

Control of Mercury Emissions from Utilities—the State and Local Agency Perspective

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What I am Going to Cover

- ❑ General Principles
- ❑ History of the issue
 - ❑ State/Local Agency interest
 - ❑ EPA actions
- ❑ State/Local Agency response
- ❑ State rules for mercury emissions
- ❑ Where do we go from here?

Clean Air Act

Findings and Purposes

- Section 101(a) The Congress finds---
 - (3) that air pollution prevention (that is the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments

Certainty

- ❑ Industry wants certainty that controls will be sufficient without a need for further controls down the road
- ❑ The public wants certainty that the air they breathe, the water they drink, and the food they eat is safe
- ❑ The only way to provide the certainty desired is to control utilities to levels which represent Best Available Control Technology

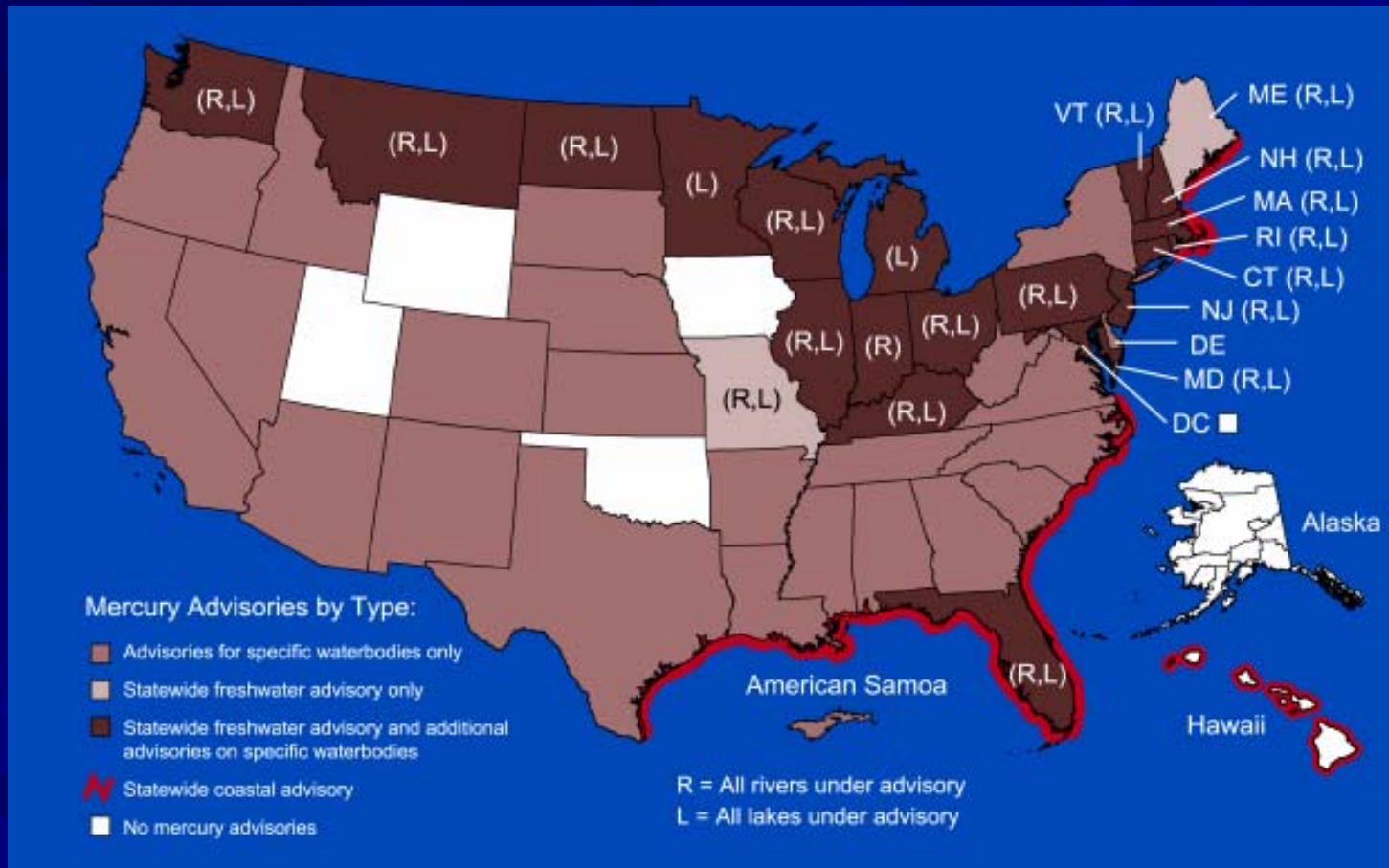
Mercury is a Serious Health Problem

- ❑ Powerful neurotoxin that accumulates in the food chain
- ❑ As little as 1/70th of a teaspoon can contaminate all the fish in a 25-acre lake
- ❑ Can cause damage to brain and nervous system, neurological disorders, delayed development, learning disabilities
- ❑ Especially harmful to children and developing fetuses
- ❑ 6% - 15% of women of childbearing age may be exposed to mercury above “safe” level
- ❑ Emerging data show correlation between heart attacks in men and mercury exposure

Mercury is a Pervasive Problem in the U.S.

- ❑ Coal-fired power plants are largest source of mercury air emissions = 48 tons of mercury per year
- ❑ 45 states issued fish consumption advisories for mercury
- ❑ Mercury concentrations and deposition levels are similar in the east and west

States with Mercury Fish Consumption Advisories (2002)

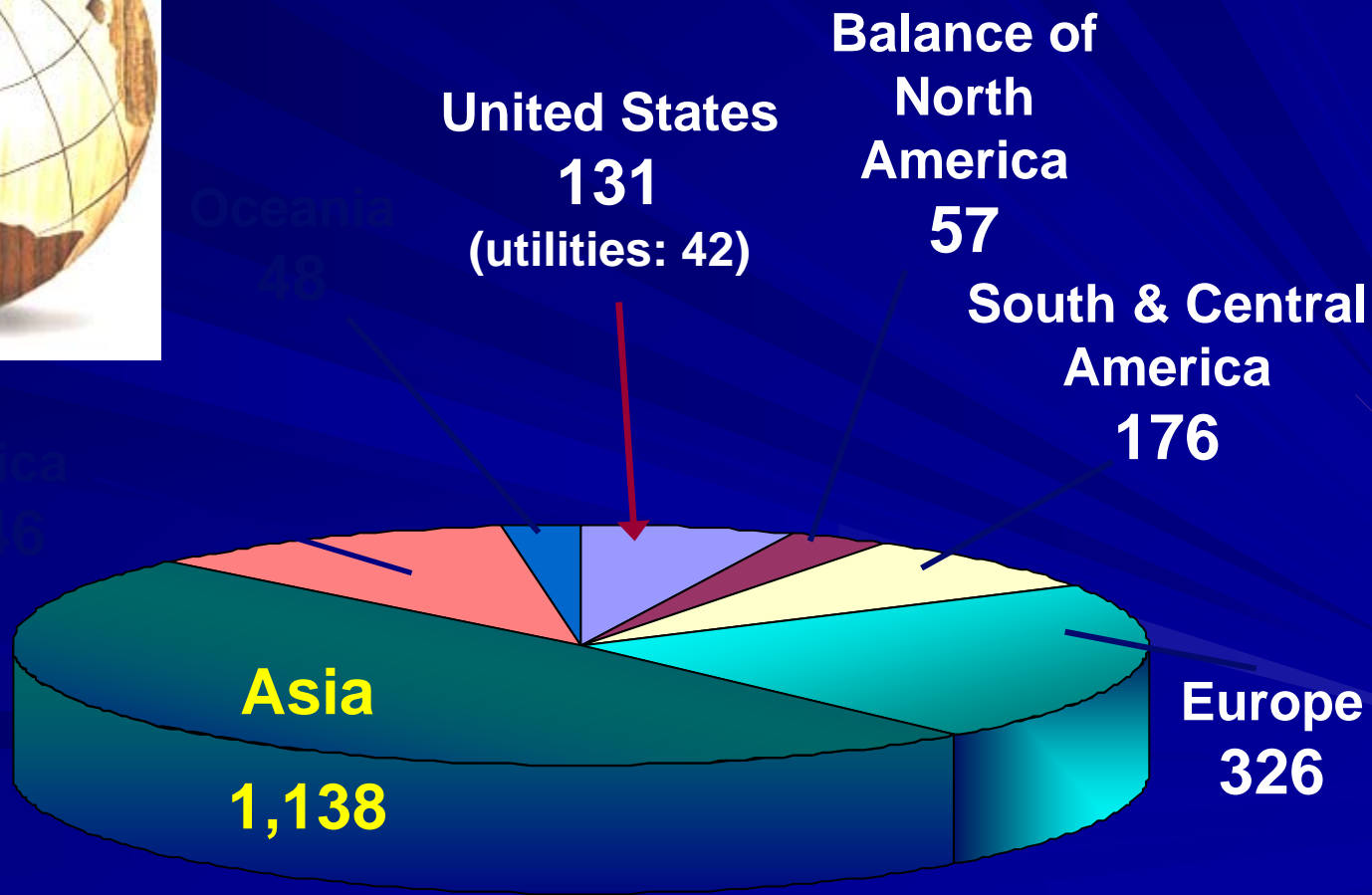


NOTE: This map depicts the presence and type of fish advisories issued by the states for mercury as of December 2002. Because only selected waterbodies are monitored, this map does not reflect the full extent of chemical contamination of fish tissues in each state or province.

Mercury Global Emissions - Anthropogenic Emissions by Continent

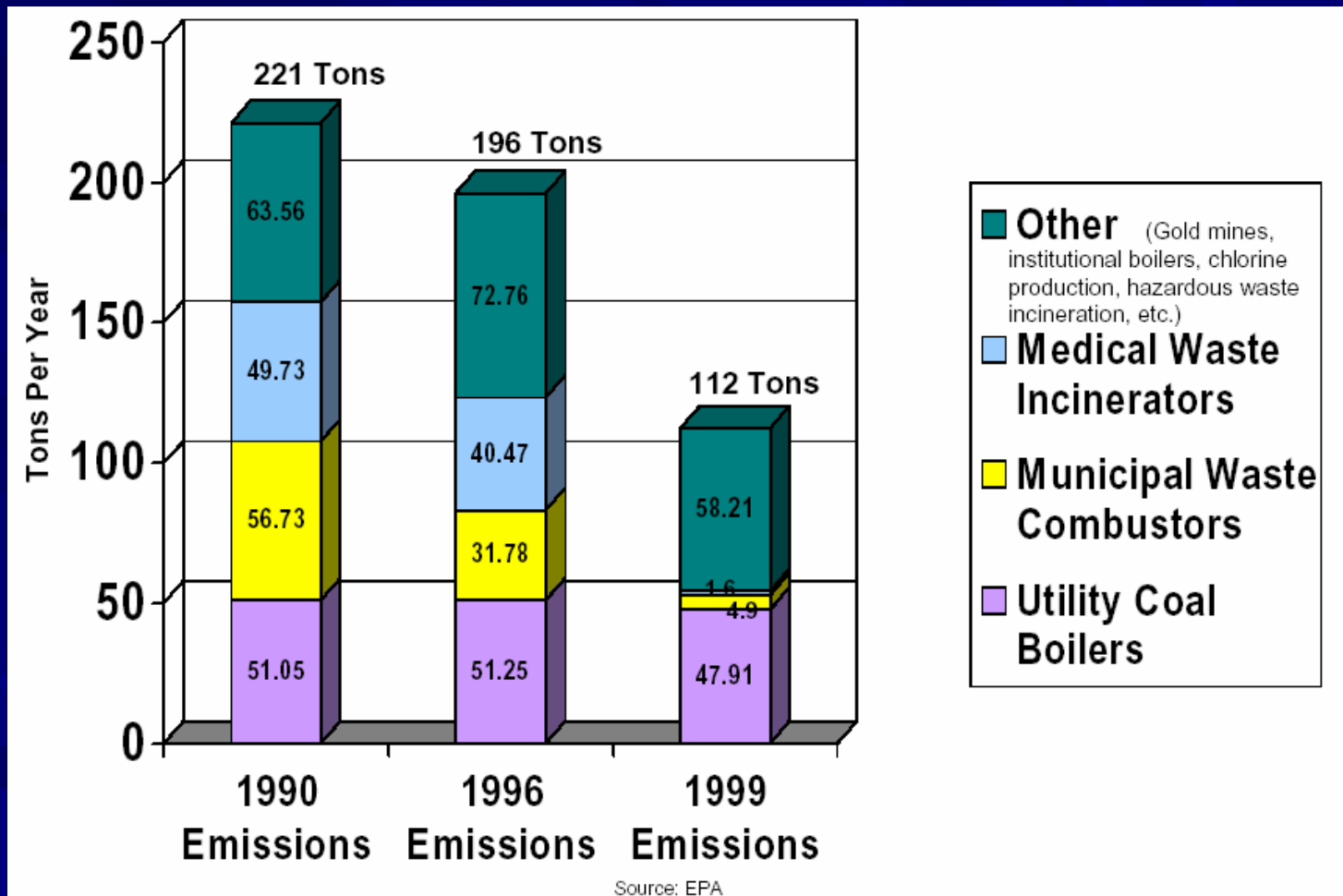


Global total: 2,122 Mg/y



(Adapted from EPRI, 2004)

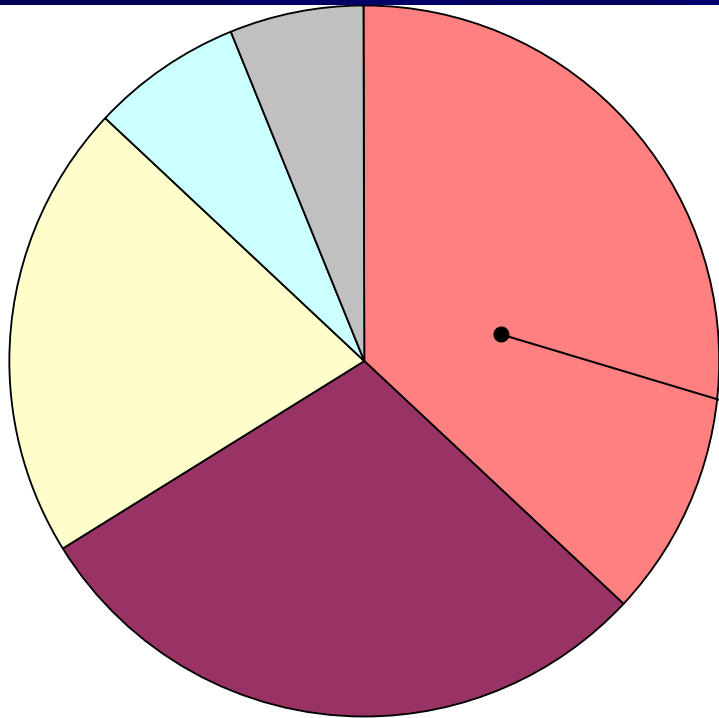
U.S. Emissions of Human-Caused Mercury Have Dropped 45% since 1990



Note: 1999 emission estimate for utility coal boilers is based on 1999 Information Collection Request (ICR); 1990 and 1996 are based on different methodology.

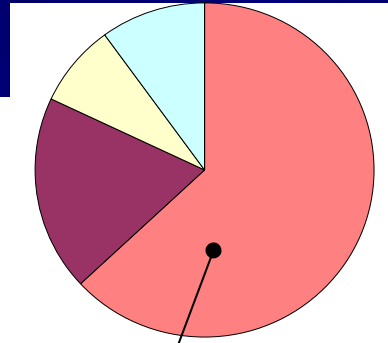
Power Generation Is a Major Source of Emissions

1999 Mercury



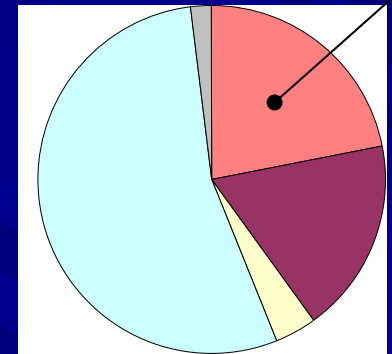
Utilities (40%)

2000 Sulfur Dioxide



Utilities (63%)

2000 Nitrogen Oxides



Utilities (22%)

- Fuel Combustion-electric utilities
- Industrial Processing
- Other stationary combustion *
- Transportation
- Miscellaneous

* Other stationary combustion includes residential and commercial sources.

Current CAAA Requirements for Utilities

NSR Permits for new sources & modifications that increase emissions

Ozone

1-hr Serious Area Attainment Date

OTC NO_x Trading

NO_x SIPs Due

Designate areas for 8-hr Ozone NAAQS

1-hr Severe Area Attainment Date

NO_x SIP Call Reductions

Marginal 8-hr Ozone NAAQS Attainment Date

8-hr Ozone Attainment Demonstration SIPs due

Assess Effectiveness of Regional Ozone Strategies

Possible Regional NO_x Reductions ? (SIP call II) ²

Moderate 8-hr Ozone NAAQS Attainment Date

Serious 8-hr Ozone NAAQS attainment Date



Phase II Acid Rain Compliance

Mercury Determination

Interstate Transport Rule to Address SO₂/NO_x Emissions for Fine PM NAAQS and Regional Haze

Proposed Utility MACT

Designate Areas for Fine PM NAAQS

Final Utility MACT

New Fine PM NAAQS Implementation Plans

Regional Haze SIPs due

Compliance with Utility MACT

Acid Rain, PM_{2.5}, Haze, Toxics

Latest attainment date for Fine PM NAAQS ³

Compliance for BART Sources

Compliance for BART sources under the Trading Program

Second Regional Haze SIPs due

Competing Priorities

- ❑ Price of Electricity
- ❑ Preservation of Coal Markets
- ❑ Price of Natural Gas
- ❑ Time for Installation of Controls
- ❑ Physical Restrictions
- ❑ What to do with Older Boilers

State/Local Agency Historical Positions on Mercury Emissions

- ❑ Followed EPA studies and actions closely
- ❑ Letters to EPA in 1994, 1998, and 2000
- ❑ March 2001 meeting with EPA
- ❑ Active Participation in Utility MACT workgroup
- ❑ May 2002 STAPPA/ALAPCO multi-pollutant strategy principles
- ❑ Membership discussions on a regular basis

MARCH 2001 MEETING WITH EPA--Recommendations

- ❑ Minimal subcategorization of the industry;
- ❑ The most stringent levels of mercury control possible;
- ❑ A multi-pollutant approach;
- ❑ Enhanced ability for States to implement the standards;
- ❑ Early compliance encouraged through the use of incentives; and
- ❑ No trading of toxics.

STAPPA/ALAPCO Energy Principles

- ❑ Integrated approach for utilities
- ❑ Address all significant emissions
- ❑ BACT level national caps
- ❑ Minimum level of controls on each plant
- ❑ Encourage early reductions
- ❑ Firm deadlines, interim steps
- ❑ NSR measures retained

STAPPA/ALAPCO Energy Principles

- ❑ Emissions trading with local protections (trading can buy time for control of specific units, but not exemption)
- ❑ Encourage energy efficiency
- ❑ Address distributed generation
- ❑ Retain local authorities to be more stringent

EPA Actions

- ❑ 1998 report to Congress
- ❑ December 2000 Regulatory finding
 - ❑ Necessary and appropriate to regulate under section 112 of the Act
 - ❑ Mercury listed as HAP of greatest concern; others as potential concern
- ❑ Met with various stakeholder groups April 2001
- ❑ Convened the Utility MACT working group August of 2001

Membership of Utility MACT Working Group

- ❑ Six members representing State/Local/Tribal Agencies
- ❑ Eight members representing Environmental Organizations
- ❑ Fourteen members representing Industry
- ❑ One member representing Control Equipment Vendors
- ❑ Two members representing coal interests, producers and Unions
- ❑ WEST Associates added last summer in order to bring to the table Western interests
- ❑ Nine Workgroup Members are full CAAAC members

Utility MACT Working Group

- ❑ Formed for initial period of one year.
 - ❑ First meeting August 2001.
 - ❑ Subsequent meetings nearly every month through October, 2002. Met 13 times over 18 months.
- ❑ Identified issues and clearly documented stakeholder positions on all issues
- ❑ Full documentation of the working group meetings, including all presentations is available at: <http://www.epa.gov/ttn/atw/combust/utiltox/utoxpg.html>

Note

- ❑ The Utility MACT Working Group met the Administration's definition of the proper way to approach regulation
 - ❑ All the stakeholders were at the table
 - ❑ The process was open and transparent

Important Notes

- ❑ In all our meetings, there was never a hint that the Section 111 process was under consideration at EPA
- ❑ Trading was brought up but always quickly put down, because this is not allowed under Section 112
- ❑ EPA abandoned the working group without allowing it to finish its work—IPM and variability discussions were scheduled but never held

Post-Working Group Important Notes

- ❑ Department of Energy Office of Fossil Fuel published goals for commercially demonstrated mercury controls providing:
 - ❑ 50-70% capture at 75% of cost (2005 for bituminous coal and 2007 for subbituminous coal)
 - ❑ 90% capture at 50% cost by 2010
- ❑ Institute of Clean Air Companies conclusion that 50-70% reduction by 2008-2010 is possible
- ❑ Significant advancement in the areas of SCR/FGD enhancements and halogenated sorbents

Process Went Downhill

- ❑ EPA abruptly reversed course in 2004
 - ❑ Revoked its 2000 decision to list utilities under section 112
 - ❑ Adopted controls under Section 111 of the Act
 - ❑ Adopted a cap-and-trade rule with an interim mercury cap of 38 TPY in 2010 and a “final” cap of 15 TPY in 2018
 - ❑ With banking, actual emissions are predicted at 24 TPY in 2020 and may never reach 15 TPY

The Downhill Slope

- ❑ Initial EPA “2001 Straw Proposal” was for a 90% control MACT standard—down to 5 TPY
- ❑ Original Clear Skies Legislation had 26 TPY mercury limit (co-benefits of NO_x/SO₂ controls)
- ❑ Industry recommendation through the working group was 26-31 TPY (MACT)
- ❑ Senate EPW hearing testimony 34 TPY (co-benefits)
- ❑ Final rule has interim cap at 38 TPY
- ❑ EEI modeling now shows 40 TPY (co-benefits)

EPA Proposal Met with Widespread Opposition

- ❑ STAPPA/ALAPCO expressed formal opposition in testimony, comments
- ❑ ECOS position – EPA’s approaches are inadequate to protect public health, inconsistent with the Clean Air Act, and do not account for available technology
- ❑ Children’s Health Protection Advisory Committee – proposal does not go far enough to protect children, infants and women of child-bearing age
- ❑ Adverse comments from numerous state/local agencies, public interest groups, others

State/Local Agency Major Concerns About Proposal

- ❑ Not protective of public health and the environment
- ❑ Too Little; too late--Emission limits are not stringent enough; do not represent MACT; and the deadlines far too protracted
- ❑ Requirements do not reflect what is technically feasible
- ❑ Controls less stringent than even the industry recommendations from the FACA

State/Local Agency Major Concerns About Proposal

- ❑ Allows trading – hot spots a serious problem
- ❑ Ignores HAPs besides mercury and nickel
- ❑ Use of Section 111 – illegal and inappropriate
 - ❑ Will not address residual risk
 - ❑ Invites protracted legal battles
 - ❑ Will result in SIP-like state-by-state process, not uniform national approach

State/Local Agency Response

State	Program
Connecticut	90% control by 2008 (law)
Massachusetts	85% reduction in Hg emissions by 2008 and 95% by 2012 (rule)
Wisconsin	40% reduction in Hg emissions by 2010 and 75% by 2015 (approved plan)
New Jersey	90% reduction in Hg emissions by 2007 (proposed rule)
North Carolina	55% reduction in Hg emissions by 2013 expected; recommendations for additional reductions (NC Clean Smokestacks Act)
New Hampshire	58% reduction in Hg emissions (cap of 50 lbs/year) 1 year after federal compliance dates; 80% reduction (cap of 24 lbs/year) 4 years later (departmental recommendations to legislature)
New England Governors & Eastern Canadian Premiers	50% reduction in Hg by 2003; 75% reduction by 2010; virtual elimination of anthropogenic discharges long term (Mercury Action Plan)

New Jersey's Program

- ❑ Rule adopted in November 2004
- ❑ 10 units at 7 power plants affected
- ❑ 90% control or 3 mg/MW-hr by Dec. 15, 2007
- ❑ Flexibility in compliance deadline (to Dec. 15, 2012) for plants making major reductions (i.e., BACT) in emissions of SO₂, NO_x, and fine PM
- ❑ No trading between facilities

Massachusetts' Program

- ❑ Rule adopted in May 2004
- ❑ 8 units at 4 power plants affected
- ❑ 85% capture efficiency at each facility by Jan. 1, 2008 (50% reduction)
- ❑ 95% capture efficiency by Oct. 1, 2012 (85% reduction)
- ❑ No trading between facilities

BACT Determinations at State Level

- ❑ Wisconsin – issued a new source permit for facility using subbituminous coal – 83% reduction
- ❑ Iowa – issued a new source permit for facility using subbituminous coal – limit equivalent to 83% reduction

STAPPA/ALAPCO Model Rule Coming Soon—What to Expect

- ❑ Much of the same as what you are seeing in the state rules
- ❑ Regulatory language for % reductions or emission rates
- ❑ Extended compliance dates for multi-pollutant control plans
- ❑ Limited trading; no banking
- ❑ BACT levels for new units

State/Local Agency National Program Recommendations

- ❑ Regulate under Section 112
- ❑ 90% control for sources using bituminous coal
- ❑ 80% control for sources using subbituminous coal
- ❑ National emission reduction between 85-90%
- ❑ Deadlines – Section 112 has 3-year compliance period, also allows additional time; follow the process
- ❑ Control other HAPs in addition to mercury and nickel (surrogate limits on particulates and acid gases)
- ❑ Limited trading; no banking
- ❑ Coordinated multi-pollutant controls
- ❑ Stringent BACT for new units

How to Prevent Regulatory Uncertainty

- ❑ The process of rule adoption needs to be open and transparent—there has never been an explanation of where the 111 proposal originated or why EPA abandoned the working group
- ❑ The rule should follow established Section 112 standards—the MACT floor should be properly calculated and proposed
- ❑ The rule should provide limits which are protective of public health
- ❑ EPA should work with state and local agencies to avoid a multitude of individual state rules

Where Do We Go From Here?

- ❑ Legislation may be necessary; could be under a new Administration
- ❑ An open and transparent process involving all Stakeholders is necessary
- ❑ State/Local Agencies are willing to participate in such discussions among stakeholders
- ❑ Without adequate national/regional address, State/Local Agencies will continue to act on their own; expect additional state/local mercury control rules

Technology is the Key

- ❑ Development of good control technology will protect coal's future and provide certainty to all stakeholders
- ❑ Good control technology for mercury can be exported and used to reduce global emissions
- ❑ The U.S. should assume a leadership position in control technology development