

May 31, 2006

Contact – Michael Hogan

Workgroup Recommendations and Other Potential Control Measures
Stationary Combustion Sources Workgroup

SCS006A – Coal fired EGU Boilers

<p>Control Measure Summary: Revise N.J.A.C 7:27-10 to require 0.15 lb/MMBtu or at least 95% SO₂ control from these sources. Revise N.J.A.C 7:27-4 to require 0.015 to 0.030 lb/MMBtu or at least 99.9% particulate control from these sources. Revise N.J.A.C 7:27-19 to require a maximum NO_x emission of 0.12 lb/MMBtu (after 2009) and 0.08 lb/MMBtu (after 2012).</p>	<p align="center">Emissions (tons/year) in NJ State</p>	
<p>2002/2009 existing measures: These units are typically intermediate load electrical generating units (EGU) and as such are called on regularly to produce electricity. New Jersey currently has 10 coal fired EGU boilers. 3 of these boilers are currently equipped with a scrubber (to control SO₂ emissions) and a baghouse (to control particulate emissions). One other boiler is equipped with a baghouse, but not a scrubber. The utility industry in New Jersey has signed consent decrees requiring 4 more boilers to be equipped with a scrubber and 1 more boiler to be equipped with a baghouse. This still leaves three boilers without a scrubber and 5 boilers without a baghouse. This measure would require all EGU units to meet the same standards.</p> <p><i>*Based on DOE factors for energy consumption by electric generators, a growth factor of 1.08 was used to project 2013 emissions based on 2002 emission inventory data from sources at major facilities.</i></p>	<p>NO_x in 2002: NO_x in 2009:</p>	<p align="center">N/A N/A</p>
	<p>SO₂ in 2002: SO₂ in 2013:</p>	<p align="center">46,460 tpy 50,180* tpy</p>
	<p>PM in 2002: PM in 2013:</p>	<p align="center">3,980 tpy 4,300 tpy</p>
<p>Candidate measure 1: Revise N.J.A.C. 7:27-10 to allow a maximum SO₂ emission rate of 0.15 lb/MMBtu (typically 95% reduction). <i>Control Example: scrubber</i> <i>Emission Reductions:</i> 95% reduction in SO₂ from 2002 levels in 2013 <i>Control Cost:</i> \$800 to \$1,500 per ton* <i>Timing of Implementation:</i> Full implementation by 2013 <i>Implementation Area:</i> New Jersey – statewide.</p> <p><i>*Based on Midwest Regional Planning Organization (RPO) – Identification and Evaluation of Candidate Control Measures, “Table A.1 – SO₂ Control Measure Summary for EGUs”.</i></p>	<p align="center">NO_x 2013 Reduction: 2013 Remaining:</p>	<p align="center">N/A</p>
	<p align="center">SO₂ 2013 Reduction: 2013 Remaining:</p>	<p align="center">57,670 tpy 2,510 tpy</p>
	<p align="center">PM 2013 Reduction: 2013 Remaining:</p>	<p align="center">N/A</p>

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<p>Candidate measure 2: Revise N.J.A.C. 7:27-4 to allow a maximum Particulate emission rate of 0.015 to 0.030 lb/MMBtu (typically 99.9% reduction). <i>Control Example: baghouse *</i> <i>Emission Reductions:</i> 99.9% reduction in particulates from 2002 levels in 2013. <i>Control Cost:</i> To be determined <i>Timing of Implementation:</i> Full implementation by 2013 <i>Implementation Area:</i> New Jersey – statewide.</p> <p><i>*Existing ESP acceptable if less than 0.030 lb/MMBtu.</i></p>	<p>NOx 2013 Reduction: 2013 Remaining:</p>	N/A
	<p>SO2 2013 Reduction: 2013 Remaining:</p>	N/A
	<p>PM 2013 Reduction: 2013 Remaining:</p>	4,290 tpy 10 tpy
<p>Candidate Measure 3*: Adopt Phase I OTC/LADCO joint proposal by 2009 (system wide NOx rate of 0.12 lbs/MMBtu) <i>Control Example: SCR & emissions averaging</i> <i>Emission Reductions:</i> 56% reduction in NOx from 2002 levels in 2009 <i>Control Cost:</i> To Be Determined <i>Timing of Implementation:</i> Assume interim reductions based on Phase I limits area achieved in 2009 <i>Implementation Area:</i> New Jersey - statewide.</p> <p><i>* Based on “Summary of OTC Candidate Control Measures (whitepaper) – dated 3/30/06”</i></p>	<p>NOx 2009 Reduction: 2009 Remaining:</p>	TBD TBD
	<p>SO2 2009 Reduction: 2009 Remaining:</p>	N/A
	<p>PM 2009 Reduction: 2009 Remaining:</p>	N/A
<p>Candidate Measure 4*: Adopt Phase II OTC/LADCO joint proposal by 2013 (system wide NOx rate of 0.08 lbs/MMBtu) <i>Control Example: SCR</i> <i>Emission Reductions:</i> 68% reduction in NOx from 2002 levels in 2013 <i>Control Cost:</i> To Be Determined <i>Timing of Implementation:</i> Assume interim reductions based on Phase II limits area achieved in 2013 <i>Implementation Area:</i> New Jersey - statewide.</p> <p><i>* Based on “Summary of OTC Candidate Control Measures (whitepaper)</i></p>	<p>NOx 2012 Reduction: 2012 Remaining:</p>	TBD TBD
	<p>SO2 2012 Reduction: 2012 Remaining:</p>	N/A

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– dated 3/30/06”	PM 2012 Reduction: 2012 Remaining:	N/A
<p>Policy Recommendation of State/Workgroup Lead: Adopt rules reducing the N.J.A.C. 7:27-10 allowable SO₂ emission rate from combustion of coal to 0.15 lb/MMBtu. This reduction can be achieved through installation of a scrubber. Adopt rules at N.J.A.C. 7:27-4 to set allowable particulates emission rate from combustion of coal at 0.015 to 0.030 lb/MMBtu. This reduction can be achieved through installation of a baghouse or equivalent control. Adopt rules reducing the N.J.A.C. 7:27-19 allowable NO_x emission rate from combustion of coal to 0.12 lb/MMBtu (as of 2009) and 0.08 lb/MMBtu (as of 2012). This reduction can be achieved through installation of a SCR.</p>		
<p>Brief Rationale for Recommended Strategy: Combustion of coal produces a large amount of SO₂, NO_x and particulate emissions. These high emission rates coupled with the high equipment use factor results in high annual SO₂, NO_x, and particulate emissions. Installation of a scrubber has the potential to reduce SO₂ emissions by at least 95%; installation of SCR has the potential to reduce NO_x emissions by over 90% and installation of a baghouse has the potential to reduce particulate emissions by at least 99.9%. Due to their significant potential for SO₂, NO_x and particulate emission reduction and corresponding effect on ozone and fine particulate non-attainment, these control devices are strongly recommended. The OTC is also promoting these control methods.</p> <p>According to NJ’s estimate, a 95% SO₂ emission reduction from each coal fired EGU boiler, within the state, that is not currently equipped with a scrubber, would have the potential to reduce SO₂ emissions by over 50,000 tons each year; and a 99.9% particulate emission reduction from each coal fired EGU boiler, within the state would have the potential to reduce particulate emissions by over 4,000 tons each year, from NJ alone.</p>		