Developments of Maximum Achievable Technology (MACT) Program USEPA

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Win-Waste Innovations (Wheelabrator Technologies)

Large MWC MACT

History of MACT-How Did We Get Here?

- December 1995 first MACT NSPS/Emission Guidelines promulgated by USEPA
  - Feb 1991, Subpart Ea/Ca promulgated (Subpart Ea applied to newer MWCs)
- December 2000 MACT fully implemented
  - Significant capital cost expenditures by counties, municipalities and industry to meet MACT (Fabric Filters, SNCR, Carbon injection)
  - Significant increase in O&M costs (reagents, testing/monitoring, ASME certified operators, reporting)
  - From 1990 baseline: dioxin emissions reduced 99%, metal emissions reduced 93%, and acid gases reduced 91%
- May 2006 EPA promulgates revisions to 1995 standards-1st 5-year review required by CAA
  - Revised limits for cadmium, lead, mercury, particulate, and dioxins, other minor revisions
- July 2006 petition for reconsideration and judicial challenge filed to 2006 MACT revisions
  - EPA erred in basing 1995 MACT in part on state permit limits not actual performance
- November 2007 EPA files motion for voluntary remand of 2006 MACT revisions
- February 2008 EPA's voluntary remand to 2006 revisions granted by the court.

Large MWC MACT

History of MACT-How Did We Get Here?

- 2008 EPA data request sent via states for 2000-2008 data
  - Completed April 2008
- 2009-2014 periodic communication with EPA on status of review/remand-no EPA activity
- 2014-2016 EPA undertakes Residual Risk and Technology Review (RTR)
  - Combined 2nd 5-year review with 1st 8-year RTR
  - Data request for air modeling parameters 2000-2008
  - Several meetings and discussions with EPA as RTR progressed
  - Responded to several EPA requests for additional data/information
  - Significant progress made and EPA close to completing residual risk review-mercury being the last gate to get through
  - Began discussions on technology review and addressing elimination of S/S/M provisions- **No activity after 2016**
  - No information on residual risk review status-(wonder where that lies?)

Large MWC MACT

History of MACT-How Did We Get Here?

- Dec 2021/Jan 2022 Environmental Groups file suit to force EPA to revise MACT standards (East Yard case)
  - emissions from LMWC facilities were harming their communities
- Dec 2022-Non-regulatory docket established as prequel to revised MACT proposal
- March 2023 UMRA briefing to municipalities/public entities impacted by revised MACT
  - Many municipalities unaware of briefing
  - Laid out 3 options with capital costs of $31M, $154M and $661M
  - 1) revised floors, 2) revised floors + beyond for NOx only and, 3) revised floors + beyond for all limits
  - Requested comments and input from stakeholders but… handicapped
  - EPA would not share any information regarding development of 3 options and underlying costs (FOIA requests dismissed)
- June 2023 consent decree (East Yard case) proposed In Federal Register establishing dates for revised MACT
  - By Dec 31, 2023, sign proposed rule and by Nov 30, 2024 sign final rule
  - Consent Decree provided for modification of deadlines and delay if EPA appropriations lacking

Large MWC MACT

History of MACT-How Did We Get Here?

- July 2023 WTEA files comments on proposed consent decree and 60-day notice to file Residual Risk(RR) deadline lawsuit against EPA
  - EPA should have completed 8-year RR and should do so when revising MACT standards
- Sept 2023 WTEA deadline lawsuit filed
- Dec 20, 2023 revised MACT rule signed by EPA Administrator
- Jan 23, 2024, MACT rule proposed in FR with 60-day comment period (March 25, 2024)
  - Didn't even include revised regulations
  - EPA rejected 30-day extension of comment period-bound by consent decree schedule
- March 2023 WTEA deadline lawsuit dismissed-didn't have standing (couldn't establish harm) and moot (revised MACT proposed in January
  - Could have amended lawsuit to have EPA conduct RR after revised MACT but standing remained a concern

Large MWC MACT

History of MACT-How Did We Get Here?

- March 2023 WTEA comments submitted
  - 1990-1995 data set and with UPL calculations using revised variability from this data set-over 1600 test runs from this time frame
  - AECOM residual risk review
  - Comments to Regulatory Impact Analysis (RIA)
  - New MWC CO limit unachievable
  - 100% CEMS availability requirement unachievable
  - Existing MWC NOx limit (MBWW) inappropriate (110 ppm derived from GNP, ASNCR, proprietary technology)
  - April and June 2024 WTEA submitted additional data and information on appropriately addressing variability at behest of EPA
  - EPA can/may consider this additional information submitted after comment period closed
  - Meetings and discussions with EPA OAQPS on our concerns with rulemaking lack of appropriate variability analysis

Large MWC MACT

Proposed Emission Guidelines for Existing MWCs

Pollutant	Units at 7%O2	EPA Exisitng Guidelines	EPA Proposed Guidelines	% Reduction
Nitrogen Oxide (NOx)	ppm	205 (150)	**110**	27%
Particulate (PM)	mg/dscm	25	**7.4**	70%
Sulfur Dioxide (SO2)	ppm	29 or 75% Removal	**20 (no removal)**	31%
Hydrogen Chloride (HCl)	ppm	29 or 95% Removal	**13 (no removal)**	-55%
Carbon Monoxide (CO)	ppm	100	**100**	0%
Mercury (Hg)	µg/dscm	50 (28) or 85% Removal	**12**	57%
Cadmium (Cd)	µg/dscm	35	**1.5**	96%
Lead (Pb)	µg/dscm	400	**56**	86%
Dioxin	ng /dscm	30	**7.2**	76%

- Used 2000-2009 data “adjusted” to1995 performance levels
  - Attempt to Avoid MACT on MACT
  - Precedent set by HMIWI MACT floor reset but many LMWCs remain operational
- Lowers limits across the board with exception of CO
  - Lower RDF CO limit
  - CEMS based limits: CO, SO2 based on average of annual maximum values-no variability analyses
  - PM, Cd. Pb, Hg and HCl based on annual averages-reduces variability
- NOx limit
  - MBWW NOx Floor 227 ppm based on maximum values adjusted to 1990-95 performance
  - Revised floor 205 ppm = current limit.
  - Beyond the floor limit 110 ppm based on Good Neighbor Plan (OTC white paper)
  - Based on ASNCR and Covanta Low NOx (LN$^{TM)}$ Technology

Large MWC MACT Overview

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- Alternative reduction standards for SO2, HCl and mercury eliminated
  - Reduction alternatives were key component for addressing MSW and APC performance variability
  - Basis for elimination: little removal data and to avoid disconnect with concentration-based limits derived from annual average of maximum values
  - “level” the playing field for protecting community health around LMWC facilities
- Eliminates exemptions for startup, shutdown and malfunction periods
  - Can use uncorrected or stack O2 based ppm concentrations during startups and shutdowns
  - Proposes to include warm up periods in compliance averages
  - Proposes 30-day rolling averages in lieu of 4-hour and 24-hour block averages
  - 30-day consistent with CISWI (129 standards), MATS and ICI Boiler NESHAPs (Subpart DDDDD)

Proposed Large MWC MACT Summary

Standards for New MWCs-Applies to new MWCs after Jan 23, 2024

Pollutant	Units at 7%O2	EPA Exisitng Standard	EPA Proposed Standard	% Reduction	West Palm Beach	Pasco FL (4th Unit)
Nitrogen Oxide (NOx)	ppm	150	**50**	27%	50	110
Particulate (PM)	mg/dscm	12	**1.8**	85%	12	12
Sulfur Dioxide (SO2)	ppm	30 or 80% Removal	**14 (no removal)**	31%	24	24
Hydrogen Chloride (HCl)	ppm	25 or 95% Removal	**7.8**	-55%	20	20
Carbon Monoxide (CO)	ppm	100	**16**	84%	100	100
Mercury (Hg)	µg/dscm	50 (28) or 85% Removal	**6.1**	78%	25	50
Cadmium (Cd)	µg/dscm	10	**1.1**	89%	10	10
Lead (Pb)	µg/dscm	140	**13**	91%	125	140
Dioxin	ng /dscm	13	**1.8**	86%	10	7.5

- Proposed limits over 90% lower than BACT limits at most recent LMWC facility in West Palm Beach FLA
  - (West Palm 2 operational 2015)
- CO limit 16 ppm7%
  - Unachievable-Excludes S/S/M events
  - Based on 1 LMWC at facility with 3 identical LMWCs
  - Used average of maximum values with no variability analysis
- NOx limit based on SCR at West Palm Beach
  - PSD netting for NOx emissions in facility expansions eliminated
  - Reduces ability to add capacity to meet growing MSW management needs
- SO2 limit-top performer used to set 14 ppm limit-didn't meet limit 50% of time
  - 99.7% UPL = 26 ppm for all reported annual maximum values

Large MWC MACT

Overall Summary

- EPA should have conducted residual risk (RR) review with MACT revisions
  - Would have directly addressed potential “harm” which was basis of East Yard lawsuits
  - RR conducted by AECOM for WTEA, and submitted with comments
- EPA should have preceded proposed standards with data collection activity
  - Instead, gaps filled using permits, permit applications, test reports
  - Data limited to years 2000-2007 from previous MACT undertakings
  - Avoiding MACT on MACT paramount but derivation of limits did not follow MACT precedent
  - Needed 1990-1995 data and data was available-only had to ask as was the case in previous MACT undertakings
- 1995 performance levels not established appropriately but used 2000-2008 data
  - 1995 and 2009 control efficiencies the same for most pollutants.
  - PM and metals 1995 and 2009 fabric filter control efficiencies the same at 99%-no data correction
  - If control efficiencies were the same, then why weren’t 1995 floors appropriate?
  - If 2009 fabric filter efficiencies at 99.5% then MACT limits would double
  - SO2 control efficiency the same 1995 and 2009, if assume 75% for 1995, then MACT floor 32 ppm
- Regulatory Impact Analysis (RIA) should be based on LMWC source group-not derived from surrogate from RIA conducted for pulp and paper industry

Large MWC MACT

Overall Summary

- MACT standards did not appropriately account for variability (if at all)
  - MSW fuel variability, local, regional and state level
  - Emission control performance-elimination of alternative removal for HCl, SO2 and mercury
  - Use of the average of maximum annual reported values for CEMS based limits (SO2, CO) without variability analysis
  - Use of annual averages for UPL calculation for stack test-based emission limits (PM, Cd, Pb, Hg, dioxins, HCl)
  - n = number of individual test runs (not annual averages), m = number of runs to determine compliance (3-run annual avg)

$$UPL = \bar{x} + t(0.99, n-1) \times \sqrt{s^2 \times \left(\frac{1}{n} + \frac{1}{m}\right)}$$

- Regulatory Impact Analysis (RIA) should be based on LMWC source group-not derived from surrogate from RIA conducted for pulp and paper industry

Large MWC MACT

AECOM Residual Risk Review

- AECOM completed residual risk review in accordance with latest EPA protocols
- RR review took approximately 4 months-EPA had time to conduct their own RR (2014 effort?)
- Received source data from 54 LMWC facilities
  - Actual emissions for the most recently available five-year period (2018-2022) for Cd, Hg, Pb, dioxin/furans (as 2,3,7,8-TCDD toxic equivalent), and HCl.
  - Allowable/potential mass emissions estimated using 40 CFR 60 Subpart Cb Emission Guidelines limits
  - Representative stack parameters – location, release height, diameter, exit temperature and velocity/flow rate.
- Evaluated inhalation risks using the Human Exposure Model Version 4.2 (HEM4).
  - uses AERMOD for pollutant dispersion and estimates individual human exposures and health risks.
- Evaluated multi-pathway risks using a multi-tiered approach with three (3) levels of screening (Tiers 1-3), and a refined 4th level (Tier 4 site-specific):
- Multipathway Tier 4 used EPA's TRIMFaTE at "worst case" LMWC facility
  - Total Risk Integrated Methodology(developed for RR)
  - Uses refined air modeling (AERMOD) for dispersion and deposition rates

Large MWC MACT

AECOM Residual Risk Review Results

- Results from the inhalation risk analysis (HEM4)
  - Lifetime cancer risk estimated at less than 1 in 1 million (most exposed individual)
  - For non-cancer adverse health effects, the chronic HI and acute HQ were both < 1 for all facilities

Risk Parameter	Actual Emissions Risk	Allowable Emissions Risk
Maximum Cancer Risk	0.020 in 1 million	0.323 in 1 million
Maximum Chronic Hazard Index (HI)	0.004	0.018
Maximum Acute Hazard Quotient (HQ)	0.012	0.024

- Multi-Pathway Risk Results
  - Worst-case facility that had the highest potential for public health impacts, for all evaluated exposure scenarios including subsistence farmer, subsistence fisher, rural gardener, and urban gardener, are below the risk thresholds of 1 in 1 million for cancer risk and HI/HQ of 1 for non-cancer risk.

Risk Parameter	Maximum Site-Specific Analysis Risk Value	Primary Contributing HAP	Maximum Receptor Scenario
Total Cancer Risk	0.26 in 1 million	Dioxin/Furans (99.3%)	Subsistence Fisher
Hazard Index	0.96	Mercury (99.5%)	Subsistence Fisher

Large MWC MACT

Use of the Average Highest CEMS Values-Example SO2 EG-limit

- Must analyze variability in reported maximum values-EPA used average of averages of top 12% performers (16 MWC units)
- Of 113 max values from top 12% MWCs, 47 values are above the 20 ppm MACT floor, that's 42% failure rate
- 99.7% UPL (normally used for CEMS based MACT floors) would be 30 ppm using all 113 max values

Facility Name	1990 APCD	1990 Control Efficiency	2009 APCD	2009 Control Efficiency	Data Points	Mean	Variability-UPL	
Commerce Refuse-to-Energy / Unit #1	SD/FF/SNCR	0.85	SD/FF/SNCR	0.85	8	14.0		
Bridgeport, L.P. / Unit #2	SD/FF	0.85	SD/FF/CI/SNCR	0.85	6	14.5		
Marion Co. WTE / Unit #2	SD/FF	0.85	SD/FF/CI/SNCR	0.85	8	16.1		
Bridgeport, L.P. / Unit #3	SD/FF	0.85	SD/FF/CI/SNCR	0.85	6	16.3		
Bridgeport, L.P. / Unit #1	SD/FF	0.85	SD/FF/CI/SNCR	0.85	6	16.8		
Stanislaus (Modesto) / Unit #2	SD/FF/SNCR	0.85	SD/FF/CI/SNCR	0.85	6	16.8		
Long Beach SERRF / Unit #1	SD/FF/SNCR	0.85	SD/FF/SNCR	0.85	7	17.2		
Indianapolis RRF / Unit #3	SD/FF	0.85	SD/FF/CI/SNCR	0.85	7	18.0		
Marion Co. WTE / Unit #1	SD/FF	0.85	SD/FF/CI/SNCR	0.85	8	19.4		
Stanislaus (Modesto) / Unit #1	SD/FF/SNCR	0.85	SD/FF/CI/SNCR	0.85	6	20.7		
Penobscot Energy Recovery / Units 1 and 2 (Shared Stack	SD/FF	0.85	SD/FF	0.85	8	21.9		
York County Solid Waste and Refuse Authority / Unit #3	SD/FF	0.85	SD/FF/CI	0.85	8	22.1		
Detroit RRF / Unit #1	SD/FF	0.85	SD/FF	0.85	7	22.1	**count**	**16**
Long Beach SERRF / Unit #2	SD/FF/SNCR	0.85	SD/FF/SNCR	0.85	7	22.9	**mean**	**19.3**
Fairfax I-95 Energy RRF / Unit #4	SD/FF	0.85	SD/FF/CI/SNCR	0.85	7	24.0	**Stddev**	**3.4**
York County Solid Waste and Refuse Authority / Unit #1	SD/FF	0.85	SD/FF/CI	0.85	8	24.4	**99.7%**	**30.2**

Large MWC MACT

Use 1990-1995 Data Set to Better Reflect Variability (Included in WTEA Comments)

- Calculate an adjustment factor based on comparisons of actual 1990-95 data relative to 2000-2008 data for each unit
- Where EPA adjusted data based on changes in APCD, the actual data was evaluated relative to the EPA's change in control efficiency

Pollutant	Adjusted APCD Type	EPA Efficiency	Avg. Performance	Baseline APCD Type	EPA Efficiency	Avg. Performance	Adjustment to Top 12%
PM	SD/FF	99%	5.9	SD/FF	99%	4.3	1.36
Cd	SD/FF	99%	2.2	SD/FF	99%	1.1	1.98
Pb	SD/FF	99%	9.9	SD/FF	99%	13.9	1.0
HCl	SD/FF	95%	19.7	SD/FF	95%	10.1	1.94
PCDD/F	SD/FF	58%	11.8	SD/FF/CI	90%	2.73	1.03
Hg	ESP, SD/FF, DSI/FF	90%	28.57	SD/FF/CI	90%	9.04	3.16

Pollutant	Units (@ 7% O_2)	2006 EG (current) limit	EPA January 2024 Proposal	% Reduction from Current EG		EG Calculations (using data for all units operating in 1990) After Control Adjustment		% Reduction from Current EG
						Calculation Result	***Recalculated MACT Floor***	
Cadmium (Cd)	ug/dscm	35	**1.5**	96%		3.6	**4**	**89%**
Lead (Pb)	ug/dscm	400	**56**	86%		72.1	**72**	**82%**
Particulate matter (PM)	mg/dscm	25	**7.4**	70%		12.8	**13**	**48%**
Mercury (Hg)	ug/dscm	50	**12**	76%		105.7	**50**	**0%**
Dioxin/furan (CDD/CDF)	ng/dscm	30	**7.2**	76%		18.5	**19**	**37%**
Hydrogen chloride (HCl)	ppmdv	29	**13**	55%		27.1	**27**	**7%**

Large MWC MACT

New LMWC CO Limit

- Based on average of reported maximum values **which excluded** startup/shutdown/malfunction periods.
- Not achieved by newest LMWC- West Palm Beach- & HZI designer/builder of MWCs say not achievable

Facility Name	Pollutant	Test Type	Year	Run No	Raw Data	Combustor Subcategory	Variability Analysis	
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2004	1	8.9	MB/WW		
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2002	1	11.1	MB/WW	Unit 2	
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2001	1	11.9	MB/WW	count	6
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2003	1	23	MB/WW	mean	15.7
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2005	1	13.8	MB/WW	Stddev	6.77
Bridgeport, L.P. / Unit #2	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2006	1	25.2	MB/WW	99.7%	47
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2003	1	20.5	MB/WW		
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2001	1	20.7	MB/WW		
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2004	1	6.8	MB/WW		
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2005	1	9.8	MB/WW		
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2002	1	23.1	MB/WW		
Bridgeport, L.P. / Unit #1	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2006	1	32.5	MB/WW		
				Mean	19			
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2004	1	8.7	MB/WW		
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2002	1	25.9	MB/WW		
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2005	1	18	MB/WW	All 3 Units	
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2003	1	18.7	MB/WW	count	18
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2001	1	20.7	MB/WW	mean	21.7
Bridgeport, L.P. / Unit #3	Carbon Monoxide (CO)3	Highest reported value (ppmv @ 7% O2)	2006	1	91.1	MB/WW	Stddev	18.7
				Mean	30.5		99.7%	80.4

Large MWC MACT

There Is Nothing That Can Substitute for Proper Data Collection in Standards Development

- Wheelabrator Technologies Inc. comments to the 2005 proposed LMWC MACT revisions provided a summary of 2005 SO2 data from the three (3) LMWCs at their Westchester NY WTE facility retrofit with SD/FF to meet the 1995 EGs.
- The analysis illustrates that the use of annual maximum values without properly accounting for variability will result in a MACT standard not achieved in practice
- The compliance rate with respect to the 20-ppm proposed MACT EG limit was just 79% for all three LMWCs in 2005.
- The 87% average SO2 control efficiency is close to the maximum SO2 control range for SD/FF in EPA's APCDs data base.
- If SO2 variability was properly accounted for using the 99.7% UPL the achievable limit would be 32 ppm based on this data set.

Westchester 2005 SO2 Summary

Plant	Reporting		Period:	Unit	Count No. of days	Statistic	Geometric SO2 Outlet (PPMDC7)
Westchester	1/1/2005	to	12/31/2005	1-3	978	Mean	15.9
SDA/FF						Std Deviation	6.0
						99.7% UPL	32.3
						Count > 20 ppm	203
						Mean Removal %	87
						Compliance %	79%

Large MWC MACT

Characterization of Variability

- EPA's variability analysis was insufficient in assessing the variability of post recycled MSW processed by LMWCs.
- EPA received data from WTEA during the comment period to supplement its consideration of final standards.
- The EPA's calculated uncontrolled emission values for SO2, Hg and HCl have much smaller ranges, averages, and variances than actual measured values from Reworld's facilities in 2000 – 2008 and 2021 – 2023
- Because these values represent emission levels prior to any air pollution control devices (APCDs), they provide a direct measure of variability in the incoming MSW. (REWORLD)

Comparison of Inlet HCl Variability (ppmdv7)

	USEPA Adj 1990-1995 Uncontrolled HCl, Top 12%	Reworld HCl Inlet, 2000 - 2008	Reworld HCl Inlet, 2021-2023
Low	13	164	67
High	410	1,266	1,449
Average	103	638	578
Variance	4,495	21,863	30,124

Large MWC MACT

Regulatory Impact Analysis (RIA)

- Review of RIA conducted by Sanborn Head (HR expert)
- RIA based on interpolation from pulp and paper industry
  - Contrary to EPA's claim LMWCs do not have similar geographic patterns of criteria air pollutants (CAPs)
  - There are significant uncertainties regarding the general methodologies that EPA used to estimate health benefits from CAP emissions.
  - MWC emissions do not contribute significantly to ambient air concentrations of CAPs
- Lacks clarity on details-no sample calculations
- Relied on BenMAP (Benefits Mapping and Analysis Program)
  - Simulates SO2 and NOx dispersion but not validated verses AERMOD and not LMWC source specific
  - Most health benefits associated with reduction of SO2 which transforms to "soluble" atmospheric sulfate as component of PM2.5
  - Sulfate not relevant to PM2.5 health impacts (sulfate salts used to deliver asthma medications)
- Extrapolation from Pulp and Paper industry is just wrong given significant impacts on LMWC "community"
  - Pulp and paper geographic emission patterns significantly different than for LMWCs-LMWCs also have lower emissions
  - EPA overestimates potential emission reductions-used highest annual CEMS reading not average-over predicts dose response
  - RIA replete with errors suggesting hurried effort

Large MWC MACT

Implementation Schedule

- November 2024 Final MACT NSPS/Emission Guidelines Signed-FR in December 2024?
- December 2025 States must submit plans to implement Emission Guidelines
  - States can be more stringent than EPA
- June 2026 EPA approves state plans (6-months after state submittal)
- Must comply with state plan within 1-3 years after EPA approves state plan-June 2029
  - 1- 3 years after issuance of permit modification if required
  - 1-3 years after approval of state if permit modification not required
- If state plan not submitted/approved, EPA can issue Federal Implementation Plan (FIP)
  - EPA directly enforces the EGs through the FIP or state can receive delegation to enforce FIP (NJ)
- Petition for Reconsideration must be filed 60 days after final rule-
  - EPA has no deadline to act on reconsideration petition
- Judicial challenge also must be filed within 60 days of final rule
  - Rule could be stayed during judicial challenge