

MACT Proposed Guidelines and Long-Term Capital Planning

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Thank you for joining me



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Agenda

1. Timeline
2. Proposed Regulations
3. Deadlines for Promulgation
4. Potential Industry Impacts
5. Long Term Capital Planning
6. Potential Existing Facility Upgrades
7. Thoughts and Takeaways
8. Questions

Timeline

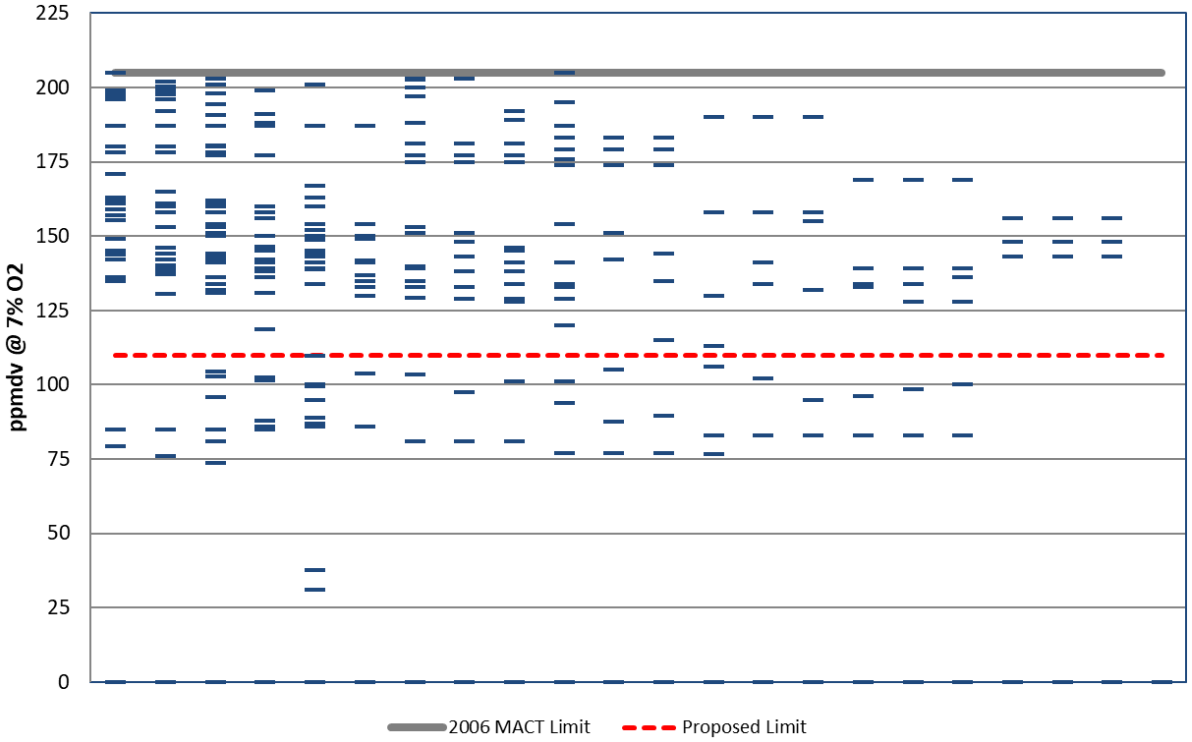

May 10, 2006
Last EPA Update
2014
Preliminary Health Risk Modeling
Jan 23, 2024
Standards of Performance for New Sources and EG for Existing Sources
LMWC Voluntary Remand Response and 5-Year Review
Feb 7, 2024
EPA held a virtual public hearing on its Proposed Amendments to Large Municipal Waste Combustor Emission Standards
Mar 25, 2024
Comments were due
November 2024
Expected release of final rules
2025
States required to adopt new rules
2026-2028
Anticipated Facility Compliance

Existing Units Proposed Regulations

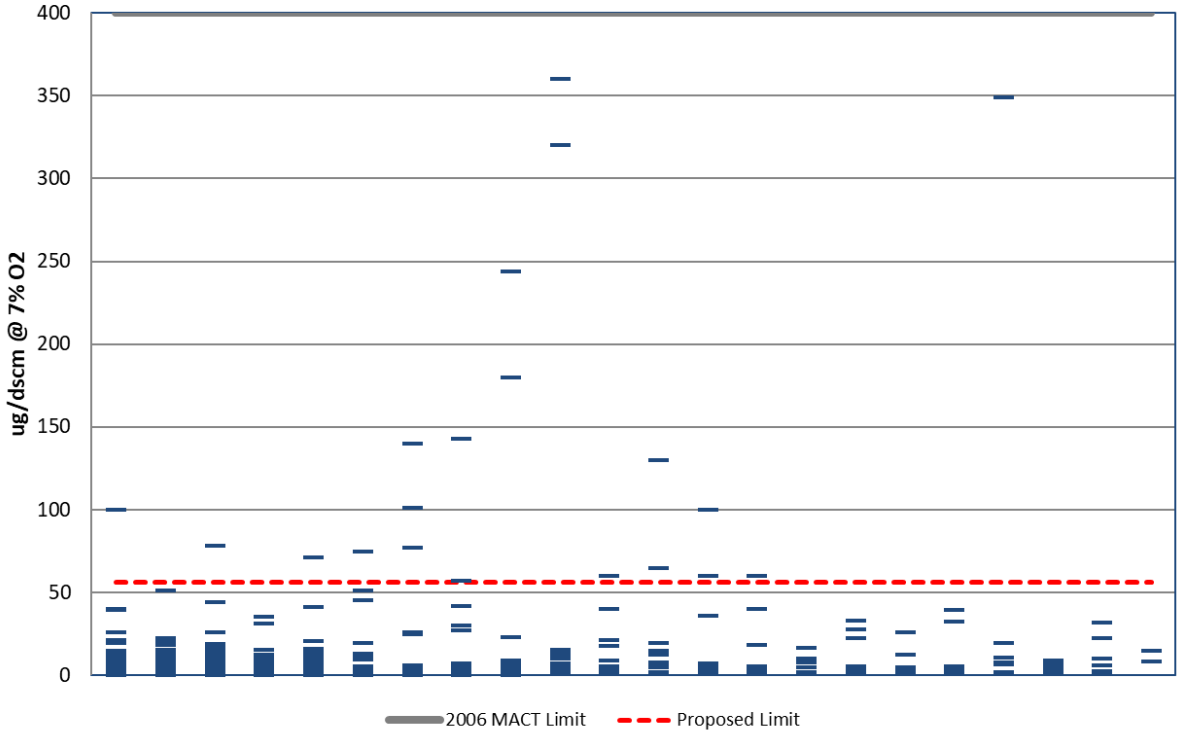
Pollutant	Units All @ 7% O_2	2006 EG (Current) Limits	Proposed Subcategory EG Limits				
			Mass Burn Waterwall	Mass Burn Rotary	RDF Stoker	RDF with Coal	RDF Fluidized Bed
Cadmium	ug/dscm	35	1.5	4.3% of existing limit			
Lead	ug/dscm	400	56	14% of existing limit			
Particulate	mg/dscm	25	7.4	30% of existing limit			
Mercury	ug/dscm	50	12	24% of existing limit			
Dioxins/furans	ng/dscm	30/35[b]	7.2	24% of existing baghouse limit			
HCl	ppmdv	29	13	45% of existing limit			
SO_2	ppmdv	29	20	69% of existing limit			
NOx[a]	ppmdv	180 – 250[c]	110	54% of existing mass burn waterwall limit			
CO	ppmdv	50 – 250[d]	100[e]	110	110	250[e]	110

a. NOx limit is based on the "Good Neighbor Rule" imposed on certain plants last year. Facilities with SCR (West Palm Beach) are subject to a limit of 50 ppmdv @ 7% O_2
b. 30 ng/dscm is for baghouse equipped units and 35 ng/dscm is for ESP equipped units
c. Current range – MBWW 205, MB Rotary 210, RDF 250, RDF Fluidized bed 180 (all ppmdv @ 7% O_2
d. Current range - MBWW 100, MB Rotary 250, RDF Stoker 200, RDF Spreader Stoker with Coal 250, RDF Fluidized bed 200, Modular starved air or excess air 50 (all ppmdv @ 7% O_2 (Note there are no known RDF spreader stoker units with coal in US and modular units are not applicable to this rule unless over 250 tpd.
e. Reevaluated MACT floor limit was less stringent than the current limit, so there is no proposed change.

Potential Impacts

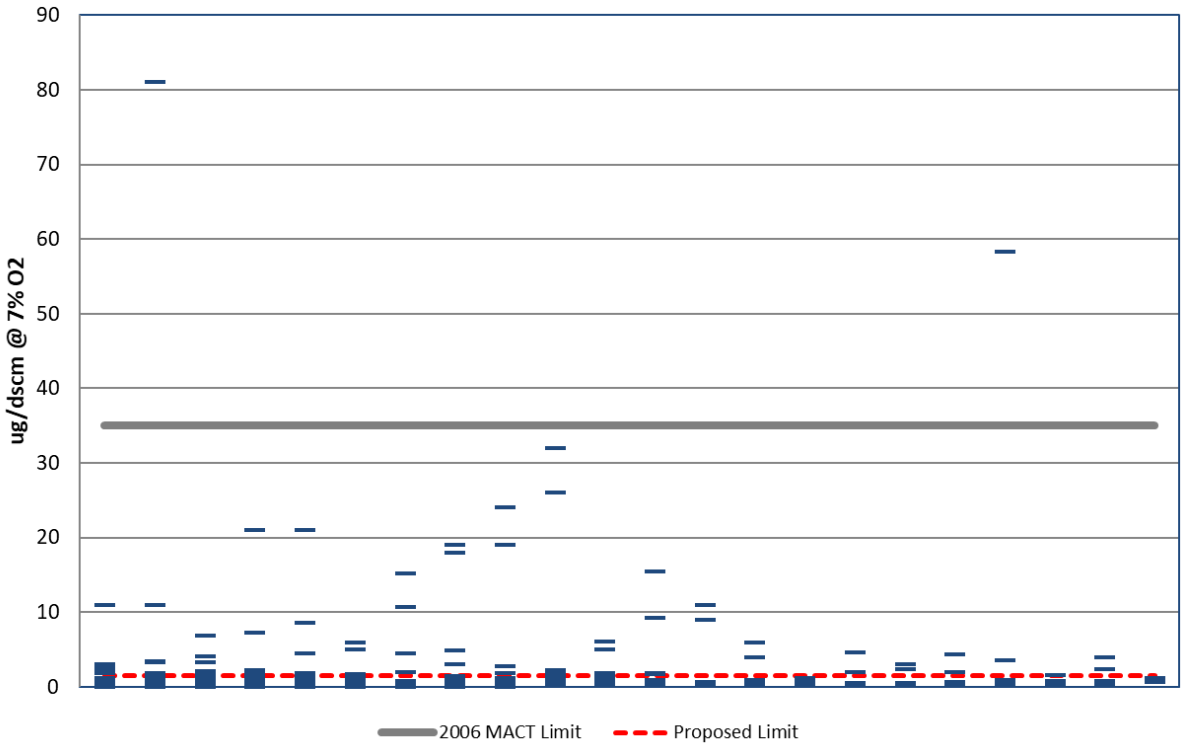


NOx

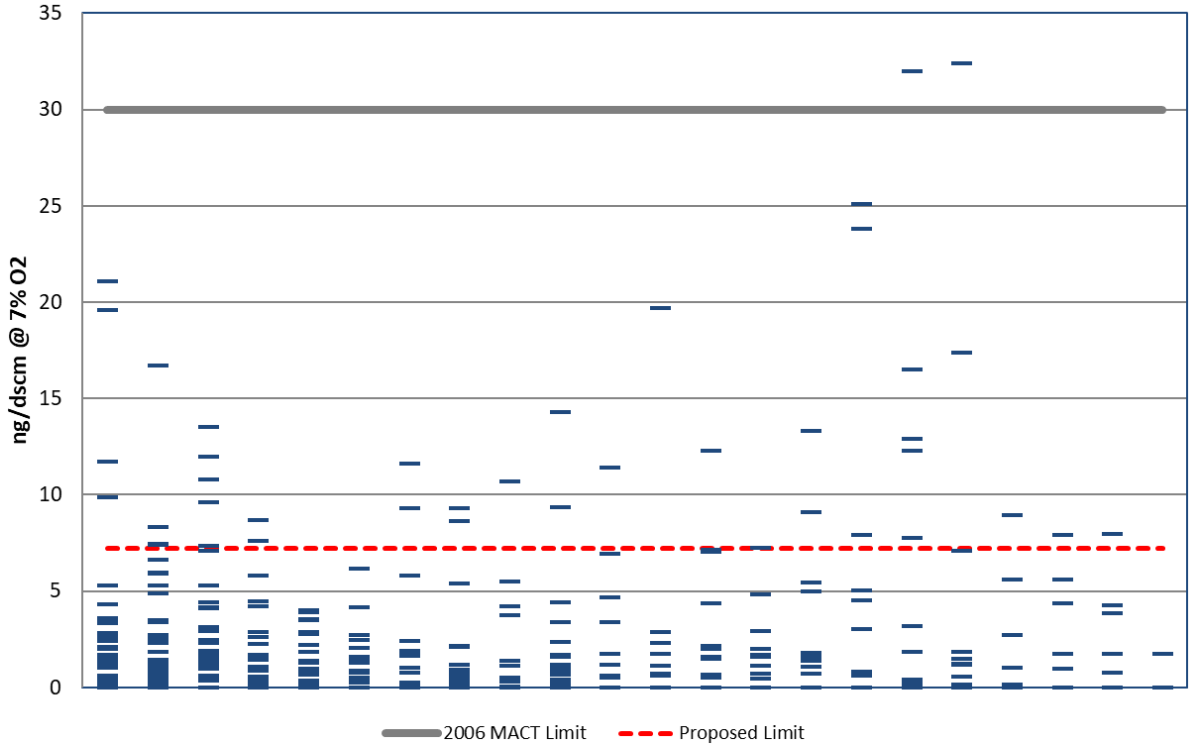


Lead

Potential Impacts



Cadmium



Dioxins/Furans

Other Emission Limits Related Provisions

- Removal of Reduction Limits and NOx Emissions Averaging
- CEMS Data Availability Requirements Will be Updated
- Removal of startup, shutdown and malfunction (SSM) exclusions and exceptions and significantly revise monitoring provisions
- Recordkeeping and electronic notification and reporting requirements submit electronic copies through the EPA’s Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI)
- Reduced Dioxin Testing

Long Term Capital Planning

Existing Facilities

NOx
- Enhanced SNCR
- May be an issue for rotary or RDF plants

Acid gases
- Additional Lime
- Upgrade slaker

SO_2
- CEMS exceedances may result due to no SSM provisions and no emission reduction allowance

HCl
- No emission reduction option

Metals
- Lead: Improve baghouse
- Cadmium: some plants may be challenged and need better PM control (well less than the proposed PM limit) could be an issue in some cases
- Mercury: added carbon injection could be a rare issue due to a testing spike

PM
- Good baghouse performance

Dioxin
- Good PM and added carbon injection
  - could be some increased issues due to increased testing

CO
- SSM issues

CEMS
- May need increased redundancy but even fully redundant may not avoid all compliance issues

Long Term Capital Planning

New Facilities

NOx	Acid gases	Metals	PM	Dioxin	CO	CEMS
SCR	Recirculating baghouse and scrubbing system	Recirculating baghouse and scrubbing system	Recirculating baghouse and scrubbing system	Recirculating baghouse and scrubbing system & carbon injection	Uncertain	May need increased redundancy but even fully redundant may not avoid all compliance issues

Potential Existing Facility Upgrades

Existing Facility Controls	Pollutant	Facility Upgrade
• No Control or SNCR System	NOx	• Dynamic SNCR or SCR System
• Electrostatic Precipitator (ESP)	PM & Metals	• Addition of polishing baghouse or complete upgrade from ESP to baghouse
• Scrubber and baghouse	Acid Gases (SO_2 & HCl)	• Recirculating Baghouse and Scrubbing System

Thoughts and Takeaways

QUESTIONS

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