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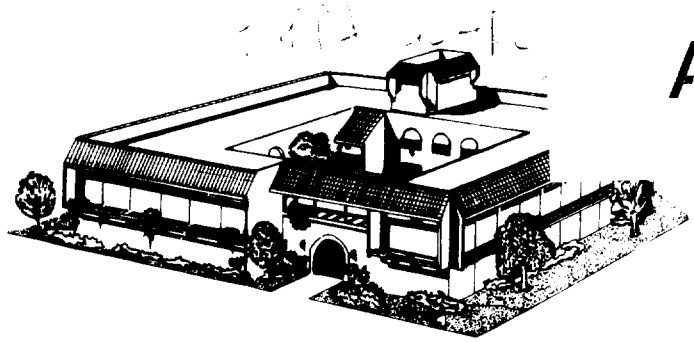

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TAMPA, FLORIDA 33605

TELEPHONE (813) 272-5960

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May 1, 1986

E. L. Martinez, Chief
Source Analysis Section/AMTB (MD-14)
U. S. Environmental Protection Agency
Research Triangle Park, NC 27711

Re: Emission Factor Development

Dear Mr. Martinez:

This is in response to STAPPA and ALAPCO's request for source test data. The attached report is for a resource recovery incinerator located within our jurisdiction. Unfortunately, we do not have any test information for fugitive dust sources or organic chemical manufacturing facilities.

If we can be of any further assistance, please contact me.

Sincerely,

Jerry Campbell

Jerry Campbell, P. E.
Chief, Air Engineering Section
Hillsborough County Environmental
Protection Commission

Attachments

JC/ch

Resource Recovery Incinerator Info. etc.

Source Data

The McKay Bay Refuse-to-Energy Facility is designed for mass burning of municipal solid waste. The facility consists of four process lines. Each process line contains a furnace, boiler and electrostatic precipitator and is rated at 250 tons per day. Each process line can operate independently of the others. There are two stacks, each stack serves two process lines. Specific source data is listed below.

maximum charging rate:	1000 TPD (250 TPD per process line)
maximum heat input rate:	9×10^9 BTU/Day (2.25×10^9 BTU/Day/line)
maximum flow rate:	75,000 dscfm per stack (37,500 dscfm per line)
stack height:	160 feet
stack diameter:	5.75 feet
UTM coordinates:	East 360000 North 3091900
exit gas tempereature:	540°F
exit gas flow rate:	154,000 ACFM per stack (77,350 ACFM per line)
exit gas moisture:	14%
operating schedule:	24 hr/day, 7 days/week, 52 weeks/year

Process Parameters

maximum charging rate:	1000 TPD (250 TPD/line)
furnace temperature:	2200 - 2400°F
fuel:	unsorted municipal solid waste
	design fuel analysis (by weight)
	Carbon 24.67%
	Hydrogen 3.70%
	Oxygen 22.75%
	Nitrogen 0.58%
	Sulphur 0.30%
	Moisture 30.00%
	Non Combustible 18.00%
	Higher Heating Value 4500 BTU/lb
combustion conditions:	50-80% excess air
	7-11% O_2 in flue gas (as it leaves boiler)
steam conditions:	650 psig
	700°F
	208,400 lbs/hr normal flow rate
electrical output:	22,500 KW

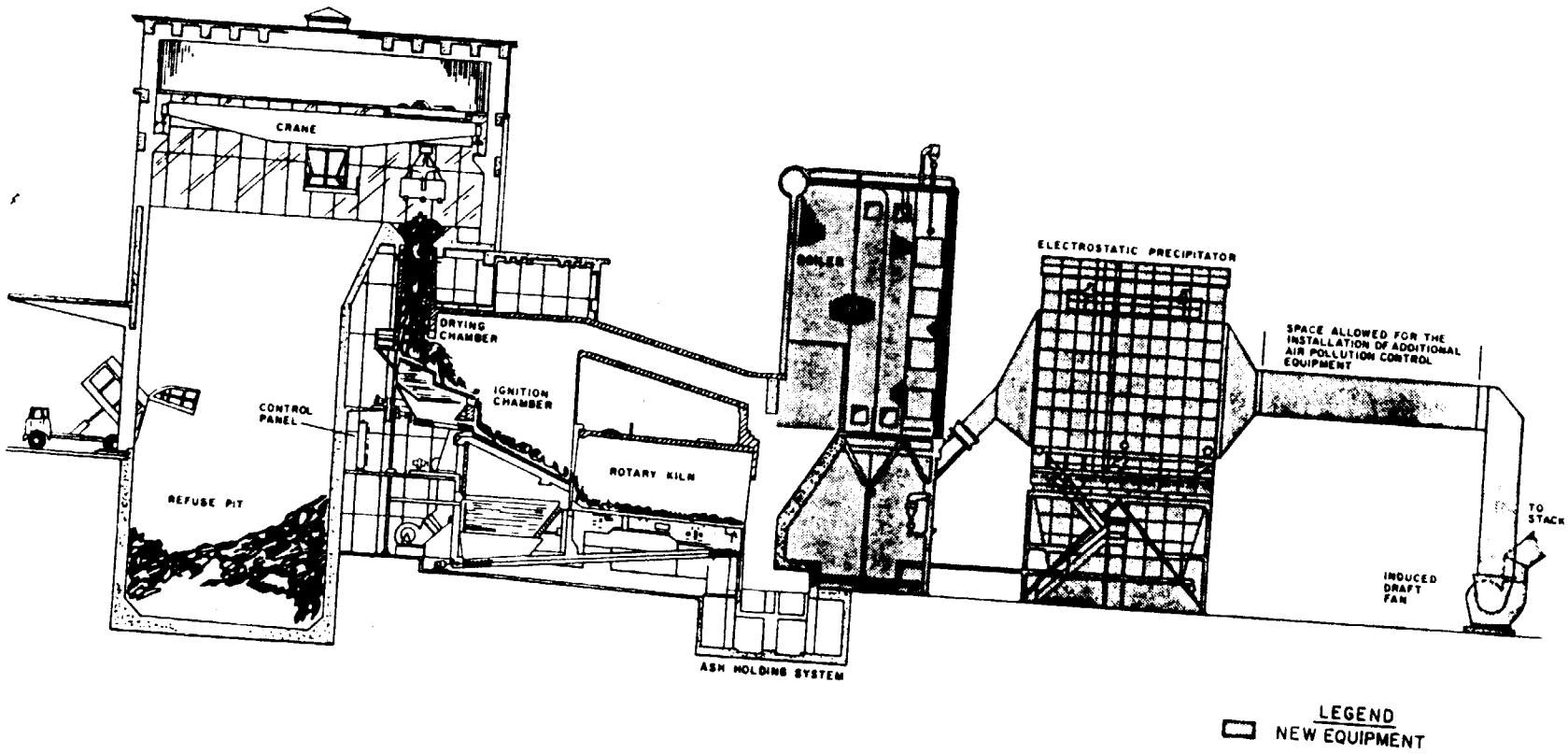

FIGURE 1-3

CROSS-SECTIONAL VIEW OF THE TAMPA INCINERATOR WITH RESOURCE RECOVERY EQUIPMENT ADDED

Pollution Control Equipment

Electrostatic precipitators are used for pollution control. There are four independently operated electrostatic precipitators, one for each process line. Each precipitator contains two fields that are independently controlled. If one field trips off line, the other field continues to operate and provide particulate control.

manufactures: F. L. Smidth

model name and number: F300

type: 2 field electrostatic precipitators

design flow-rate: 37,430 scfm

primary voltage: 480V

primary current: 89A

secondary voltage: 25,000 - 45,000 VDC

secondary current: 800 mA

design efficiency: 99.45%

Performance parameters for each field of each precipitator are continually monitored and adjusted by a microprocessor. This microprocessor continuously monitors the following parameters; primary voltage, secondary voltage, primary current, secondary current, spark rate rapper frequency (plates), rapper vibrator frequency (wires), rapper duration (plates) and rapper vibrator duration (wires). During normal operations the microprocessor controls secondary voltage between 25,000V and 45,000V depending on secondary current and spark rate. If the microprocessor senses problems it trips off the effected field

of the precipitator and sounds an alarm in the control room. In case of an alarm, plant personnel immediately investigate. Due to the redundancy of a 2 field precipitator, one field can trip offline and the remaining field will continue to function and control particulate emissions. This microprocessor is manually checked every two hours and the primary voltage, primary current, secondary voltage and secondary current is recorded by plant personnel.

The manufacturers recommended operation and maintenance schedule is attached. Plant personnel will follow the manufacturers recommendations.