

UPDATE ON EPA AND KDHE AIR QUALITY REGULATORY ACTIONS

House Energy and Utilities Committee



Jan 11, 2012

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Overview

- Cross State Air Pollution Rule (CSAPR)
- Ozone and Flint Hills Smoke Management Plan (SMP)
- Sulfur Dioxide (SO₂)
- Mercury and Air Toxics Standards (MATS)
- New Source Performance Standards (NSPS)
- Reciprocating Internal Combustion Engine (RICE)
Maximum Achievable Control Technology(MACT)

Cross-State Air Pollution Rule - Stay

- December 30, 2011 – The DC Circuit Court of Appeals issued its ruling to stay the CSAPR pending judicial review.
- Court directs petitioners to consolidate their arguments and submit initial briefings by January 17, 2012.
 - 45 separate challenges filed
- The court to hear the case by or before April 2012.
- Court decision does not provide its basis for the stay.
- Short time frame may allow EPA to prepare new rule for 2013 or 2014 implementation.

Cross-State Air Pollution Rule Review

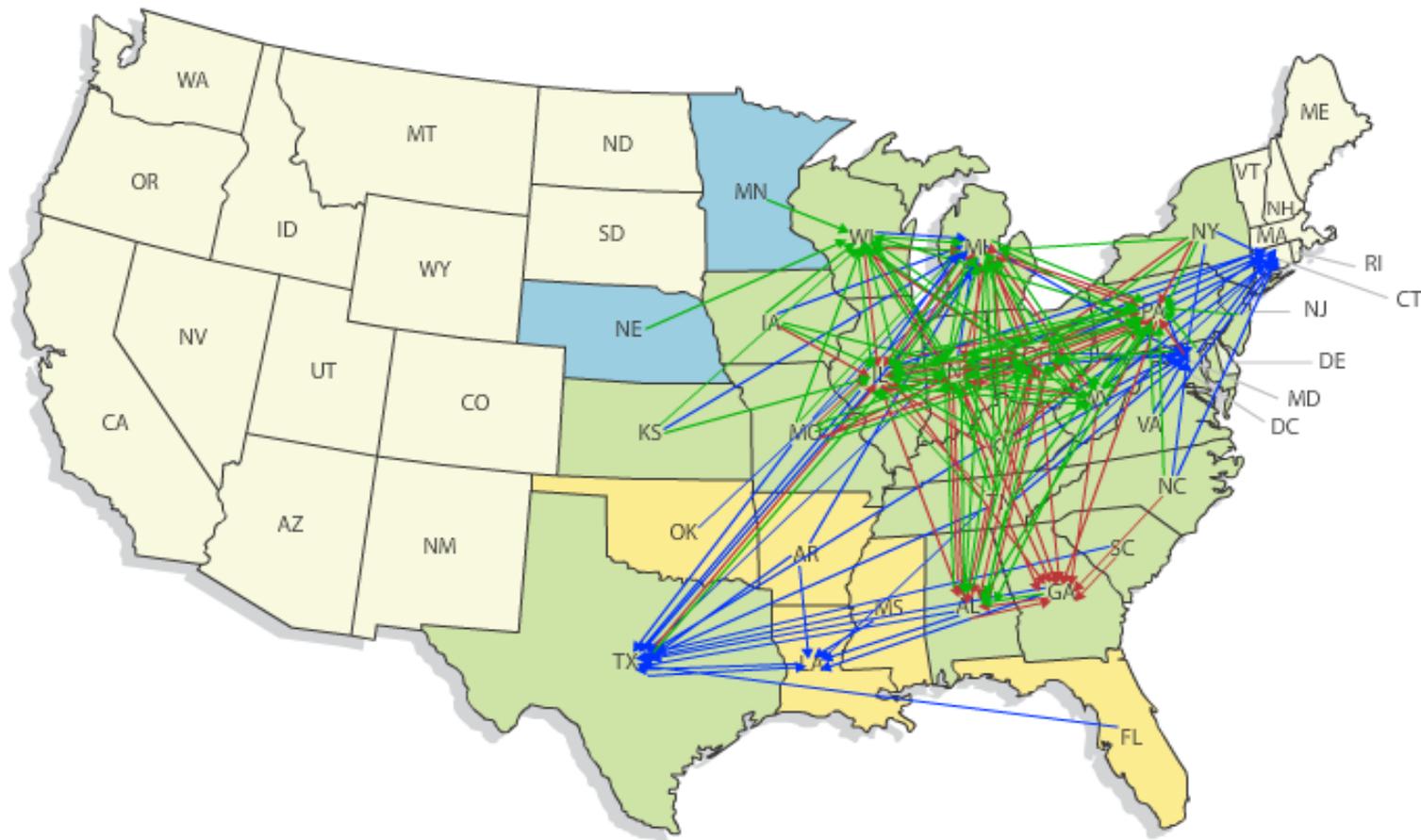
- Final Rule signed on July 6, 2011.
- Affects power plant emissions that contribute to ozone and/or fine particle pollution in down-wind states.
- Covers Nitrogen oxides and Sulfur dioxide.
- Addresses the December 2008 court decision that kept Clean Air Interstate Rule (CAIR) in place and ordered EPA to fix it.
- Upwind state's obligations to reduce pollution based on:
 - ▣ the magnitude of a state's contribution....1% threshold;
 - ▣ the cost of controlling pollution; and
 - ▣ the air quality impacts of reductions.
- Kansas was in for both Nitrogen oxides and Sulfur dioxide.

Ozone Season Supplemental Rule



- Final rule published December 2011.
- Requires IA, MI, MO, OK, and WI to reduce summertime NO_x emissions (May through September) under a FIP.
- Kansas in proposed rule but out of final rule while we and EPA address FIP/SIP issue.
- EPA will likely issue a SIP Call for Kansas with a 12 month deadline to resubmit an ozone SIP.

CSAPR Upwind-Downwind Linkages



Legend

-  States controlled for both fine particles (annual SO₂ and NO_x) and ozone (ozone season NO_x) (21 States)
-  States controlled for fine particles only (annual SO₂ and NO_x) (2 States)
-  States controlled for ozone only (ozone season NO_x) (5 States)
-  States not covered by the Cross-State Air Pollution Rule

Key to Arrows

-  Upwind-Downwind Linkage for Ozone
-  Upwind-Downwind Linkage for Annual PM_{2.5}
-  Upwind-Downwind Linkage for Daily PM_{2.5}

<http://www.epa.gov/airquality/transport/>

Kansas Trading Budgets – Final Rule

2012 Trading Period - tons	2010 Actual Emissions	2012 State Allocation Budget	2012 New Unit Set Aside	2012 Variability Limit	2012 State Assurance Level
Annual NOx	48,938	30,100	614	5,529	36,243
Ozone Season NOx	22,315	13,265	271	2,843	16,379
SO2 Group 2	45,251	40,697	831	7,475	49,003

2014 Trading Period - tons	2010 Actual Emissions	2014 State Allocation Budget	2014 New Unit Set Aside	2014 Variability Limit	2014 State Assurance Level
Annual NOx	48,938	25,049	511	4,601	30,161
Ozone Season NOx	22,315	10,778	220	2,310	13,308
SO2 Group 2	45,251	40,697	831	7,475	49,003

Kansas Concerns with CSAPR

- 2012 compliance period was too soon to complete projects underway or planned.
 - ▣ CAIR compliance period – May 2005 to 2009
 - ▣ CSAPR compliance period – July 2011 to 2012
- Can Kansas meet its state budget?
- State had no control over 2012 existing unit allocations.
- Stranded SO₂ allocations for WESTAR due to settlement with EPA.
- Supplemental Ozone Season Proposal?
 - ▣ Time constraints
 - ▣ Technical issues
 - ▣ Dispatch of smaller dirtier units to meet demand

KDHE Activities regarding CSAPR



- Comment letter to EPA on draft CATR proposal.
- Governor's letter to EPA Administrator.
- Comment letter on the Supplemental Proposal.
- Letter to EPA stating that Kansas should have a SIP call, not be under a FIP.
- Letter of intent to EPA for 2013 SIP for adjustments to existing unit allocations.
- Partner with AG on requests for stay and reconsideration.

CSAPR Next Steps and Questions.....



- EPA must quickly revert back to implementing CAIR in original group of states.
- Will EPA call for a SIP revision requiring Kansas to address ozone transport?
- Review emission inventory and project future EGU emissions.
- Review EPA's CSAPR modeling.
- Track EGU's progress on installation of controls under Regional Haze SIP and KC maintenance plan.

Ozone Standard

- EPA set standard at 84 ppb in 1997.
- EPA lowered standard to 75 ppb in 2008.
- EPA announced reconsideration of standard in September of 2009.
- EPA proposed a standard in the range of 60 to 70 ppb in January 6, 2010.
- Obama asked EPA to stop reconsideration on Sept 2, 2011.
- Next statutory review of standard due in 2013.
- Current standard is 75 ppb.
- Governor submitted letter to EPA recommending that all counties be designated as meeting the 75 ppb standard.

Smoke Management Plan

- Burning caused ozone exceedances in 2003, 2009, 2010 & 2011.
- EPA denied KDHE's request to flag 2009 data.
- Commitment to develop Smoke Management Plan in 2010.
- Plan adopted by KDHE in December 2010.
- Plan is voluntary for prescribed burns of rangeland.
- Has a web site (ksfire.org) with tools to predict smoke plume movement and other burn resources.
- Includes restrictions on certain burns in April.
- Includes a major outreach effort to ranchers, the public and government officials.

Forecasts and maps are updated daily at 1pm CDT. Note, the map for April 05, 2011, will not be available after 1pm CDT.

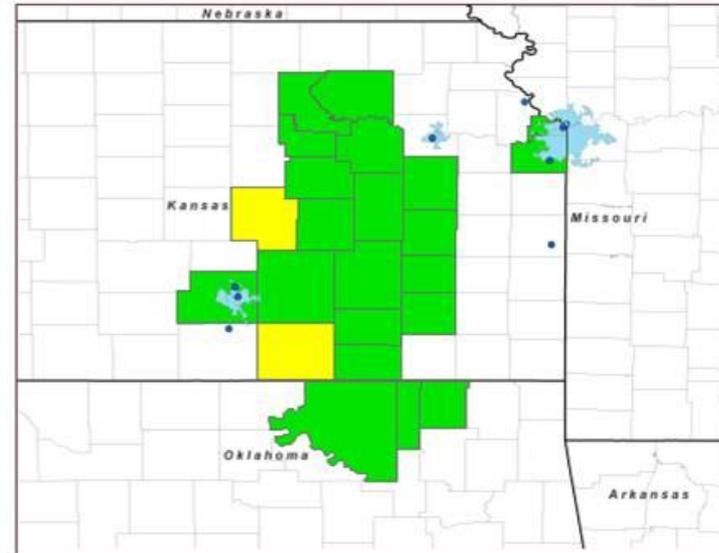
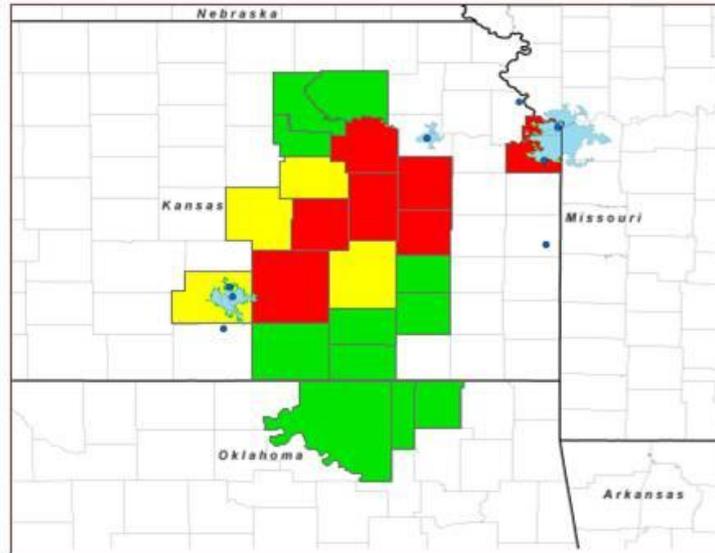
View as: [Map](#) | [Table](#)

Potential Contribution To Major Cities For Fires Ignited On

April 06, 2011

April 07, 2011

Maximum Contribution Potential within 48 hours



■ Small Contribution
 ■ Medium Contribution
 ■ Large Contribution
 Data Unavailable
 Metropolitan Area
 ● Monitor

Forecast Discussion

Extended Forecast

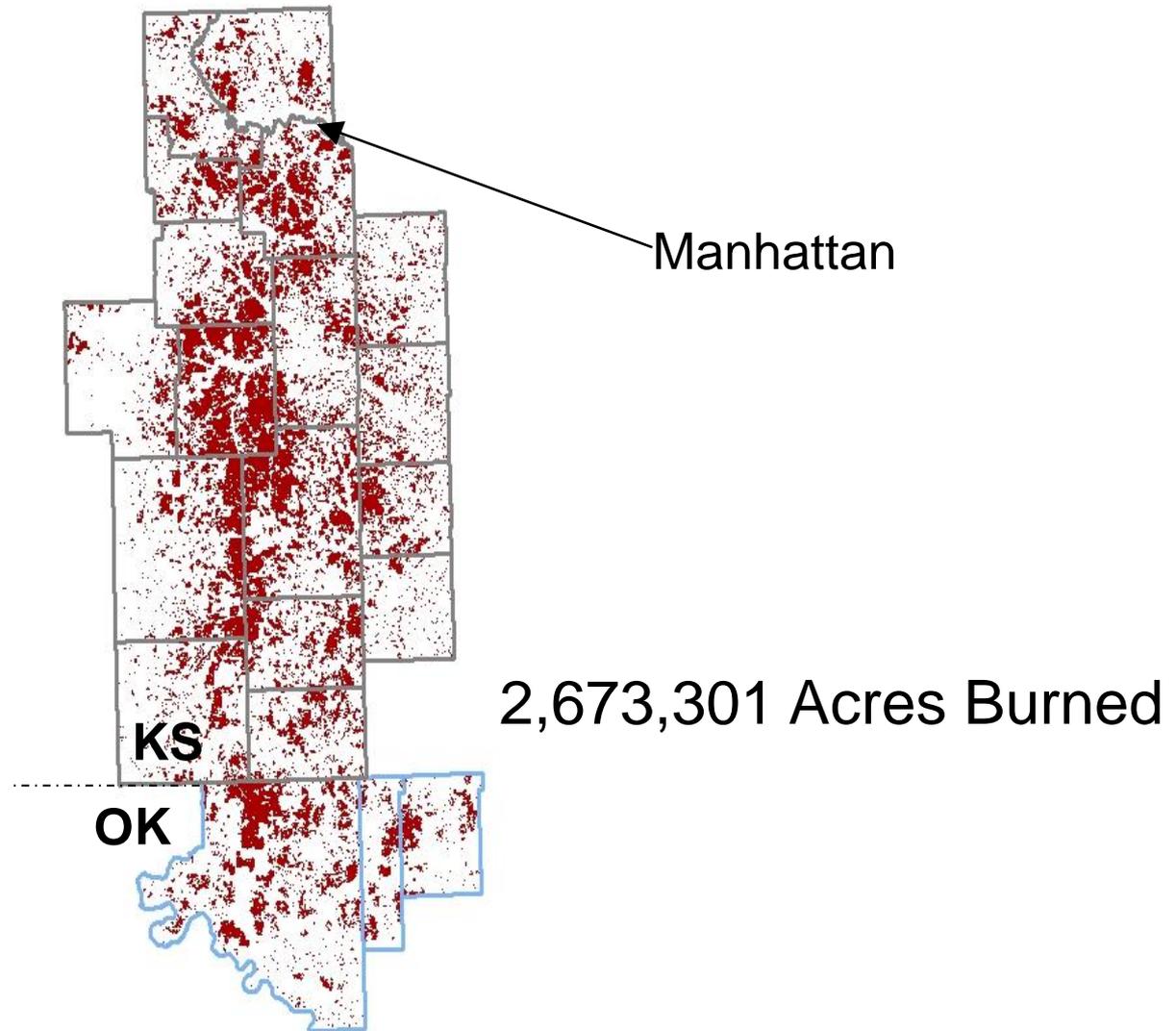
Wednesday, April 6: Moderate southwesterly winds in the morning will become east-northeasterly by mid-day as a low-pressure system moves east through Oklahoma. These conditions will cause smoke from potential fires in the Flint Hills to initially be transported into the Topeka and Kansas City areas before moving back toward Wichita later in the day.

Thursday, April 7: A low-pressure system over western Kansas will generate moderate south-southeasterly winds in the eastern portion of the state. These winds will transport any smoke from potential fires in the Flint Hills away from Wichita, Topeka, and Kansas City.

This forecast is for air quality impacts only.

- April 8, 2011: Worsening conditions for burning are expected.
- April 9, 2011: Worsening conditions for burning are expected.
- April 10, 2011: Improved conditions for burning are expected.
- April 11, 2011: Improved conditions for burning are expected.

Acres Burned in Flint Hills - 2011

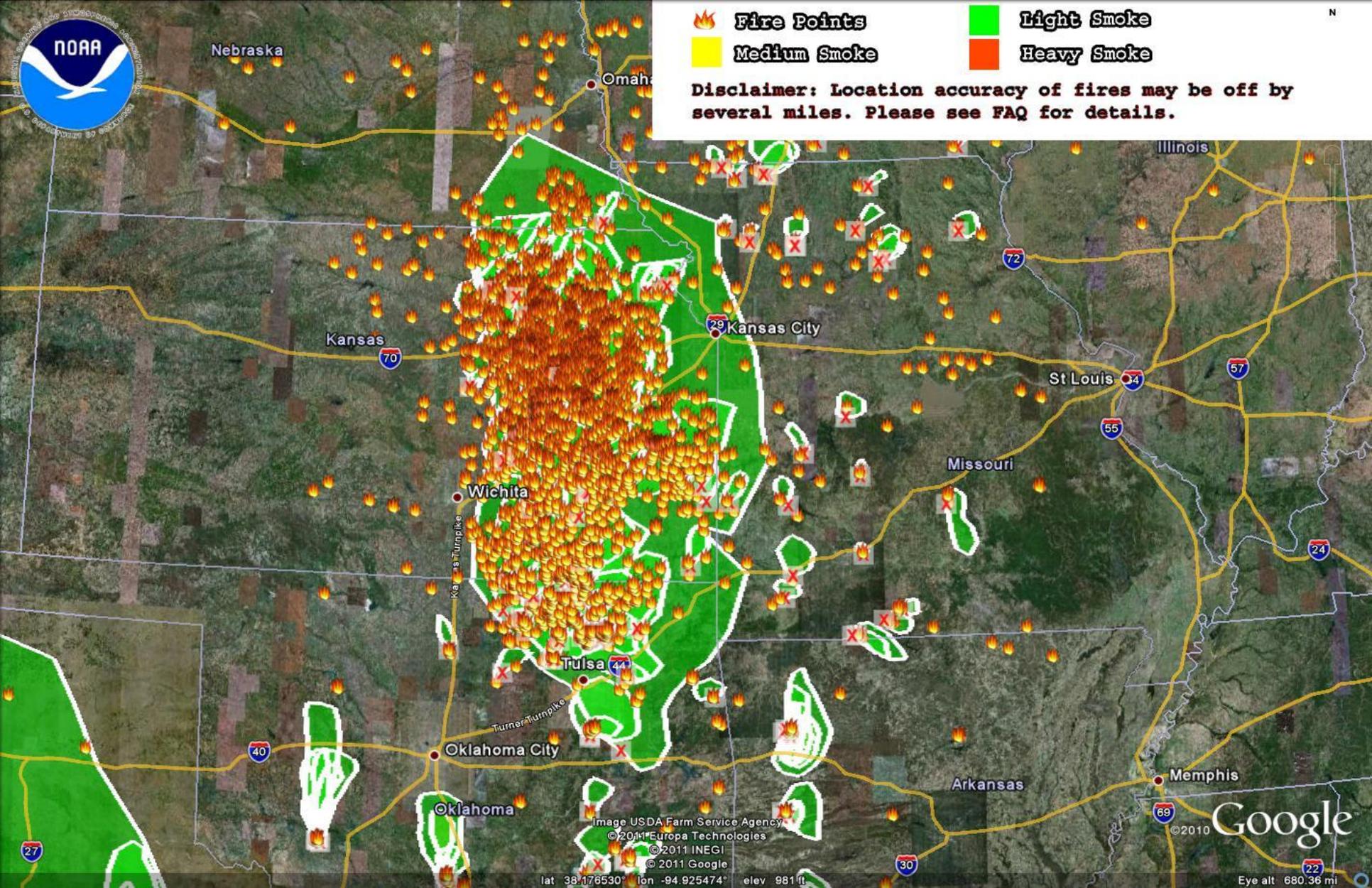


April 2011 Monitoring Results

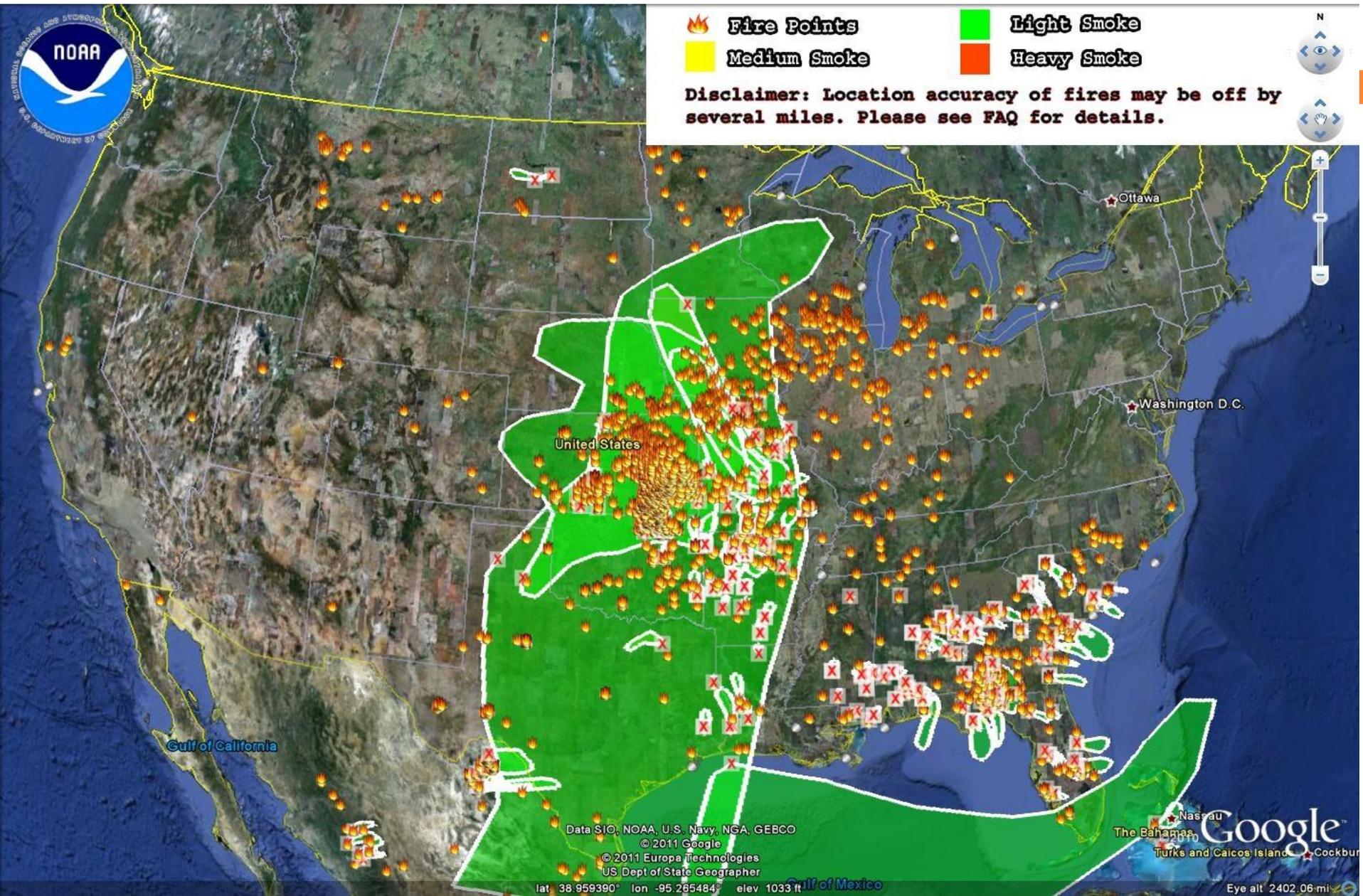
Date	Location	Pollutant	Concentration
April 6, 2011	Mine Creek	Ozone	76 ppb
April 6, 2011	Wichita - HD	Ozone	79 ppb
April 6, 2011	Wichita - Peck	Ozone	82 ppb
April 12, 2011	Konza Prairie	Ozone	78 ppb*
April 12, 2011	Topeka - KNI	Ozone	84 ppb
April 13, 2011	KC, Mo	Ozone	76 ppb
April 13, 2011	Konza Prairie	Ozone	79 ppb*
April 29, 2011	Wichita - Sedgwick	Ozone	82 ppb
April 29, 2011	Wichita - Peck	Ozone	77 ppb

*- CASTNET site that is not run by KDHE BOA

April 12, 2011 Satellite Fire and Smoke Plume

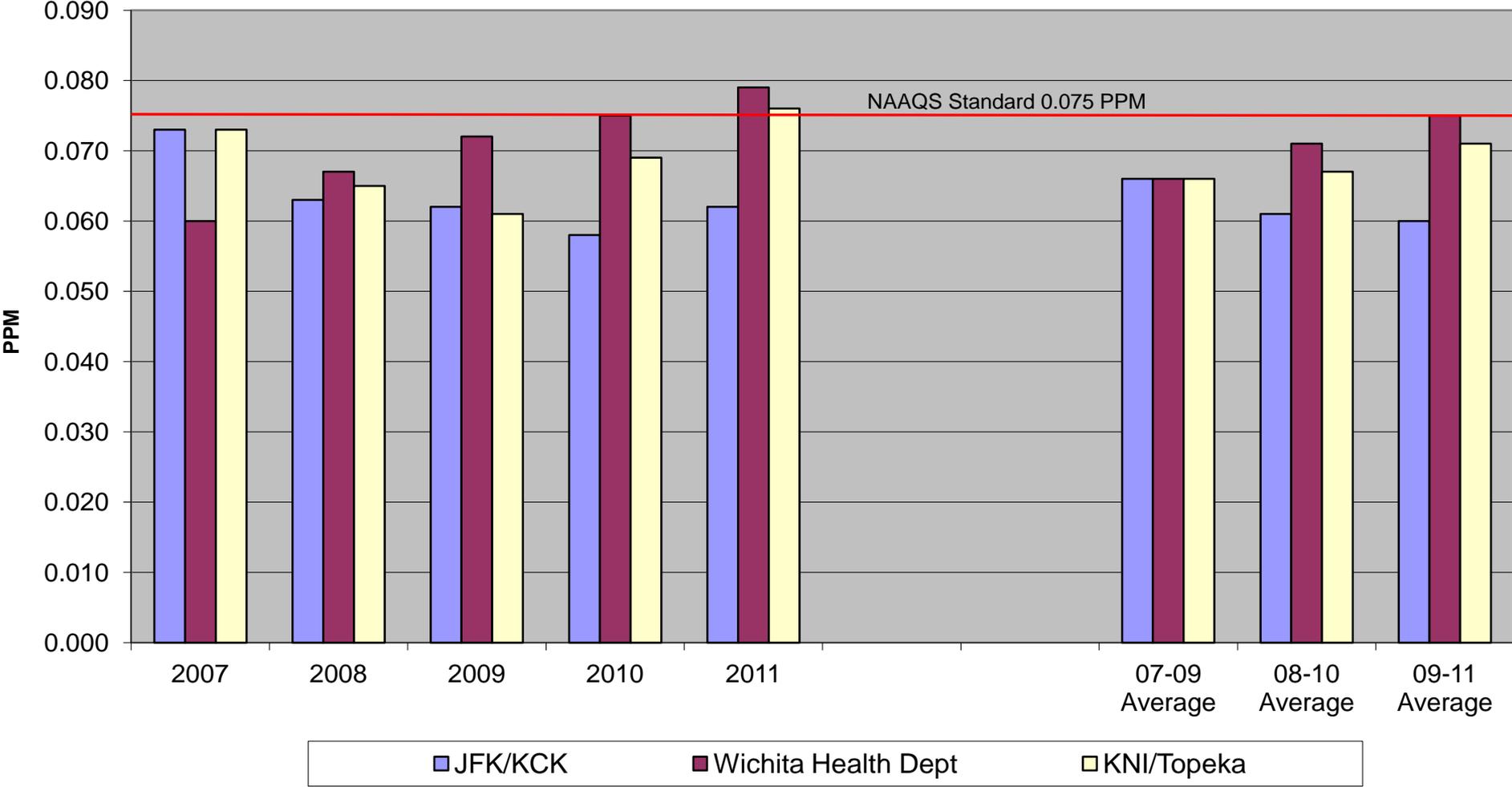


April 13, 2011 Satellite Fire and Smoke Plume



Annual 8 Hour Ozone 4th Highs

All 2011 data have not been through QA/QC process



Ozone/SMP Next Steps....

- Smoke Management Plan
 - Improve forecasting model
 - Prepare request for exceptional event data flag
 - Expand and continue outreach
- Waiting on EPA confirmation of attainment designation.
- Installation of NO_x controls on BPU's two plants underway.
- Waiting for EPA to conclude that the interstate transport component of our ozone SIP is inadequate.
- Waiting for outcome of 2013 review of standard.

SO₂ Standards NAAQS – History

- EPA first set NAAQS for SO₂ in 1971:
 - 140 parts per billion (ppb) 24-hour primary standard
 - 30 ppb annual average primary standard
 - 500 ppb 3-hour average secondary standard
- Last review completed in 1996 – EPA did not revise.
- New 1-hour primary standard of 75 ppb (196.5 µg/m³).
- 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations.

<i>Name</i>	Mine Creek	Peck	Cedar Bluff	JFK
<i>County</i>	Linn	Sumner	Trego	Wyandotte
<i>Design Value (ppb)</i>	11.3	7.0	3.0	45.0

SO₂ Standard Attainment Timeline

- Jun 2010 - New standard promulgated.
- Jun 2011 – States submit designation recommendations (KS: unclassifiable).
- Jun 2012 – EPA finalizes designations.
- Jun 2014 – States send attainment Implementation Plans for nonattainment areas.
- Aug 2017 – Initial attainment date for all areas.

SO₂ Next Steps....

- KDHE conducts screening modeling to screen out sources.
- Sources or KDHE conduct refined modeling.
- Determine which sources need additional controls.
- Develop agreements or regulations.
- Develop Maintenance State Implementation Plan.
- Approval by EPA.
- Attain new standard.

Mercury and Air Toxics History

- 1990: Clean Air Act first provides authority for EPA to address power plants toxic emissions.
- 1998: EPA released “Utility Toxics Study Report.”
- 2000: EPA listed power plants for regulation under the CAA air toxics provisions (MACT rules).
- 2005: EPA delisted power plants under the MACT rule.
- 2005: EPA issued Clean Air Mercury Rule....a cap and trade program.
- 2008: DC Circuit Court vacated Clean Air Mercury Rule.
- 2011: EPA proposed and finalized section 112(c) air toxics standards for all coal and oil-fired EGUs.

Mercury and Air Toxics Standards

- December 21, 2011 – EPA sets limits for mercury, acid gases and other toxic pollutants from new and existing coal- and oil-fired EGUs.
 - Mercury, Arsenic, Chromium, Nickel, and Acid gases....HCL and HF
- EPA also revised NSPS to limit emissions of particulate matter (PM), sulfur dioxide (SO₂) and nitrogen oxides (NO_x) for:
 - Fossil-Fuel-Fired Electric Utility;
 - Industrial-Commercial-Institutional Boilers.
- Sources get 3 years to comply.
- State may grant 1 additional year if need demonstrated.
- Potential for 1 more year if needed for reliability at critical units.

Affected Sources

- MATS applies to EGUs larger than 25 megawatts (MW) that burn coal or oil.
- Many coal-fired plants already meet portions of the standards.
- Establishes emission standards and/or other requirements for each subcategory identified:
 - ▣ Two subcategories of coal-fired EGUs...based on fuel type;
 - ▣ Four subcategories of oil-fired EGUs...based on size and location;
 - ▣ A subcategory for IGCC units;
 - ▣ Work practice standards for start-up and shut-down.
- Kansas has 16 coal-fired units subject to rule.

MATS Requirements

- For existing and new coal-fired EGUs, emission limits for:
 - Mercury;
 - PM (a surrogate for toxic non-mercury metals);
 - HCl (a surrogate for all toxic acid gases).
- For existing and new oil-fired EGUs, emission limits for:
 - PM (a surrogate for all toxic metals);
 - HCl and HF.
- For power plants burning certain fuels, alternative emission standards including:
 - SO₂ (as an alternate to HCl);
 - Individual non-mercury metal air toxics (as an alternate to PM);
 - Total non-mercury metal air toxics (as an alternate to PM).

Changes from Proposed Rule

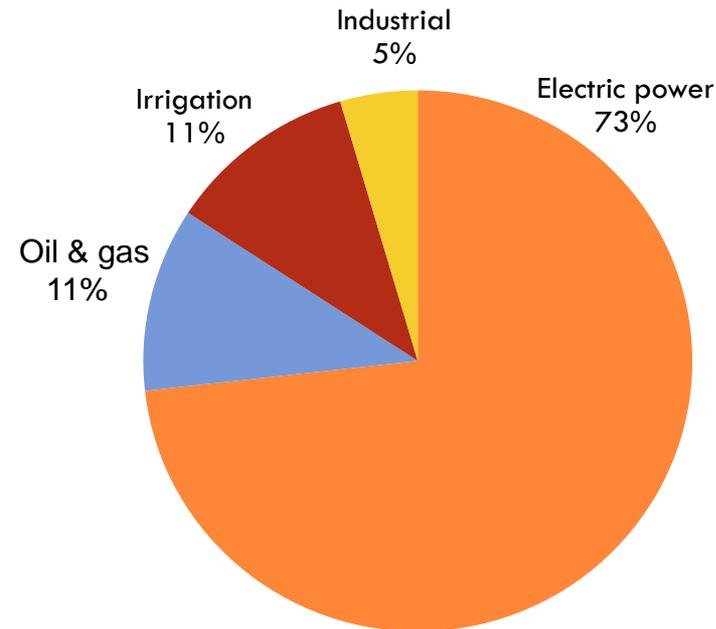
- 900,000 comments received by EPA.
- Using filterable PM instead of total PM as a surrogate for non mercury metals.
- Clarified definitions of subcategories for coal units.
- Work practice standards during start-up and shut-down.
- Longer averaging time for mercury emission rates.
- Streamlined monitoring and recordkeeping requirements.

RICE MACT and NSPS

- RICE MACT (NESHAP)
 - Applies to existing, new, and reconstructed stationary engines (both CI and SI);
 - Hazardous air pollutants (HAPs) – formaldehyde;
 - Established under CAA section 112.
- Compression Ignition/Spark Ignition ICE NSPS
 - Applies to new, modified, and reconstructed stationary CI/SI engines;
 - Criteria pollutants – PM, CO, NO_x;
 - Established under CAA section 111.
- Applies to agricultural, industrial, municipal and commercial engines.

Stationary RICE Sources Nationwide

Applications



- ▶ ~1.5 million stationary engines in U.S.
 - ▶ 78% CI, 22% SI
 - ▶ ~ 900,000 used for emergency power
- ▶ Sizes range from <1 HP – 10 MW
- ▶ Main HAP emitted:
formaldehyde, acetaldehyde,
acrolein, methanol, and PAH
- ▶ Main criteria pollutants emitted:
NO_x, CO, VOC, PM

RICE NESHAP Timeline

	MAJOR SOURCES		AREA SOURCES	
≤ 500 HP	EXISTING 2010 rules	NEW 2008 rule	EXISTING 2010 rules	NEW 2008 rule
> 500 HP	EXISTING 2004 rule 2010 rule (non-emergency CI)	NEW 2004 rule	EXISTING 2010 rules	NEW 2008 rule

RICE MACT and NSPS Requirements

- Requirements are based on following criteria:
 - Engine horsepower;
 - Compression or spark ignition;
 - Fuel type;
 - Air/fuel ratio – rich or lean burn;
 - 2- stroke or 4-stroke cycle;
 - How the engines are used...emergency.

RICE MACT and NSPS Requirements

- Requirements start with notification and may include:
 - ▣ Best Management Practices;
 - ▣ Reporting;
 - ▣ Limits on hours of operation;
 - ▣ Performance testing;
 - ▣ Retrofitting existing units with catalysts;
 - ▣ New engine standards.

2012 RICE MACT Update

- EPA Settlement Agreement: Allows substitution of testing for VOCs instead of formaldehyde (less expensive).
- EPA Settlement Agreement: Emergency demand response program from 15 to 60 hours per year or the minimum hours required by Independent System Operator tariff, whichever is less. Reconsideration of rule part of CA. (Jan 2012).
- Reconsidering part of rule for Peak Shaving: in response to Nat. Rural Elec. Coop. Assn. (October 2011).

KDHE RICE Implementation Process

- Continuing compliance assistance and outreach.
- State RICE engine rule package for MACT and NSPS will be proposed together.
- Working on policy and regulation changes to reduce burden on area sources such as agricultural engines.
- Developing streamlined notification process.
- Developing web – based approval process to speed up permitting.

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Our Vision – Healthy Kansans living in safe and sustainable environments.