



# **Clean Air Interstate Rule CAIR**

EPA Region 6

# CAIR Overview

- Over 450 counties in the Eastern United States do not meet new health-based standards for 8-hour ozone and PM<sub>2.5</sub>.
- CAIR reduces interstate transport of precursors for ozone (NO<sub>x</sub>) and PM<sub>2.5</sub> (NO<sub>x</sub> and SO<sub>2</sub>) pollution.
- CAIR reductions are accomplished by:
  - Ozone Season NO<sub>x</sub> Cap (May-September)
  - Annual NO<sub>x</sub> and SO<sub>2</sub> Caps
- EPA considers control of electric generating units (EGUs) to be highly-cost effective approach for all solutions.
- CAIR is promulgated based on state obligations to address interstate transport of pollutants under Clean Air Act, Section 110(a)(2)(D).

# CAIR Inclusion Determinations

- 8-hr Ozone
  - States were included if the EPA model indicated a significant impact ( $>2\text{ppb}$ ) on another state's 8-hr ozone nonattainment in 2010.
  - 6 states on the western border of the CAIR region were not modeled by EPA for 8-hr ozone impact on other states.
    - KS, ND, NE, **OK**, SD, **TX**
- $\text{PM}_{2.5}$ 
  - States were included if the EPA model indicated a significant impact ( $>0.2\mu\text{g}/\text{m}^3$ ) on another state's  $\text{PM}_{2.5}$  nonattainment in 2010.



# CAIR Reductions

(provided in millions of tons)

<b>First Phase (2009 for NO<sub>x</sub> and 2010 for SO<sub>2</sub>)</b>				
	<b>Base Case Emissions</b>	<b>CAIR Caps</b>	<b>Emissions After CAIR</b>	<b>Reductions</b>
<b>SO<sub>2</sub> Annual</b>	<b>8.8</b>	<b>3.7</b>	<b>5.2</b>	<b>3.6</b>
<b>NO<sub>x</sub> Annual</b>	<b>2.8</b>	<b>1.5</b>	<b>1.5</b>	<b>1.2</b>
<b>NO<sub>x</sub> Ozone Season (May-Sept)</b>	<b>0.7</b>	<b>0.6</b>	<b>0.6</b>	<b>0.1</b>
<b>Second Phase (2015)</b>				
<b>SO<sub>2</sub> Annual</b>	<b>7.9</b>	<b>2.6</b>	<b>4.1</b>	<b>3.9</b>
<b>NO<sub>x</sub> Annual</b>	<b>2.8</b>	<b>1.3</b>	<b>1.3</b>	<b>1.5</b>
<b>NO<sub>x</sub> Ozone Season (May-Sept)</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.2</b>

# Region 6 Impacts

- 8-hr Ozone Transport
  - Arkansas significantly contributes to Texas nonattainment in Galveston, Harris, and Jefferson counties.
  - Louisiana significantly contributes to Texas nonattainment in Galveston, Harris, and Jefferson counties.
- PM<sub>2.5</sub> Transport
  - Louisiana significantly contributes to Alabama nonattainment in Jefferson and Russell counties.
  - Texas significantly contributes to Illinois nonattainment in Madison and St. Clair counties.

# Region 6 Benefits

- CAIR will assist Arkansas sources in reducing NO<sub>x</sub> emissions during the ozone season by 67% by 2015.
- CAIR will assist Louisiana sources in reducing NO<sub>x</sub> emissions by 57% and SO<sub>2</sub> emissions by 41% by 2015.
- CAIR will assist Texas sources in reducing NO<sub>x</sub> emissions by 25% and SO<sub>2</sub> emissions by 39% by 2015.

# Region 6 Attainment without CAIR

## Existing Clean Air Act Programs will bring these counties into attainment by 2010:

- Crittenden County, AR
- Ascension Parish, LA
- East Baton Rouge Parish, LA
- Iberville Parish, LA
- Livingston Parish, LA
- West Baton Rouge Parish, LA
- Bexar County, TX
- Comal County, TX
- Guadalupe County, TX

## Existing Clean Air Act Programs will bring these counties into attainment by 2015:

- Collin County, TX
- Dallas County, TX
- Denton County, TX
- Ellis County, TX
- Johnson County, TX
- Kaufman County, TX
- Parker County, TX
- Rockwall County, TX
- Tarrant County, TX

# Region 6 Attainment with CAIR

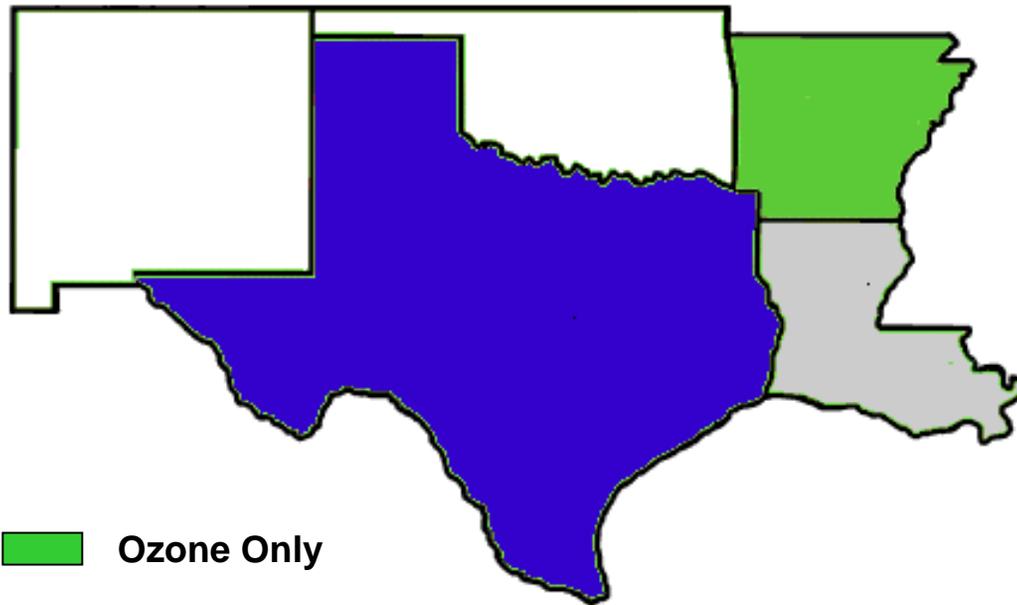
**CAIR and existing Clean Air Act Programs will bring the following counties into attainment by 2015:**

- Hardin County, TX
- Jefferson County, TX
- Orange County, TX

**CAIR and existing Clean Air Act Programs will help reduce ozone precursor pollution in the following counties:**

- Brazoria County, TX
- Chambers County, TX
- Fort Bend County, TX
- Galveston County, TX
- Harris County, TX
- Liberty County, TX
- Montgomery County, TX
- Waller County, TX

# Region 6 State CAIR Budgets



- Ozone Only
- Particles Only
- Ozone and Particles
- Not Subject to CAIR

Seasonal NO <sub>x</sub> Cap (tons)		
State	2009 Budget	2015 Budget
AR	11,515	9,596
LA	17,085	14,238
Annual NO <sub>x</sub> Cap (tons)		
State	2009 Budget	2015 Budget
LA	35,512	29,593
TX	181,014	150,845
Annual SO <sub>2</sub> Cap (tons)		
State	2010 Budget	2015 Budget
LA	59,948	41,963
TX	320,946	224,662

*State budgets do not include estimates of banked emissions*

# Ozone Season NO<sub>x</sub> Budget

- Ozone Season is May through September
- CAIR Ozone Season NO<sub>x</sub> Budget is designed to take the place of NO<sub>x</sub> SIP Call
  - Region 6 was not subject to NO<sub>x</sub> SIP Call
- Options for meeting Ozone Season NO<sub>x</sub> Budget :
  1. States can elect to participate in an EPA-managed cap and trade program
  2. Use Ozone Season NO<sub>x</sub> Budget to design a cap and trade program, or other state program, subject to EPA approval
    - EGUs must be capped if State chooses to meet budget by controlling them
    - States can choose to control non-EGUs or combination of EGUs and non-EGUs

# Annual NO<sub>x</sub> and SO<sub>2</sub> Budgets

- Only for states affected by PM<sub>2.5</sub> finding (LA and TX)
- Options for meeting annual NO<sub>x</sub> and SO<sub>2</sub> budget:
  1. States can elect to participate in an EPA-managed cap and trade program
    - Control only EGUs
  2. Use annual NO<sub>x</sub> or SO<sub>2</sub> Budget to design a cap and trade program, or other state program, subject to EPA approval
    - EGUs must be capped if State chooses to meet budget by controlling them
    - States can choose to control non-EGUs or combination of EGUs and non-EGUs
- Additional annual NO<sub>x</sub> allocations are provided by EPA through the Compliance Supplement Pool (CSP).

# Compliance Supplement Pool

- The CSP provides 200,000 tons of NO<sub>x</sub> that may be used for compliance with annual NO<sub>x</sub> requirements.
- EPA apportions the CSP based on the assumption that a State's need for allowances from the pool is proportional to the magnitude of the State's required emission reductions for 2009.

<b>State NO<sub>x</sub> Compliance Supplement Pools (tons)</b>				
<b>State</b>	<b>Base Case 2009 Emissions</b>	<b>2009 State Annual NO<sub>x</sub> Budget</b>	<b>Reduction Requirement</b>	<b>Compliance Supplement Pool</b>
<b>LA</b>	<b>49,460</b>	<b>35,512</b>	<b>13,948</b>	<b>2,251</b>
<b>TX</b>	<b>185,798</b>	<b>181,014</b>	<b>4,784</b>	<b>772</b>

# Compliance

- Compliance will be determined separately for each CAIR cap and trade program:
  - Seasonal Ozone NO<sub>x</sub> Cap
  - Annual Cap for NO<sub>x</sub>
  - Annual Cap for SO<sub>2</sub>
- For the NO<sub>x</sub> and SO<sub>2</sub> cap and trade programs, any source found to have emissions in excess of their CAIR allocations must:
  - surrender CAIR allowances sufficient to offset the exceedance in the current control period; and
  - surrender CAIR allowances from the next control period equal to three (3) times the exceedance.
- Compliance with the Title IV Acid Rain Program will be determined separately from CAIR compliance.

# Finding of Failure to Submit Transport SIPs

- Separate action from CAIR
- EPA published finding that states have failed to submit SIPs to satisfy requirements of 110(a)(2)(D)(i) for the transport of 8-hour ozone and PM<sub>2.5</sub>.
- States had three years from July 1997 to submit these SIPs.
- Two year clock started March 10, 2005, for EPA to issue a Federal Implementation Plan if the States fail to make the required submission.
- This action is required under a consent decree between EPA and Earth-Justice.

# SIP Submittal Timeline

- September 10, 2006 – CAIR SIPs are due
  - AR submits SIP for 8-hr ozone transport
  - LA submits SIP for 8-hr ozone and PM<sub>2.5</sub> transport
  - TX submits SIP for PM<sub>2.5</sub> transport
- March 10, 2007 – Transport SIPs are due
  - AR submits SIP for PM<sub>2.5</sub> transport
  - NM submits SIP for 8-hr ozone and PM<sub>2.5</sub> transport
  - OK submits SIP for 8-hr ozone and PM<sub>2.5</sub> transport
  - TX submits SIP for 8-hr ozone transport

# SIP Submission Timeline

- States must submit SIPs to satisfy CAIR no later than 18 months from March 10, 2005.
  - SIP should address transport of NO<sub>x</sub> and SO<sub>2</sub> as applicable
  - AR, LA, and TX
- States must submit SIPs to address 110(a)(2)(D)(i) for the transport of 8-hour ozone and PM<sub>2.5</sub> within 2 years from March 10, 2005.
  - AR (PM<sub>2.5</sub>), NM (O<sub>3</sub> and PM<sub>2.5</sub>), OK (O<sub>3</sub> and PM<sub>2.5</sub>), TX (O<sub>3</sub>)
- EPA will make a completeness determination in accordance with 40 CFR 51, Appendix V, within 60 days, but no later than 6 months after, receipt of SIP submittals.

# Interaction between CAIR and the Title IV Acid Rain Program

## revise before briefing Carl

- The EPA-administered CAIR SO<sub>2</sub> Cap and Trade Program builds on and coordinates with the Acid Rain Program.
- Use of Acid Rain allocations for compliance with CAIR
  - 1:1 ratio for allocations before 2010 (one allowance for Acid Rain)
  - 2:1 ratio for allocations 2010-2014 (one allowance for Acid Rain and one allowance for CAIR)
  - 2.86:1 ratio for allocations 2015 and after (one allowance for Acid Rain and 1.86 allowances for CAIR)
- Once a Title IV allowance has been used for compliance with CAIR SO<sub>2</sub> Cap and Trade Program, it cannot be used again for compliance under either the Acid Rain Program or CAIR.

# Section 126 Petitions

- The final CAIR does not address EPA's view of the interaction between Sections 110(a)(2)(D) and 126.
  - This will be outlined in EPA's response to the North Carolina Section 126 Petition of March 19, 2004.
  - Due by August 1, 2005
- EPA will take into consideration and respond to the section 126-related comments received on CAIR at this time.
- EPA will provide a comment period and opportunity for public hearing on the specifics of the North Carolina Section 126 petition findings.
- EPA will also provide the opportunity to comment on EPA's view of the interaction between Sections 110(a)(2)(D) and 126.

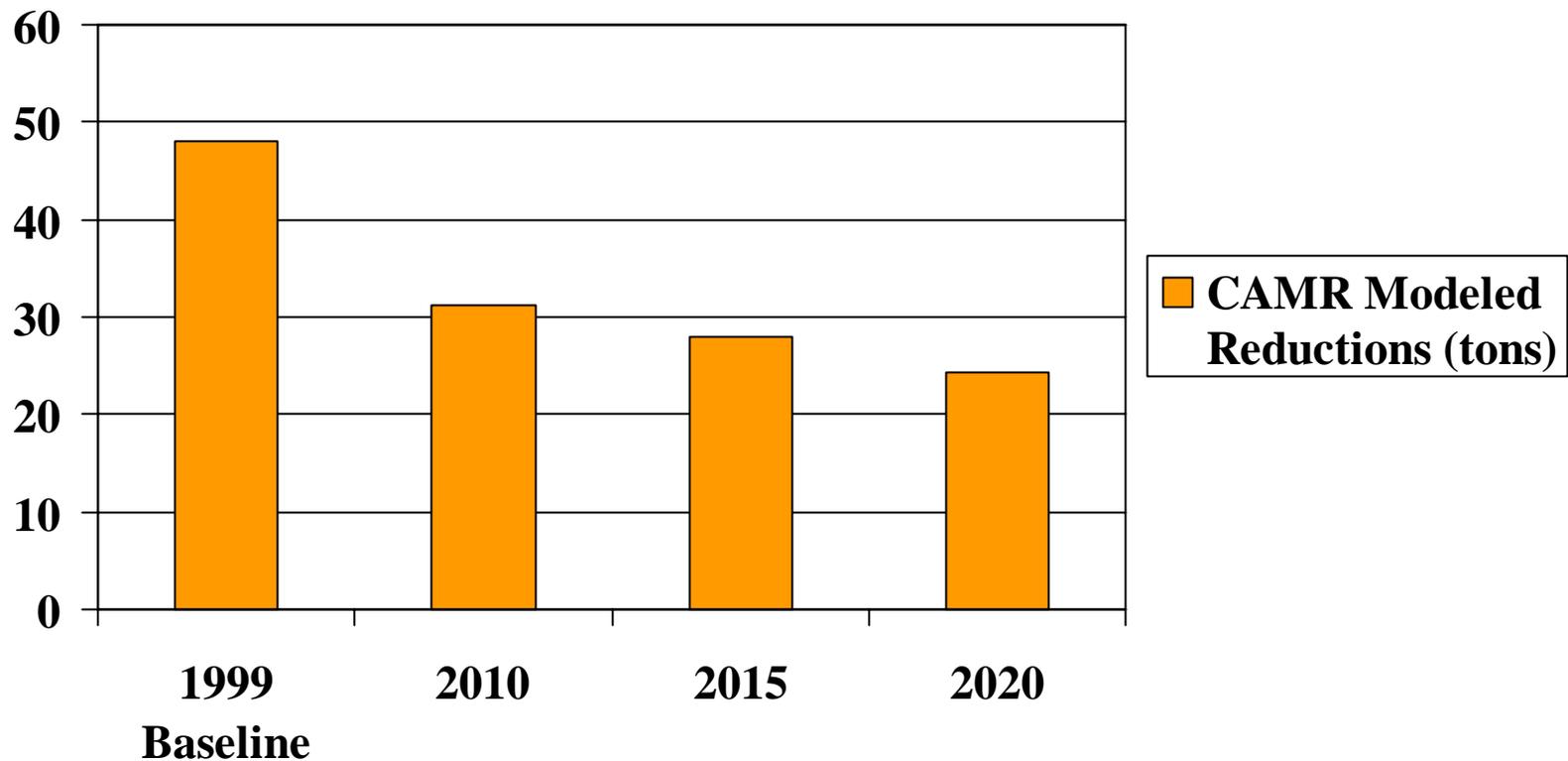
# Emissions Reporting Timelines

- Seasonal Ozone Requirements (AR and LA)
  - AR and LA
  - Beginning in 2008, report NO<sub>x</sub> emissions during 5-month ozone season from all sources every three years
  - Continue to report NO<sub>x</sub> emissions for the full year and a summer day as was already required
  - Beginning in 2009, report NO<sub>x</sub> emissions for ozone season and summer day and other data as required for all sources subject to new controls adopted specifically for CAIR
    - Sources participating in EPA-administered cap and trade program are exempt from this requirement
    - Reports due June 1 of second year following the reporting year (17 months)
  - Continue to report per the existing Consolidated Emissions Reporting Requirements (CERR)

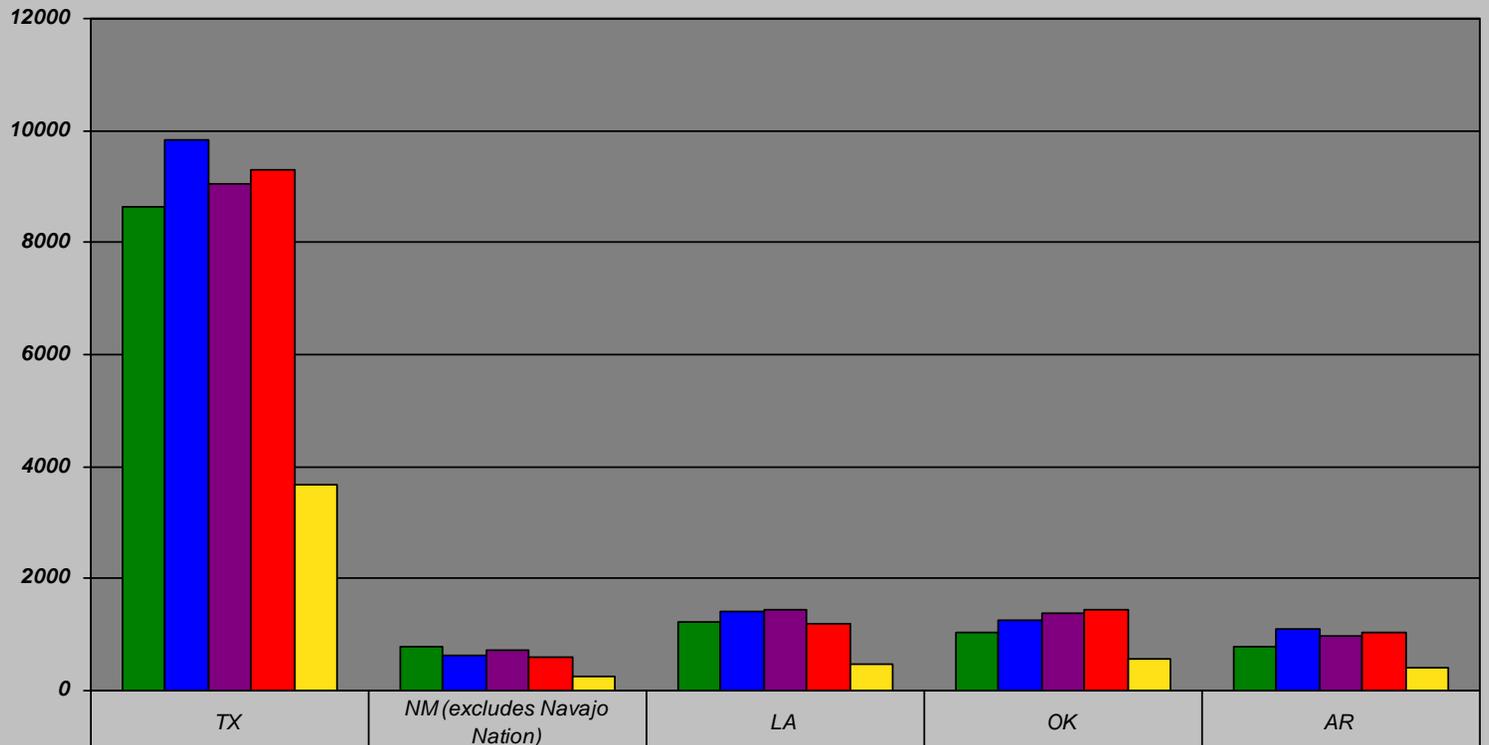
# Emissions Reporting Timelines

- Annual PM<sub>2.5</sub> Requirements (LA and TX)
  - Report annual NO<sub>x</sub> and SO<sub>2</sub> emissions and other data as required for all sources subject to new controls adopted specifically for CAIR
  - Sources participating in EPA-administered cap and trade program are exempt from this requirement
  - Continue to report per the existing Consolidated Emissions Reporting Requirements (CERR)

# CAMR Reduction Analysis



# Coal-Fired Power Plants Mercury Emissions In Region 6 (in lbs.)



■ FY 01 Total 13095 lbs	8648	777	1226	1030	794
■ FY 02 Total 14807 lbs	9830	618.5	1429	1253	1090
■ FY 03 Total 14151 lbs	9047.45	713	1434	1369	961.7
■ 2010-2017 Budget	9314	598	1202	1442	1032
■ 2018 Budget	3676	236	474	570	408

## CAIR Submittals

### State Plan due September 10, 2006

#### **General Requirements for all CAIR Submittals**

- SIP must provide enforcement measures:
  - Procedures for monitoring compliance
  - Procedures for handling violations
  - Designation for agency responsibility for enforcement of implementation
- If State chooses to control EGUs, all such sources in the state must be capped
- If State chooses to impose controls on fossil fuel-fired non-EGUs that are boilers and/or combustion turbines with a maximum design heat input greater than 250 MMBTU/hr, then all such sources in the state must be capped
- If State chooses to control any other non-EGUs, then these sources must be capped or the State must demonstrate why an emissions cap is not practicable.
- If State adopts regulations substantively identical to the national, EPA-managed trading programs, or incorporates by reference, the SIP will be approved as meeting requirements for CAIR.

#### **Specific Requirements for Annual NO<sub>x</sub> Budget**

##### Louisiana and Texas

- Contain control measures and demonstrate compliance with State Annual NO<sub>x</sub> Budget
- State can use compliance supplement pool (CSP) if desired (2251 tons)
- State makes CSP distributions by January 1, 2010.
- State may decline to adopt CAIR NO<sub>x</sub> opt-in provisions
- State may adopt different methodology for NO<sub>x</sub> allocations than EPA supplied in CAIR
- State cannot allocate CAIR NO<sub>x</sub> allowances for a year in excess of the State Annual EGU NO<sub>x</sub> budget
- For EGUs commencing operation before January 1, 2000, State will determine and notify EPA of each unit's allocation of CAIR NO<sub>x</sub> allowances by October 31, 2006 for 2009, 2010, and 2011, and by October 31, 2008 and October 31 of each year thereafter for the year 4 years after the notification deadline.
- For EGUs commencing operation on or after January 1, 2000, State will determine and notify EPA of each unit's allocation of CAIR NO<sub>x</sub> allowances by October 31 of the year immediately after the year for which the CAIR NO<sub>x</sub> allowances are allocated.

#### **Specific Requirements for 8-hr Ozone Season NO<sub>x</sub>**

##### Arkansas and Louisiana

- Contain control measures and demonstrate compliance with State Ozone Season NO<sub>x</sub> Budget
- State may decline to adopt CAIR NO<sub>x</sub> Ozone Season opt-in provisions
- State may adopt different methodology for Ozone Season NO<sub>x</sub> allocations than EPA supplied in CAIR
- For EGUs commencing operation before January 1, 2000, State will determine and notify EPA of each unit's allocation of CAIR NO<sub>x</sub> allowances by October 31, 2006 for the ozone seasons 2009, 2010, and 2011, and by October 31, 2008 and October 31 of each

- year thereafter for the ozone season 4 years after the notification deadline.
- For EGUs commencing operation on or after January 1, 2000, State will determine and notify EPA of each unit's allocation of CAIR Ozone Season NO<sub>x</sub> allowances by July 31 of the calendar year of the ozone season for which the CAIR Ozone Season NO<sub>x</sub> allowances are allocated.

### **Specific Requirements for Annual SO<sub>2</sub> Budget**

Louisiana and Texas

- Contain control measures and demonstrate compliance with State Annual SO<sub>2</sub> Budget (59,948 TPY for 2010-2014 and 41,963 TPY for 2015 and after)
- State may decline to adopt CAIR SO<sub>2</sub> opt-in provisions
- State may adopt different methodology for SO<sub>2</sub> allocations than EPA supplied in CAIR
- State cannot allocate CAIR SO<sub>2</sub> allowances for a year in excess of the State Annual EGU SO<sub>2</sub> budget
- If State does not adopt the model SO<sub>2</sub> cap-and-trade or another approvable emissions trading program, the State must provide a permanent retirement system for Title IV Acid Rain allowances

## **Initial CAMR Submittals**

### **State Plan due September 15, 2006**

#### **Plan should include:**

- Emission standards
- Compliance schedules
- Demonstration that emission standards and compliance schedule will result in compliance with State annual mercury budget for appropriate periods.
- Monitoring, recordkeeping, and reporting requirements for mass mercury emissions.
- Demonstration of State legal authority to carry out the mercury program.
- State methodology demonstrations for allocating allowances.

### **Hg Allowance Allocation submittal due October 31, 2006 for 2010-2014**

#### **Plan should include:**

- Baseline heat input data for units that commenced operation before Jan. 31, 2001
- Baseline heat input data for units commencing operation after Jan. 31, 2001
- Unit's total ounces of mercury emissions during a calendar year
- For each control period in 2010 and thereafter, the mercury allowance allocations for all units (with baseline heat input) detailing the amount of ounces of mercury emissions in the State trading budget.

Note: The Hg Allowance Allocation plan will be required by October 31, 2008, and each year thereafter, for the control period in the sixth year after the year of the applicable deadline.