



Wheelabrator Technologies Inc.

A Waste Management Company

Wheelabrator Technologies Inc.

January 2006



Overview

- **23 Plants**

- 17 Waste to Energy
- 3 Wood Burners
- 1 Culm Burner
- 2 Gas Turbines

- **14 Transfer Operations**

- **1 MRF**

- **3 Ash Landfills**

- **1 Landfill Gas Project**



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Waste-to-Energy and Independent Power Production Operations

Waste-to-Energy Operations

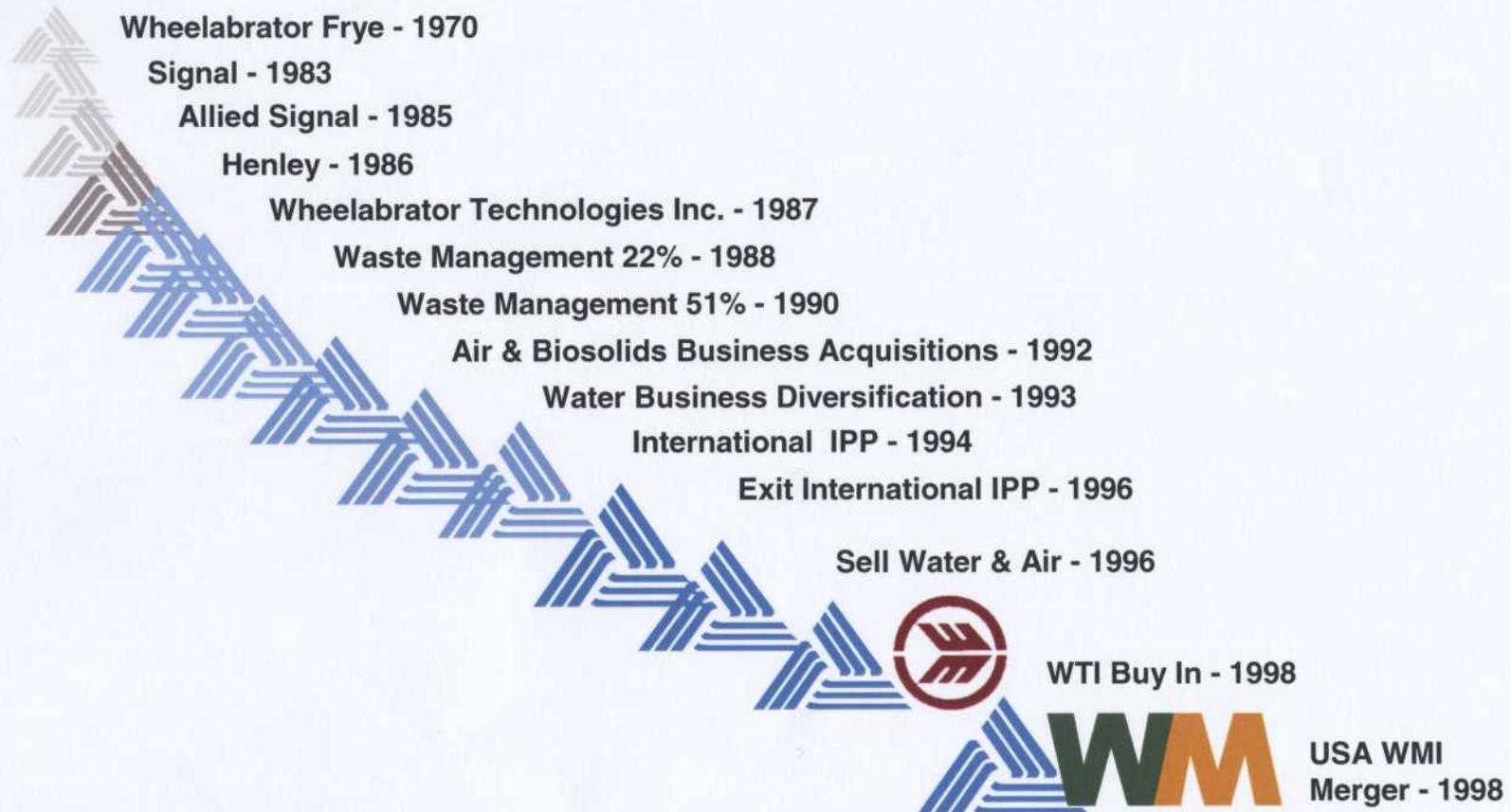
- 17 Facilities ranging in size from 200-3000 tpd
- 24,500 tpd and 685 MWh capacity
- 7,500,000 tons processed and 4,100,000 MWh sold
- 545 KWh/ton processed
- 848 employees (non-union)

Independent Power Production Operations

- 6 Facilities processing alternate fuels (wood, tires, culm, landfill gas), natural gas and oil
- 4375 tpd and 255 MWh capacity
- 1,373,421 tons processed and 1,582,401 MWh sold
- 195 employees (non-union)



Wheelabrator Corporate History

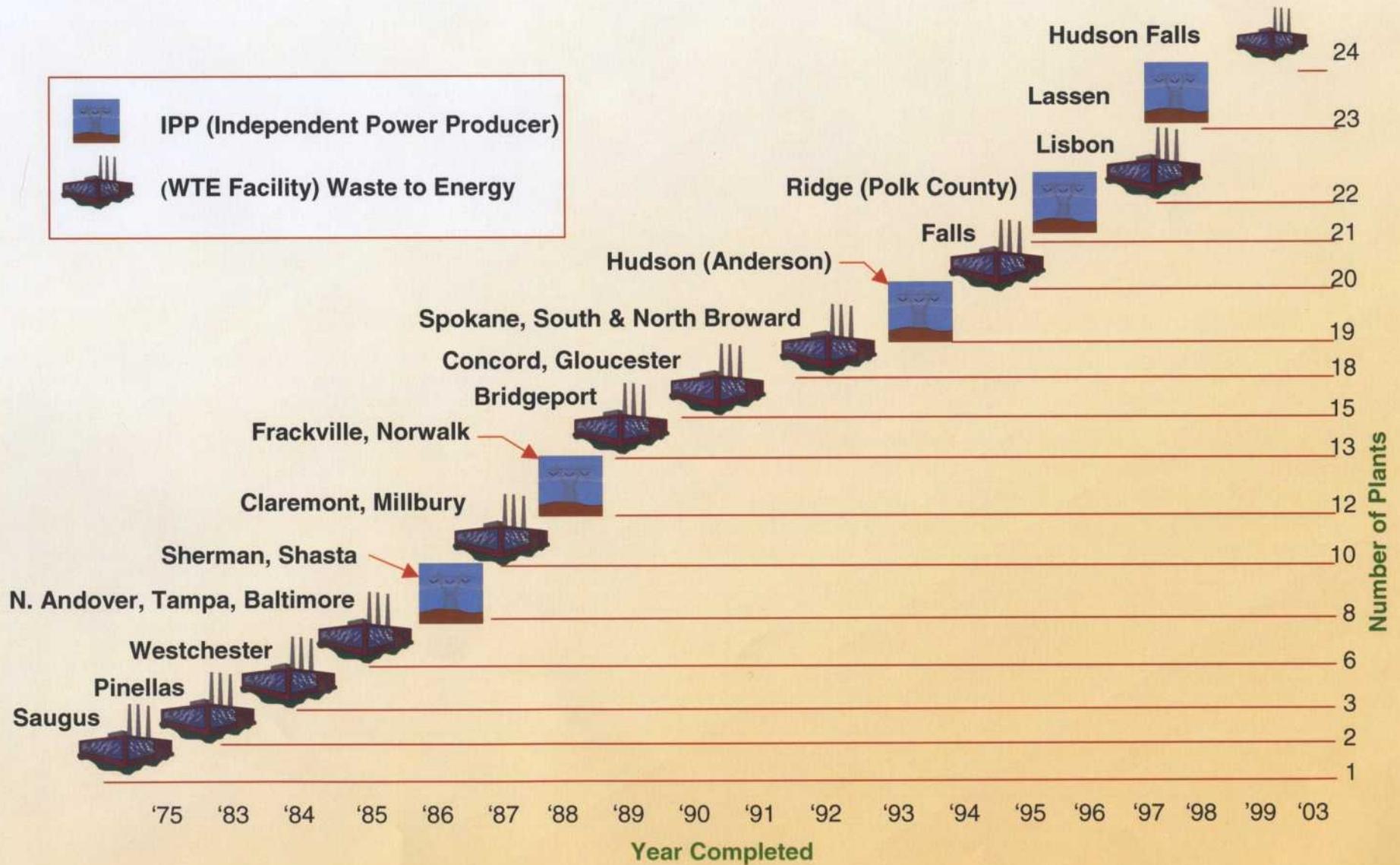


WTE Industry Overview

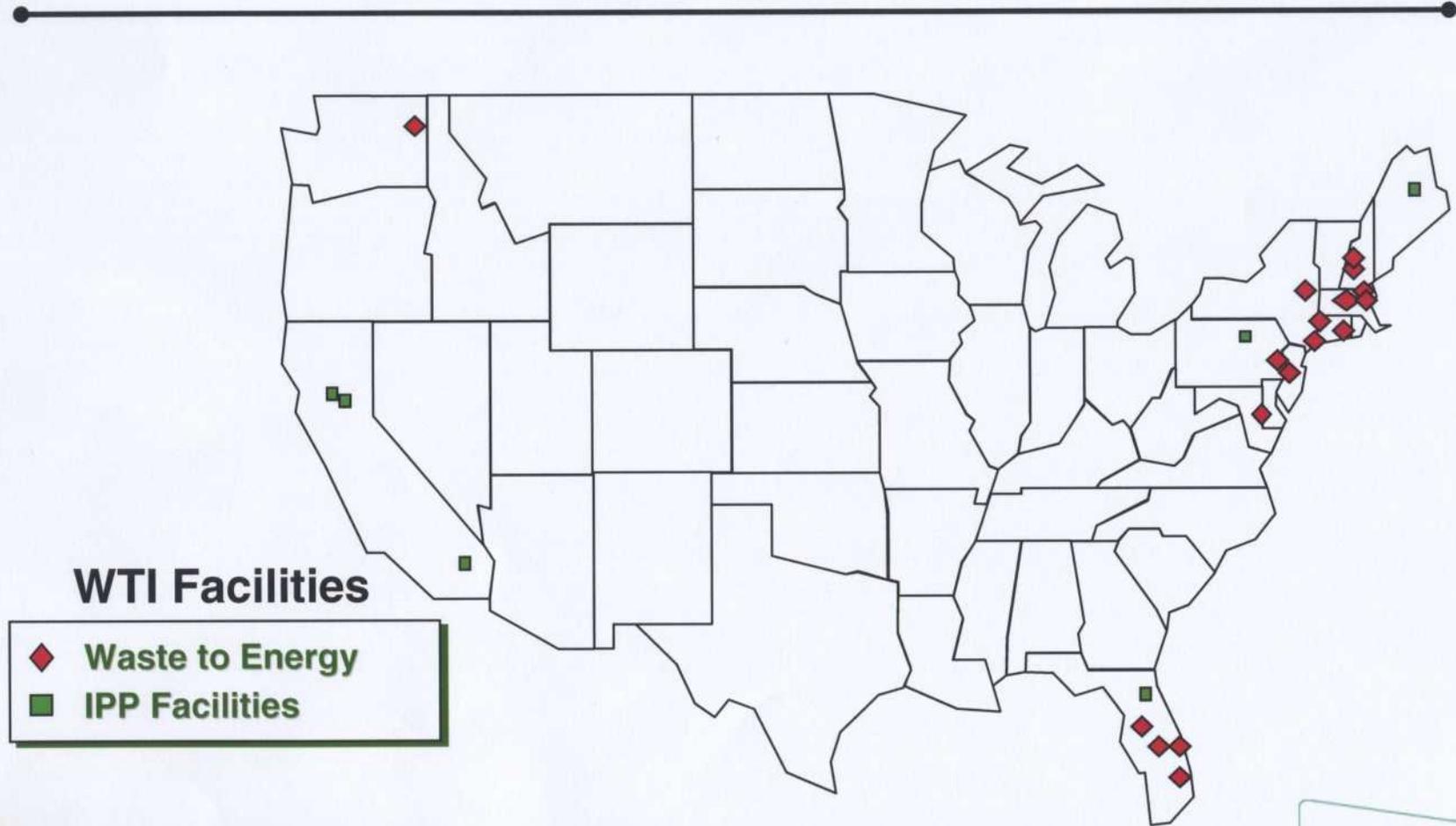
- **89 Projects in U.S. with 93,000 TPD of Capacity**
- **Covanta - 33,500 TPD**
 - 28 projects, 17 own & operate, 11 operating contracts
- **Wheelabrator - 23,500 TPD**
 - 17 projects, mostly own and operate
- **American Ref-Fuel - 14,000 TPD**
 - 6 projects, mostly own and operate



Completed Projects - Energy



Wheelabrator Facility Locations



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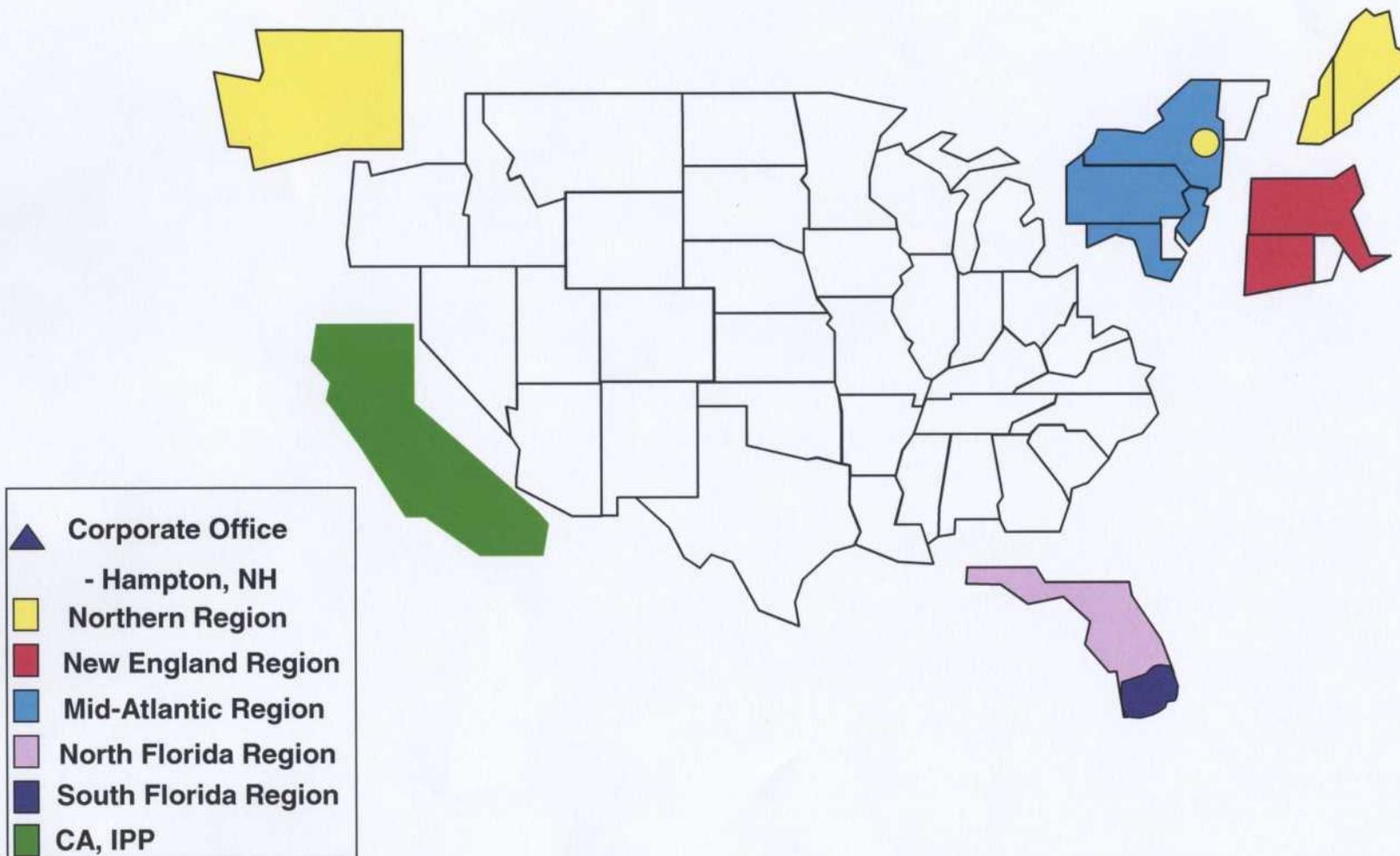


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Wheelabrator Technologies Inc. Waste-to-Energy and Independent Power Production Operations



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Core Competencies

- **Plant Operations**
- **Financial Systems and Controls**
- **Environmental, Health and Safety**
- **Complex Project Development and Execution**
- **Long Term Contract Management**



Core Competencies (continued)

- **Troubleshooting and Problem Solving**
- **Project Financing / Project Structure**
- **Acquisitions**



Human Resources

- **All Waste-to-Energy Plants are Non-Union**
- **Educated and Technical Work Force**
- **Strong Knowledge Base of Complex Power Plants**



Development Experience and Capabilities

- **Initiate and Develop Complex Projects**
- **Manage Multidisciplinary Teams**
 - Business Development
 - Legal
 - Finance
 - Engineering / Construction
 - Operation
 - E, H & S
 - Community Relations
- **Development Approaches**
 - Company Initiatives; Greenfield
 - RFPs
 - Acquisitions



Construction Capability

- **\$2.5 Billion of Projects Completed**
 - Ahead of Schedule and Under Budget
 - Transition of Project Managers/Engineers

- **\$375 Million of Retrofit Projects through 2000**



Waste-to-Energy Fundamentals



- WTI and Waste-to-Energy Industry Overview
- WTI Waste-to-Energy Video Tour
- Four Main Sections of a Waste-to-Energy Facility
 - Refuse Receiving
 - Combustion - Boilers
 - Converting Thermal Energy to Work - Power
 - Pollution Controls



Energy Value of Trash

1 Ton Trash

(10.4 million BTU)



1.79 Barrels of Oil

(5.8 million BTU/barrel)



545 Net Kilowatts



Wheelabrator processes 7,500,000 tons/year \cong 4,100,000 MWH

\cong enough electricity for over 400,000 homes
(average home consumes \cong .9 MWH/month)

\cong displaces the need for over 1.3 million barrels of oil/year

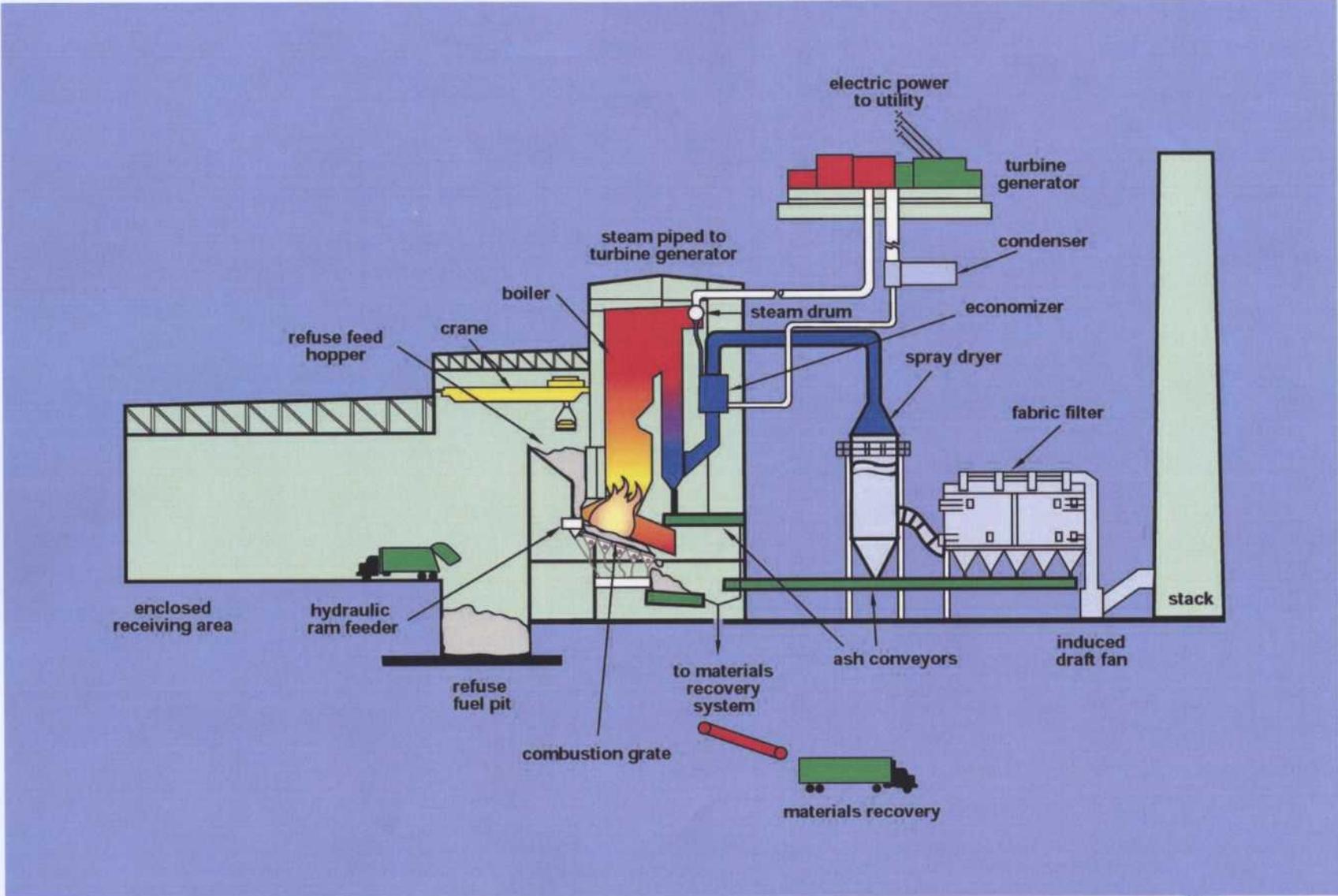


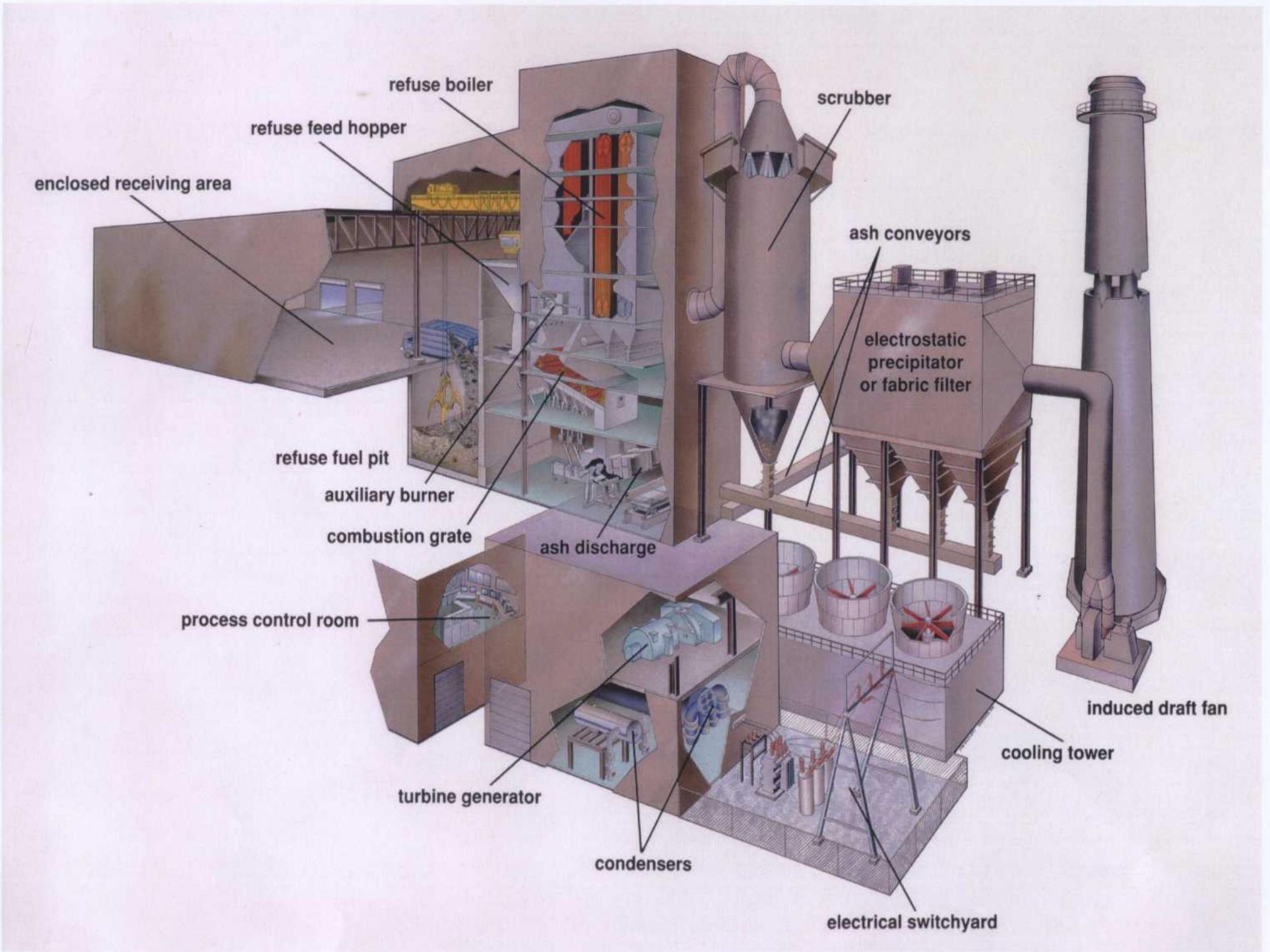
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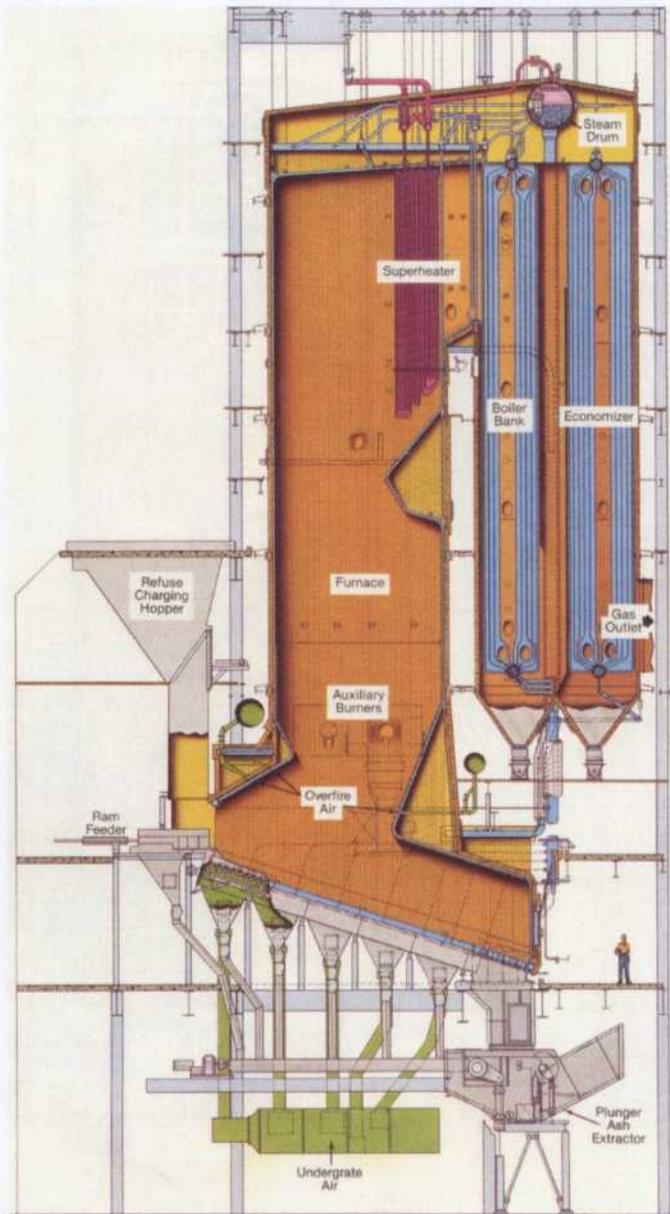
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WHEELABRATOR WASTE-TO-ENERGY BOILER



Refuse Receiving



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Refuse Receiving

- Trucks weigh in at scale house (automated at some locations)
- Trucks proceed to tipping floor area and are directed by tipping floor attendant
- Trucks are emptied onto floor and inspected by tipping floor attendant
 - Looking for large bulky items, other non-combustibles
 - Ensuring load is safe to push into refuse pit
- Refuse load is pushed into the pit
- Truck exits tipping area and weighs out at scale house



Refuse Receiving

- Refuse that is in the refuse pit is managed by the crane operator
- Crane Operator sorts trash, mixes to achieve a homogenous blend
- Mixing and breaking up the refuse assists in more complete combustion and prevents greater chances of piling refuse on the grates



Common MSW Facts

- Average person disposes of 3.4 lbs of refuse per day

Material Constituents	MSW%	Ultimate Analysis	
Paper & Cardboard	46.6	Carbon	25.6
Misc	18.9	Hydrogen	3.4
Glass	9.5	Oxygen	20.3
Natural Organics	6.6	Nitrogen	0.5
Wood	6.4	Chlorine	0.5
Metals	6.4	Sulfur	0.2
Plastics	3.2	Inorganics (ash)	24.3
Textiles	1.7	<u>Moisture</u>	<u>25.2</u>
<u>Tar</u>	<u>0.7</u>	Total	100
Total	100		



Refuse Receiving



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Refuse Receiving

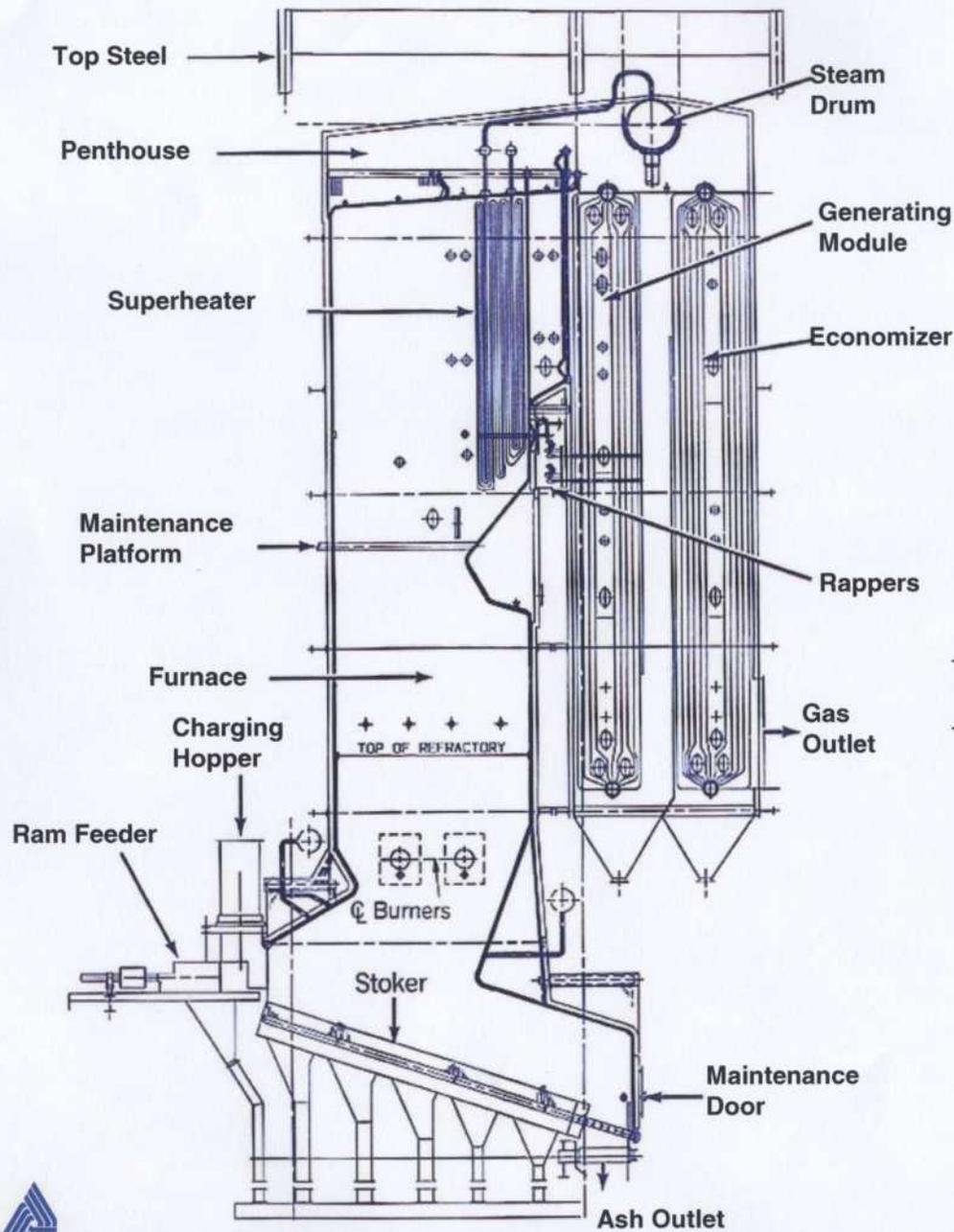


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Boiler

Major Equipment and Locations



Burning Refuse ~ 2500 °F



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Common Operating Parameters

- Steam Pressures ~ 600 - 1300 psi
- Steam Temperatures to Turbine ~ 750 - 930 °F
- Steam Flows ~ 30 - 210 Klbs/hr.
- Electrical Generation ~ 4.5 - 76 MW
- Furnace Temps ~ 2500 °F
- SH Inlet Temps ~ 1350 - 1625 °F
- FEGT (Furnace Exit Gas Temp) ~ 1500 °F

