Reinhold Environmental Ltd.

2006 APC Round Table & Expo Presentation

July 16-18, 2006, Columbus, OH

THE INDIGO AGGLOMERATOR

A Proven Technology
For Reducing Mass And Visible Emissions
From Electrostatic Precipitators

Bob Crynack – Indigo Technologies

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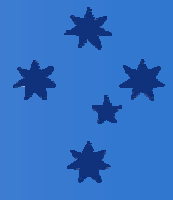
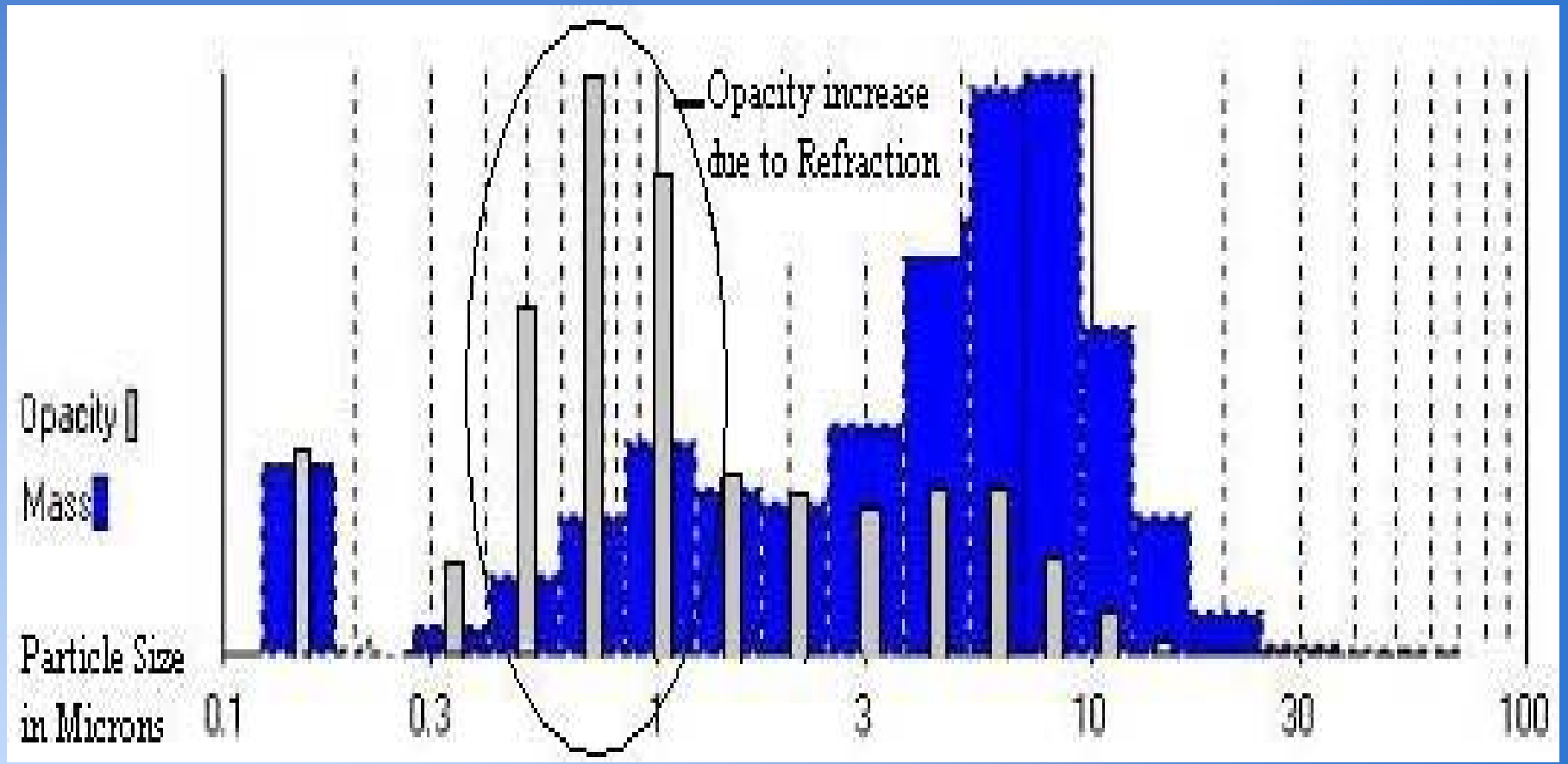


TYPICAL MASS AND OPACITY VERSUS PARTICLE SIZE AT ESP OUTLET



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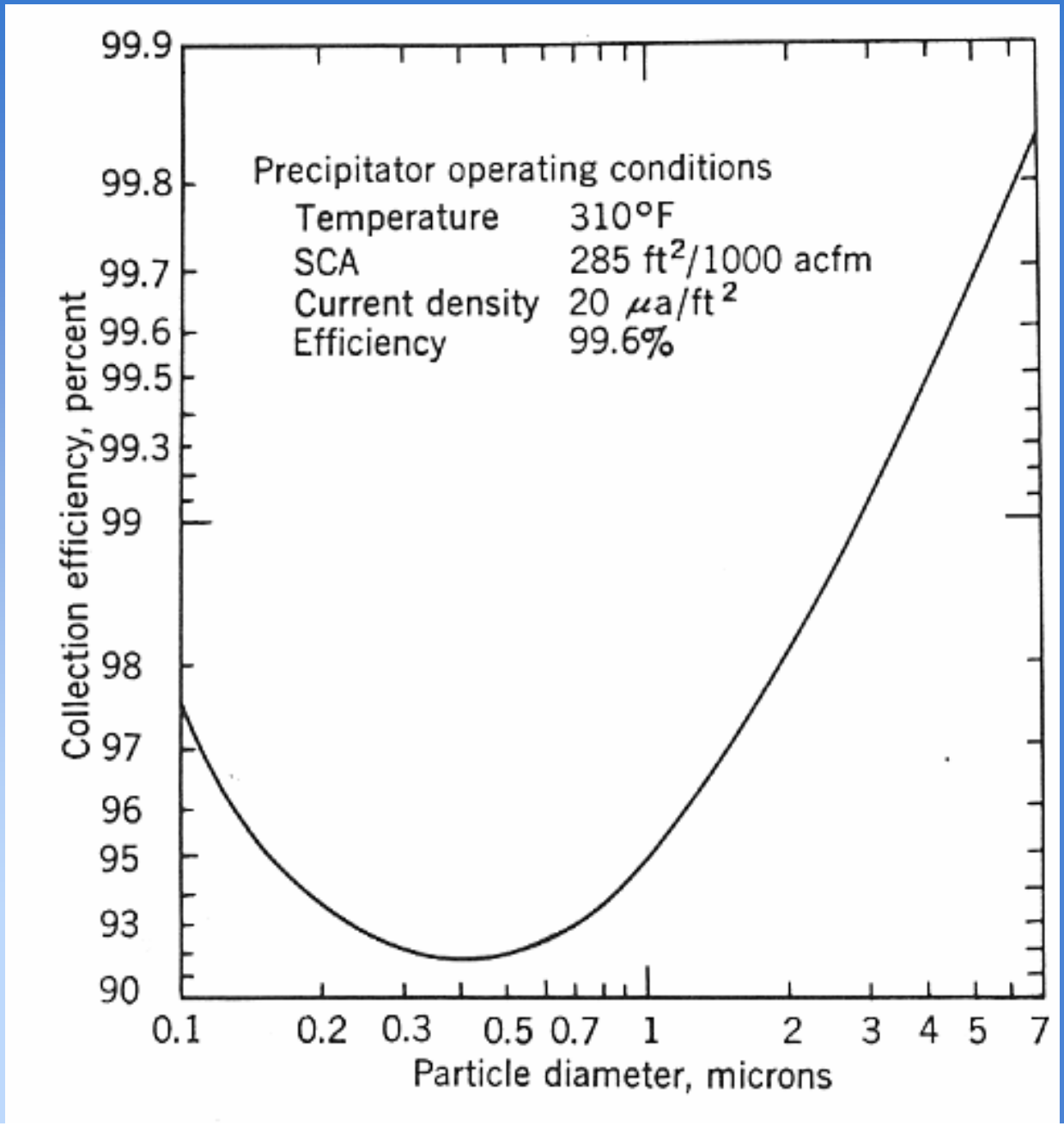
ESP PARTICLE SIZE PERFORMANCE



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How Does It Work?

- Treats the dust prior to entering the ESP.
- Uses a combination of fluidic agglomeration processes (FAP) and bi-polar electrostatic agglomeration processes (BEAP) to attach the fine particles to the larger, easily collected particles

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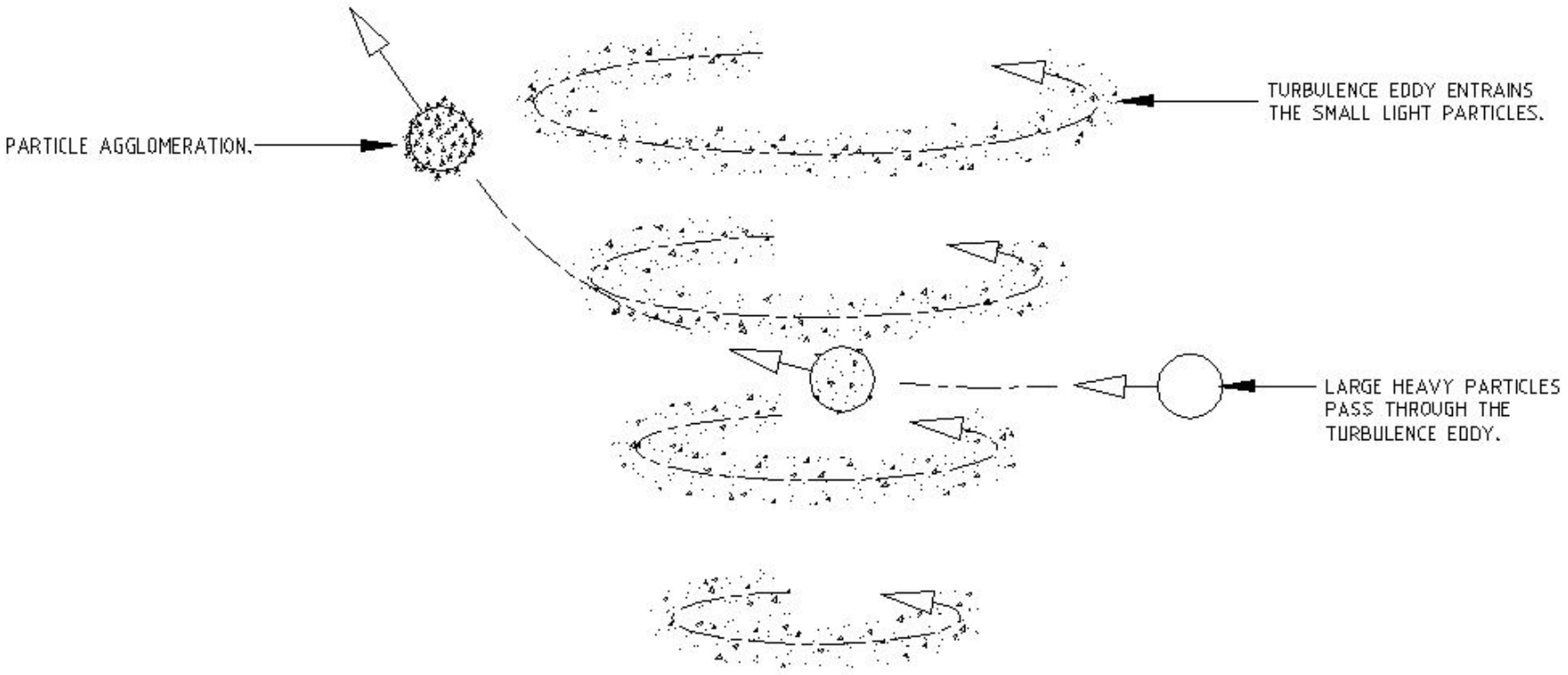
FLUIDIC AGGLOMERATION PROCESS



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How Does It Work?

- The Bi-Polar Charger charges half the dust positively and the other half negatively.
- Fine negative particles are selectively mixed with the large positive particles and large negative particles with fine positive particles.
- When a fine particle comes close to an oppositely charged large particle, it is attracted to and attaches to the large particle

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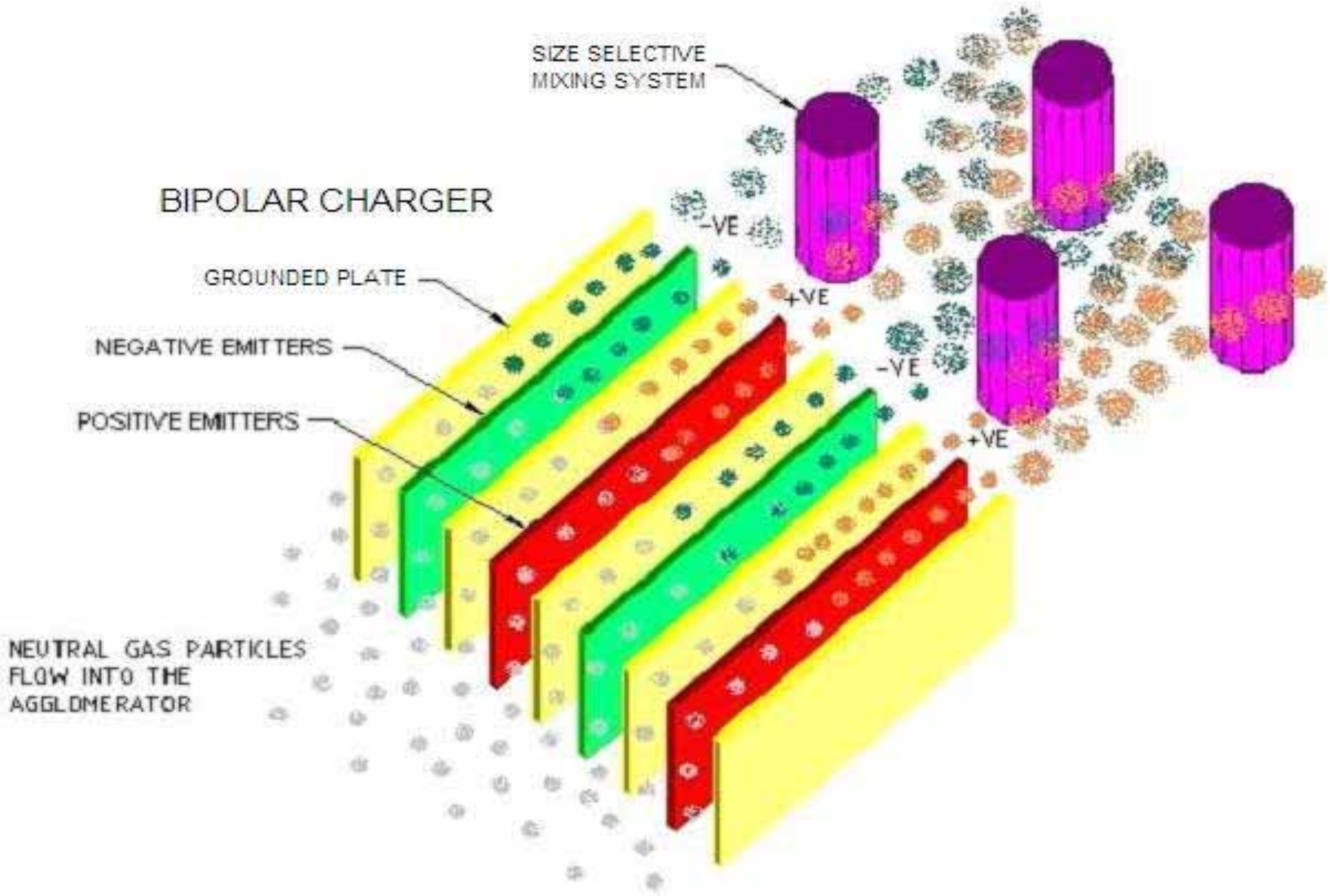
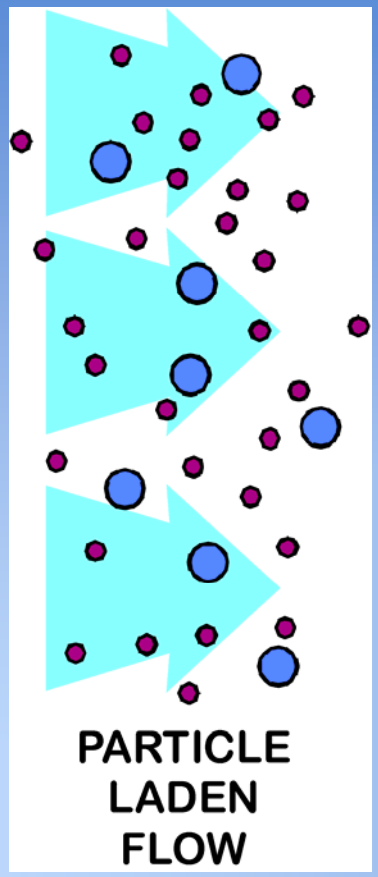
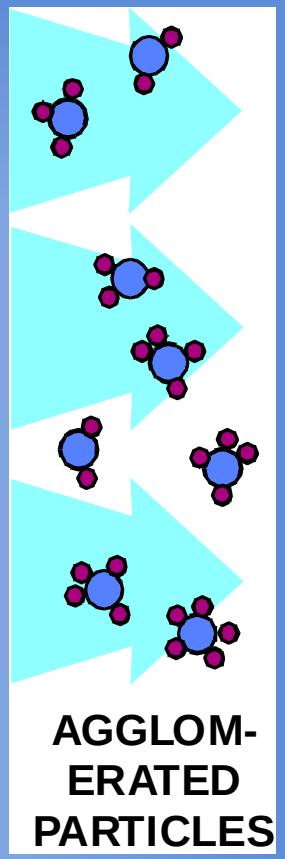
THE INDIGO AGGLOMERATOR



The Agglomeration Process





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THE BENEFITS

- Reduced mass emissions
- Reduced visible emissions
- Reduced PM2.5 emissions
- Greater compliance safety margin
- Increased choice of coal supply
- Higher tolerance for
  - Boiler upsets
  - Lost electrical sections of ESP

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US INSTALLATIONS

- Mississippi Power - Plant Watson U4
  - 1/2 of 250 MW unit - March 2003
- GA Power – Plant Hammond U3
  - 115 MW – 2 ducts - October 2004
- Empire Electric – Asbury Station U1
  - 225MW - 2 ducts - May 2005
- Dynegy Generation – Havana Station U6
  - 480 MW – 2 ducts – May 2006

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PLANT WATSON

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WATSON ESP OUTLET TESTS
WEST ELK COAL – APRIL 2003

MEASUREMENT	A PASS	B PASS	REDUCTION
OPACITY %	15	4	73%
PARTICULATE			
Grains/Act. Cubic Ft.	0.012	0.0066	45%
Milligrams/Cubic Meter	27.5	15.1	
FLOW			
Actual Cubic Ft/Min	408 718	450 700	
Actual Cubic Meters/Min	11 573	12 762	
GAS TEMPERATURE			
Degrees F.	276	273	
Degrees C.	136	134	

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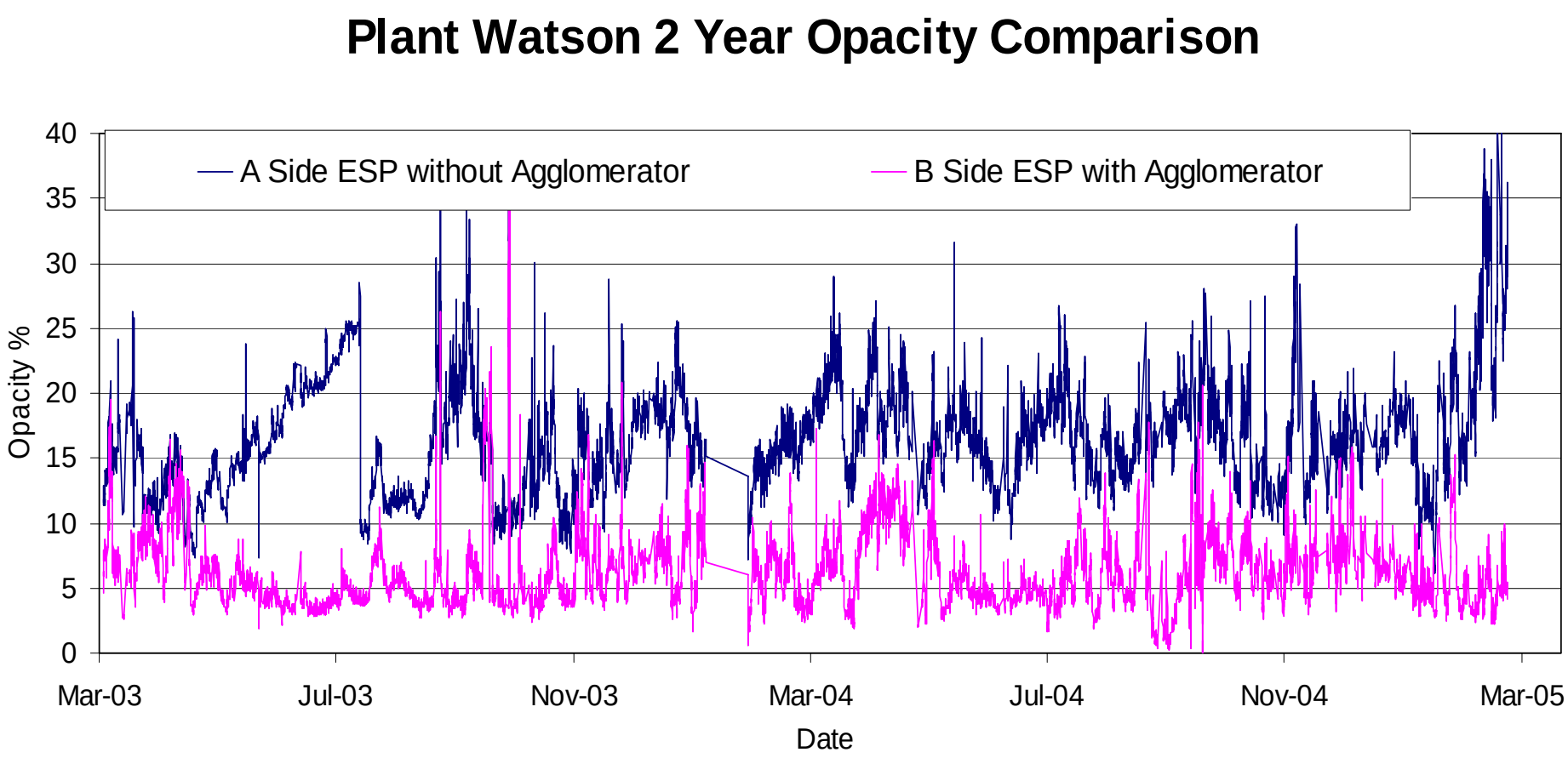
OPACITY TREND AT WATSON STATION



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Summary

- Short outage duration required (1-4 weeks)
- Short lead time (4-6 months)
- Low operating and maintenance costs
- Low pressure loss (less than 1 inch w.g.)
- Low power consumption (5 kw per 100MW equivalent installation)

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Other Applications

- Hg removal enhancement with ACI
- SO3 removal enhancement with reagent
- Fabric filter
  - Reduced pressure loss
  - Reduced cleaning rate
  - Increased bag life

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