

**DRAFT**

## **Control Strategy Short List Review**

**POINT**

**North Central Texas Council of Governments**

**September 23, 2005**

**Please get us your comments by Wednesday September 28, 2005.**

**There are four ways to get us your comments:**

**OPTION 1: Website**

**[http://www.dfwcleanair.com/sip/new\\_comments.asp](http://www.dfwcleanair.com/sip/new_comments.asp)**

**OPTION 2: Email**

**Carrie Reese            creese@nctcog.org**  
**Amanda Brimmer      abrimmer@nctcog.org**

**OPTION 3: Phone**

**Carrie Reese            (817) 608-2353**  
**Amanda Brimmer      (817) 608-2354**

**OPTION 4: Fax**

**NCTCOG                (817) 640-3028**  
**Attn: Carrie Reese or Amanda Brimmer**  
**Subject: Comments on Control Strategy Short List**

**Draft  
Point Source Short List**

NCTCOG ID #	Control Strategy	Details	Sum Up
<b>Boilers</b>			
10	NOx reductions from refinery boilers, steam generators, and process heaters – NOx.	Refinery boilers, heaters and steam generators typically burn commercial grade natural gas and have significant emissions of NOx, particularly when uncontrolled. This measure focuses on the larger boilers and represents control technology that would require over 90 percent reductions from uncontrolled levels.	A 5 ppm NOx limit corrected to 3% O2, or 0.0062 lb/MMBtu standard for large refinery boilers and process heaters (larger than 110 MMBtu). Cost-effectiveness would range from \$1,000 to \$10,000 per ton of NOx depending on the control technology (either SCR or SNCR), the size of the unit and the operating characteristics of the boilers.
9	Industrial, commercial and institutional (ICI) boilers – NOx.	ICI boilers typically burn commercial grade natural gas and have significant emissions of NOx, particularly when uncontrolled. This measure focuses on the entire range of boilers sizes and represents control technology that would require a range of 30 to 80 percent reductions from uncontrolled levels depending on the area.	Expand existing 4 county DFW NOx controls to 5 new counties. Apply HGB emission specifications to 9 counties. Cost-effectiveness would range from approximately \$1,000 to \$7,000 /ton of NOx depending on the control technology, the size of unit and the operating characteristics of the boiler.
7	Apply 90% SO2 and 80% NOx reduction (similar to Best Available Retrofit Technology [BART]) to all medium and large industrial, commercial, and institutional (ICI) boilers.	This measure would require that all medium and large ICI boilers be retrofitted with control technology that would achieve 80 percent control from uncontrolled levels.	Cost-effectiveness would range from approximately \$1,000 to \$7,000 /ton of NOx depending on the control technology, the size of unit and the operating characteristics of the boiler.
8	Apply Likely Controls (90% SO2 and 80% NOx Reduction) to industrial, commercial, and institutional (ICI) boilers subject to the proposed Best Available Retrofit Technology (BART) requirements.	This measure would be identical to measures NCTCOG # 7 above as it applies to NOx controls.	See NCTCOG # 7 above.
12	Apply 40% SO2 and 60% NOx reduction to all medium and large industrial, commercial, and institutional (ICI) boilers.	The measure would reduce the NOx requirements for medium and large size boilers to no more than 60 percent.	Control technology for this measure would likely be SNCR or other control techniques that are more cost-effective. For example, SNCR would range from \$1,000 to \$1,500 per ton of NOx.

NCTCOG ID #	Control Strategy	Details	Sum Up
<b>Combustion</b>			
28	Gas-fired stationary internal combustion engines – VOC.		Assign VOC emission specification.
31	Gas-fired engines - NOx.	These engines are used in a wide variety of applications ranging from hospitals and schools to many industrial applications but primarily are used in the natural gas industry and the petroleum refining industry. The sizes of engines range from 35 horsepower to 1340 horsepower and primarily burn natural gas or diesel fuel.	Apply HGB emission specification to the 9 counties and remove the exemption for engines less than 300 hp. Control techniques depend on the type of engine (2-stroke, 4-stroke, and rich or lean burn). Rich burn stationary IC engines are most commonly used at natural gas production facilities. Cost-effectiveness ranges from \$1,000 to greater than \$8,000 depending on the control technology, the size of unit and the operating characteristics of the engine.
<b>Electric Generating Utilities</b>			
43	Electric generating facilities – NOx.	The majority of emissions from utility boilers are produced by coal-fired power plants. Many of these units are equipped with overfire air (combustion controls) and Low NOx burners. Secondary controls, which include methods such as selective catalytic reduction (SCR) and selective non-selective catalytic reduction (SNCR) techniques, have not been employed on these units. Use of these controls will provide most significant emission benefits.	Apply HGB emission specifications in 9 counties - Apply HGB emission specifications to East Texas. Expand existing 4 county DFW NOx controls to 5 new counties in 8-hr ozone NAA. Cost-effectiveness ranges from \$700 to greater than \$5,000 depending on the control technology, the size of unit, the fuel used and the operating characteristics of the utility boiler.
<b>Kiln Operations</b>			
70	Lime kilns – NOx.	NOx emissions depend on the quality of the lime produced and the design of the kiln. Control technologies other than Low-NOx burners have not been extensively applied in the lime industry.	Apply HGB emission specifications to 9 counties.
68	Aggregate Kilns – NOx.	NOx emissions depend on the design of the kiln. Control technologies other than Low-NOx burners have not been extensively applied to these kilns industry.	Apply HGB emission specifications to 9 counties.

NCTCOG ID #	Control Strategy	Details	Sum Up
69	Brick Kilns – NOx.	NOx emissions depend on the design of the kiln. Control technologies other than Low-NOx burners have not been extensively applied in this industry.	
64	Apply reasonably available controls (90% SO2 and 50% NOx reduction) to all cement kilns in the region.	This measure would apply control technologies that are less costly in terms of capital costs to reduce NOx from Cement Kilns.	Cost-effectiveness ranges from \$500 to greater than \$3,500 depending on the control technology, the size of unit, the fuel used and the operating characteristics of the utility boiler.
66	Cement kilns – NOx.	In cement manufacturing, conditions favorable for formation of nitrogen oxides (NOx) are reached routinely because of the high process temperatures involved. Essentially all of the NOx emissions associated with cement manufacturing are generated in the kilns.	Depending on the type of kiln, LoTOx-Selective Noncatalytic Reduction - Selective Catalytic Reduction (SNCR- SCR) are available control technologies. Cost-effectiveness ranges from less than \$1,000 to more than \$5,000 depending on the type of kiln, fuel used and operating characteristics.
<b>Pulp and Paper</b>			
95	Pulping liquor furnaces – NOx.	NOx emissions depend on the design of the furnaces.	Apply HGB emission specifications to 9 counties.
<b>Surface Coating</b>			
106	General surface coating application – VOC.	This measure would apply the general requirements for VOC content or alternative control plans.	Texas Administrative Code, Sections 115.420 - 115.429 can be expanded for 5 counties in Dallas-Fort Worth.