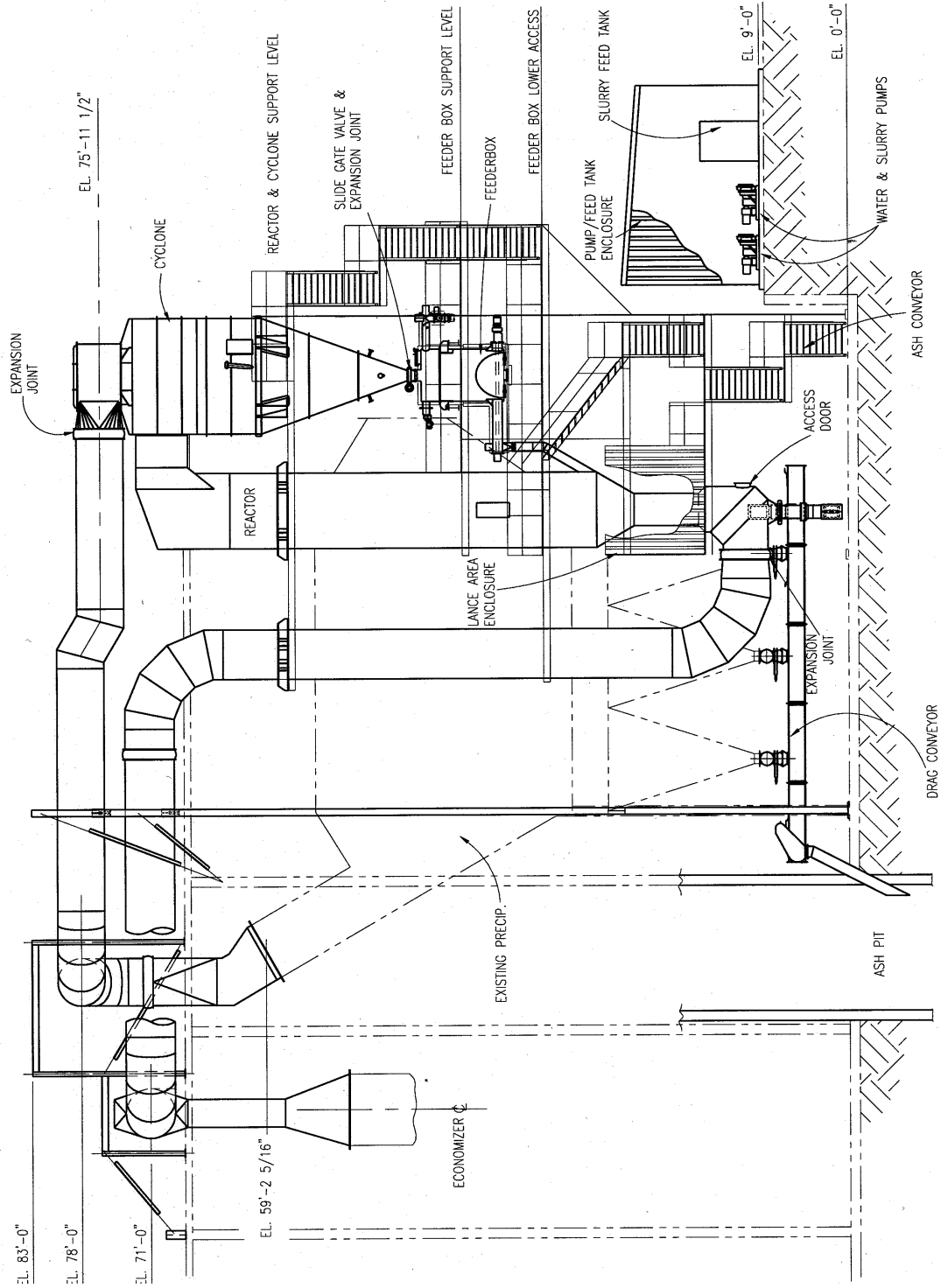


Figure 3: New APC System – Elevation View



System Performance

The new APC system was commissioned and put into service during September 2001. The startup in September on both systems went smoothly without encountering any substantial problems. This is contributed to engineers from AirPol and WES checking each piece of equipment and subsystem thoroughly during the construction and pre-startup stage.

Purchasing records from the first six months of operation indicate an overall pebble lime consumption rate of approximately 13 lbs per ton of waste combusted. Results of testing indicate that performance objectives can be met with no carbon injection, however, the facility is currently injecting carbon at a rate of approximately 0.3 lbs per ton of waste combusted.

Engineering stack testing was conducted during October 2001 after minor operations issues had been resolved. The engineering testing was conducted for both AirPol and WES to assess system performance prior to the performance testing required by the Utah Division of Air Quality. Six 120-minute samples were collected. All sampling was conducted on Unit A. Table 2 summarizes the results of Engineering Testing on Unit A.

Table 2: Unit A Engineering Test Results

Pollutant ¹	Average of 2 Runs			Guaranteed Emission	Subpart BBBB Class 1 Emission Limits
	9/11/01	9/12/01	9/13/01		
Carbon Injection Rate, lb/hr	0	4	8		
Particulate Matter (mg/dscm)	1.51	0.98	1.63	< 24	27
Total Dioxin/Furan (ng/dscm)	4.43	1.33	5.38	< 86	60
Cadmium (mg/dscm)	0.0015	0.0020	0.0018	< 0.07	0.04
Lead (mg/dscm)	0.0766	0.0254	0.0380	< 1.1	0.49
Mercury (mg/dscm)	0.0197	0.0052	0.0042	< 0.06	0.08
Hydrogen Chloride (ppmdv)	31.8	12.7	10.1	< 140	31
Hydrogen Fluoride (mg/dscm)	<0.07	<0.06	<0.06	N/A	N/A
Sulfur Dioxide (ppmdv)	10	16.7	13.9	< 38	31
Opacity (%)	< 1	<1	<1	7% max	< 10
Boiler Steam Flow (kpph)	52.4	52.4	53.0		
ESP Inlet Temperature (degrees F)	287	286	286		

1. All pollutants corrected to 7% oxygen.

Results of the engineering testing indicated the new APC system not only meets the contract performance guarantees, but also comfortably meets the federal standards under Subpart BBBB.

Based upon the results of the engineering testing, compliance stack testing was scheduled and conducted in late November 2001. Representatives from both the Utah Division of Air Quality and Region 8 of the US Environmental Protection Agency (EPA) were on site during the compliance testing. Three sample runs, each lasting four hours, were conducted on each of the two units. Results of Unit A and Unit B compliance stack testing are summarized in Table 3

Table 3: Unit A & B Performance Test Results

Pollutant ¹	Average of 3 Runs		Subpart BBBB Class 1 Emission Limits
	Unit A	Unit B	
Carbon Injection Rate (lb/hr)	0	0	
Particulate Matter (mg/dscm)	0.4	1.4	27
Total Dioxin/Furan (ng/dscm)	14.12	6.13	60
Cadmium (mg/dscm)	0.001	0.004	0.04
Lead (mg/dscm)	0.01	0.04	0.49
Mercury (mg/dscm)	0.04	0.02	0.08
Hydrogen Chloride (ppmdv)	13.4	5.7	31
Hydrogen Fluoride (mg/dscm)	<0.03	<0.03	N/A
Sulfur Dioxide (ppmdv)	13.5	16.9	31
Opacity (%)	1.2	2.7	<10
GSA Inlet Temperature (degrees F)	441	429	
ESP Inlet Temperature (degrees F)	287	285	

1 All emissions corrected to 7% oxygen.

Conclusions

There are seven (7) FLS's GSA systems equipped with ESPs currently in operation in Europe. The GSA system at the DCERF is the first such system installed in the USA on a municipal solid waste combustor. The GSA has successfully demonstrated that:

- GSA Technology is a valid retrofit technology whenever an existing MSW plant utilizes a well designed ESP that is maintained in proper condition.
- GSA System construction and tie-in was completed ahead of the schedule.
- The performance of the new APC system not only meets the contractual guarantees but also comfortably meets the requirements of 40 CFR, Part 60, Subpart BBBB Emission Guidelines for Existing Small Municipal Waste Combustors.
- Operation of the GSA system is relatively simple and has demonstrated more than 98% availability since system startup.

REFERENCES

1. Source Emission Testing Report for Wasatch Energy Systems: Layton, Utah "September 2001 Diagnostic Test Program". Test Dates: September 11-13, 2001 By Air Pollution Testing, Inc.
2. Source Emission Testing Report for Wasatch Energy Systems: Layton, Utah "November Performance Test Program". Test Dates: November 27 – December 4, 2001 By Air Pollution Testing, Inc.