

Portland Cement Proposed MACT

Is There a Magic Bullet Control Technology?

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Proposed Standards

<u>HAP</u>	<u>Existing</u>	<u>New</u>
• Mercury (lb/million ton clinker)	43	14
• Total Hydrocarbon (ppmv)	7	6
• Hydrochloric acid (ppmv)	2	.1
• PM (lb/ton clinker)	.085	.080

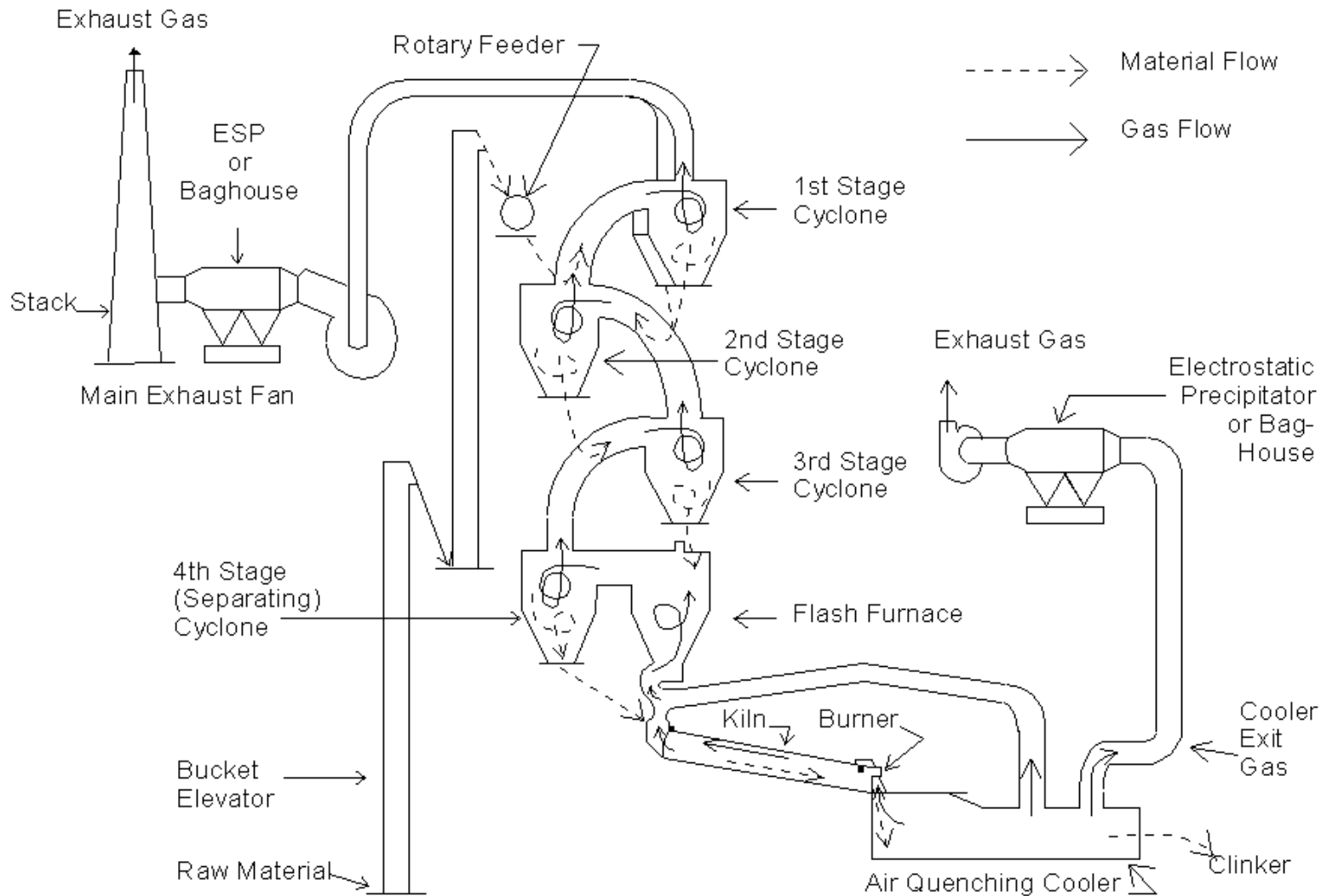
EPA Proposed Control Technologies

- Hg – Activated Carbon, Wet Scrubber
- THC – Activated Carbon, RTO
- HCl – Limestone Scrubber
- PM – Baghouse

Other “Issues”

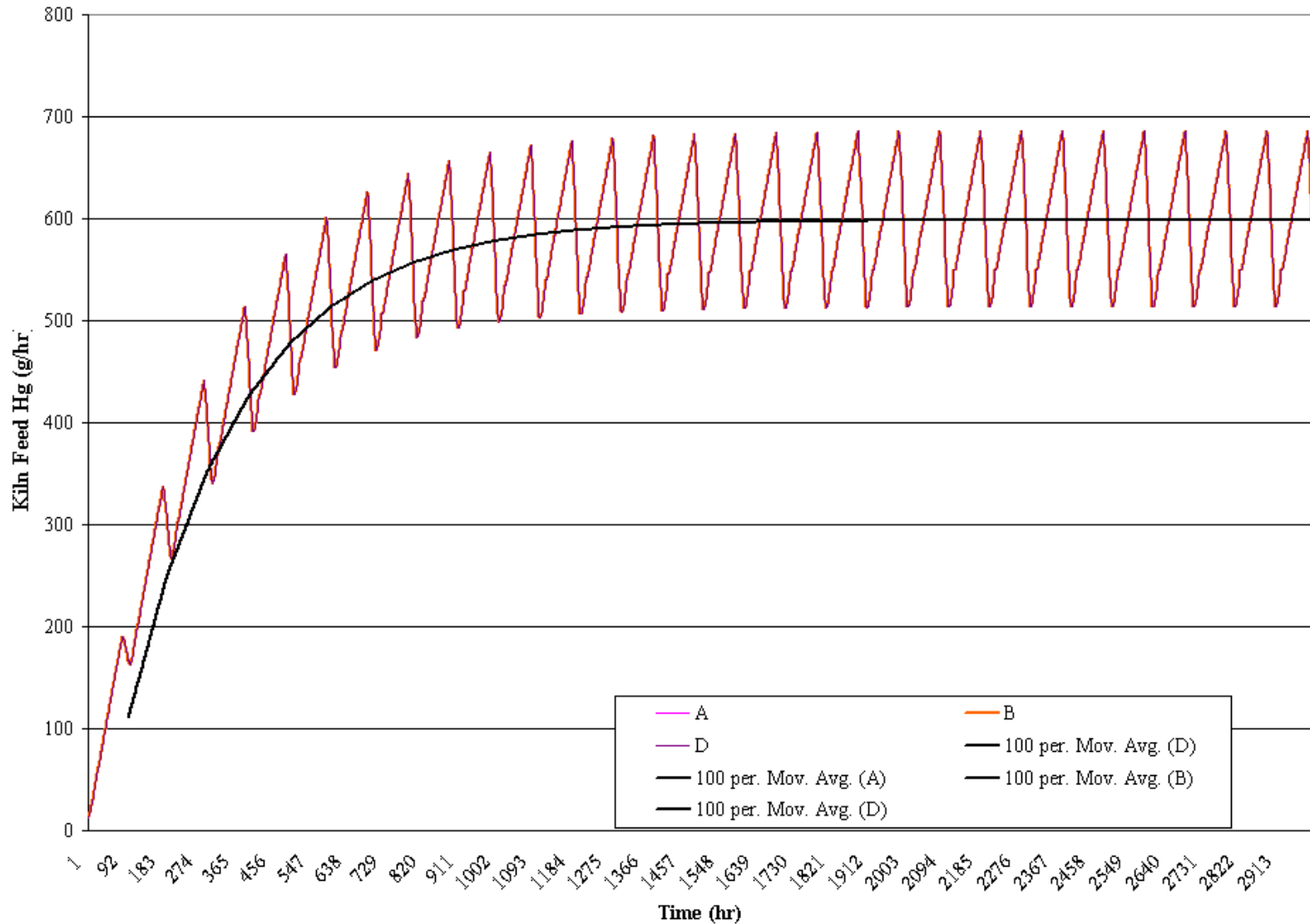
- SO_x
- NO_x
- $\text{PM}_{2.5}$
- Condensibles

Precalciner Kiln



Schematic Flow Diagram of a Rotary Cement Kiln and Suspension Preheater with Flash Furnace

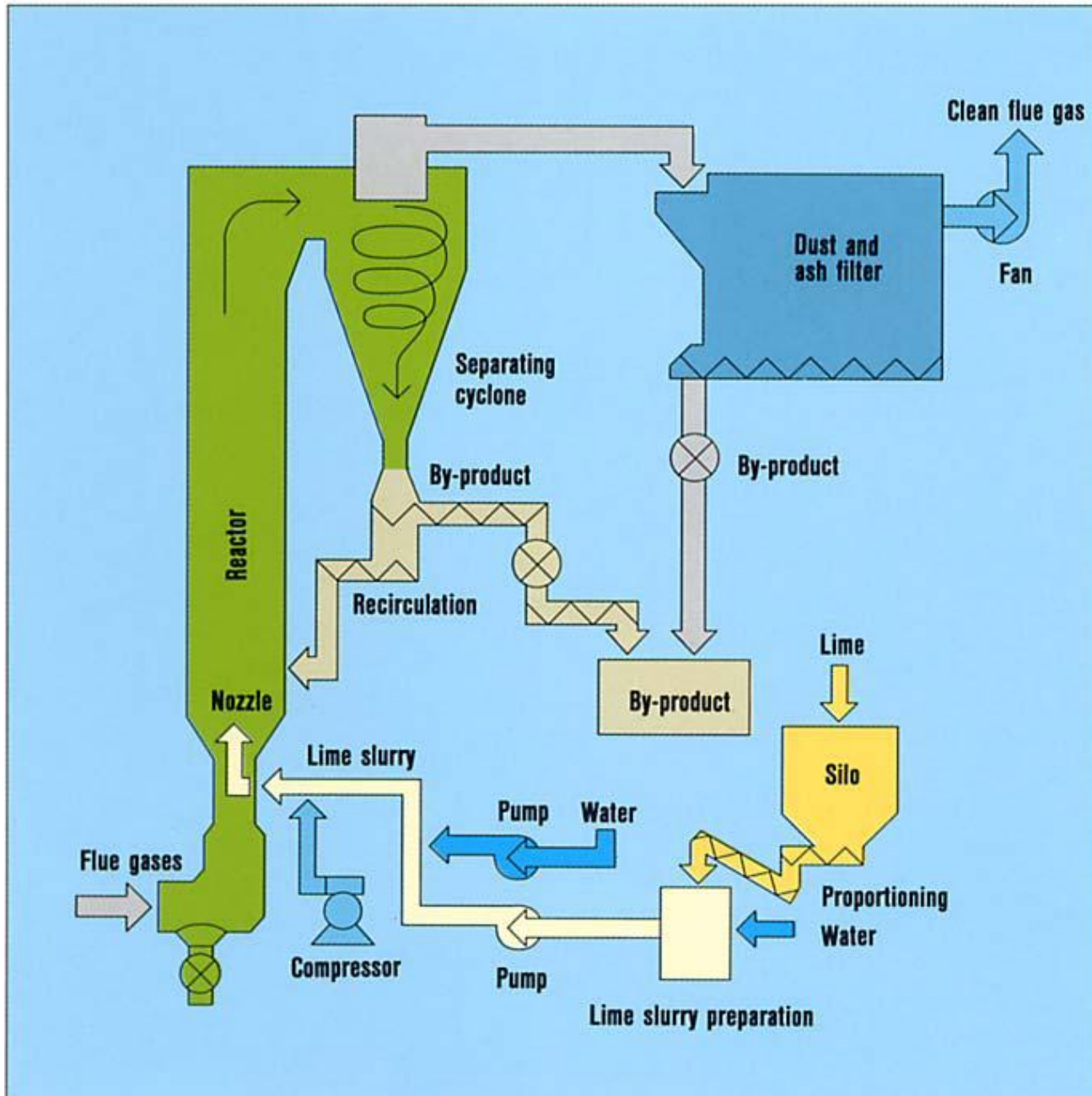
Cement Kiln Modeled Hg Feed Rate



Circulating Fluidized Bed Adsorber (CFBA)

- A type of semi-dry scrubber
 - Lime, ash, water injected
 - Particulate captured and recirculated using cyclone or similar capture device
- Current Uses
 - Incinerators
 - Power plants

FLS Gas Suspension Adsorber – Example of CFBA



Potential Control Levels

- SO_x 95 – 98%
- Fine Particulate & Condensibles
50 – 90% improvement
- Hg 50 – 95%
- HCl 95 – 98%
- THC 50 – 90%

Potential Enhancements

- Activated carbon – no!
- Mercury oxidation agents
 - Prior to CFBA
 - In CFBA
- Chlorides
- Impact of / on SNCR systems