

DRAFT

Control Strategy Short List Review

AREA

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

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
Area Source Short List**

NCTCOG ID #	Control Strategy	Details	Sum Up
Asphalt Paving/Roofing			
7	Cutback asphalt; Control Measure: Switch to emulsified asphalt. Includes former Measure 10.	Conventional cutback asphalt releases VOCs for over a year after application. Develop state rule (revise existing rules) that would prohibit the sale or transport of conventional cutback asphalt. Encourage the use of low-emission emulsion asphalt and hot-mix asphalt by reducing the VOC upper limit in the definition of "exempt cut-back asphalt" as lower emission asphalt becomes available. This is for 100km range. Includes additional controls on equipment used for commercial roofing, etc.	Cutback asphalt is a paving grade of asphalt liquefied with petroleum distillates and generally classified as medium or rapid cure. VOC emissions can be reduced by limiting the use of asphaltic materials and the allowable application temperature. Further emission reductions may be possible by extending a rule to include asphalt roofing operations. Such operations heat the asphalt to allow application on large industrial facilities. The heating of the asphalt in large kettles results in fugitive VOC emissions. Possible controls for such kettles include close-fitting lids tightly controlled operating temperatures, and afterburners. The San Joaquin Valley APCD is considering a cutback asphalt application rule in its ozone planning, and the Metropolitan Sacramento AQMD is also reviewing the rule.
8	Adopt South Coast Air Quality Management District 1108.1 VOC content limit (50% reduction) for emulsified asphalt.	A person shall not sell or offer for sale for use in the District, or use any emulsified asphalt containing organic compounds which evaporate at 260 degrees C(500 degrees F) or lower as determined by ASTM Method D244 (AASHTO T59), or other test method as approved by the Executive officer.	This regulation has been in effect in the SCAQMD, and many other Districts in California and other states, since 1979, and last amended in November 1983.

NCTCOG ID #	Control Strategy	Details	Sum Up
Coatings and Solvents Measures			
16	<p>Auto body refinishing and coatings controls. Extend the existing Illinois/Indiana/Wisconsin Reasonably Available Control Technology (RACT) regulations (55% reduction from uncontrolled, 24% reduction beyond Part 59 limits) to all counties. Combined this with NCTCOG # 45. Extend the existing Illinois/Indiana/Wisconsin Reasonably Available Control Technology (RACT) regulations (55% reduction from uncontrolled, 24% reduction beyond Part 59 limits) to all counties.</p>	<p>An Alternative Control Technique (ACT) Document for automobile refinishing was published in September 1988 with recommended VOC content limits for State consideration. In September 1998, under Section 183 of the 1990 Clean Air Act Amendments, EPA published standards limiting the VOC content in coatings sold for automobile refinishing (40 CFR Part 59, Subpart B). Manufacturers are prohibited from selling coatings after January 1999 that do not comply with the Subpart B limits. Illinois, Indiana, and Wisconsin have adopted rules for limiting emissions from the automobile finishing facilities with geographic applicability limited to the 1-hour ozone nonattainment counties. The requirements include VOC content limits that mirror the Subpart B requirements. In addition, the rules include requirements for use of high transfer-efficiency painting methods and controls on emissions from equipment cleaning, housekeeping activities, and operator training. No requirements for refinishing were identified for Michigan and Ohio. SCAQMD Rule 1145 contains VOC content limits more stringent than the federal rule Recommendation: Candidates for strengthening RACT include (1) extending the existing IL/IN/WI RACT regulations from the 1-hr nonattainment counties to the 8-hr nonattainment counties. This is based on the EPA's proposed standards to reduce VOC from coatings and increasing the efficiency of spray nozzles in applying coatings. The current rule could be made stricter and made similar to other states' rules. The measure would extend the existing IL/IN/WI RACT regulations from the 1-hr nonattainment counties to the 8-hr nonattainment counties. Emission reductions of 55 % from uncontrolled levels with an incremental reduction of 15-24 percent from 2002 levels depending on the geographic coverage.</p>	<p>Based on adopted requirements. Control Costs: \$1354 per ton.</p>

NCTCOG ID #	Control Strategy	Details	Sum Up
21	Adopt more stringent VOC limits (21% reduction beyond Federal Part 59 limits) for architectural and industrial maintenance (AIM) coatings based on Ozone Transport Commission (OTC) Model Rule and Wisconsin NR433.17.	Estimated to provide a 31% reduction over the federal rule. C/E given at \$ 6,400 per ton. Data from Pechan TSD report on OTC model rules.	Appears to be more practical and cost-effective alternative to SCAQMD Rule 1113, as amended in 2004.
24	Furniture and fixtures surface coating (metal furniture scc).	For the coating of metal furniture, low VOC coatings would be used and/or the addition of control devices for preventing airborne emissions. The current rule could be made stricter and made similar to other states' rules. Estimated C/E at >\$6000 per ton, but it may be smaller.	Based on existing requirement of rules in other states.
22	Sheet, strip and coil surface coating.	For the coating of metal sheet, strip, and coils, low VOC coatings would be used and/or the addition of control devices for preventing airborne emissions. The current rule could be made stricter and made similar to other states' rules. Estimated C/E at >\$6000 per ton, but it may be smaller.	Based on existing requirement of rules in other states.
25	Machinery & equipment, miscellaneous metal parts & products surface coating; Maximum Achievable Control Technology (MACT) Standard.	For the coating of various metal parts, low VOC coatings would be used and/or the addition of control devices for preventing airborne emissions. The current rule could be made stricter and made similar to other states' rules. 100 km range. The surface coating of miscellaneous metal parts and products is a process of applying a protective, decorative, or functional coating to metal parts of items such as railcars, steel drums, construction equipment, iron and steel pipe, structural steel, extruded aluminum products, motorcycles, musical instruments. Coating materials include, but are not limited to, paints, stains, sealers, topcoats, basecoats, primers, inks, and adhesives. Estimated C/E at >\$6000 per ton, but it may be smaller.	Based on existing requirement of rules in other states.
23	Coil, leather, large appliance, metal, furniture, aerospace, automotive, brake shoe and can coatings.	Control VOC Emissions from a Variety of Painting and Coating Operations. EAP SIP for Washington County MD has requirement for AIM rules for most industrial coating categories. This is presumably the same as the OTC rule.	Measure based on adopted requirements in other states.

NCTCOG ID #	Control Strategy	Details	Sum Up
Consumer Products			
33	Consumer products (personal care products); Federal consumer solvent rule (V24901*); California Air Resources Board consumer products mid-term limits (V24902*).	The CARB Mid-term consumer products limits achieved VOC emission reductions of approximately 21 tons per day in California by the end of 2005, with full implementation of all proposed standards. This emission reduction equates to a 9 ton per day reduction in the South Coast Air Basin in 2010. The proposed measures would set limits for 17 product categories including Automotive Brake Cleaners, Automotive Windshield Washer Fluids, and Air Fresheners.	The estimated actual emissions from these categories in California were about 54 tpd. The reduction in VOC emissions from the proposed limits is expected to be about 21 tpd based on 1997 sales data.
34	Substitute cleaner "green" products for traditional cleaning products.	This measure would require the substitution of green products for traditional cleaning products. Cleaner "green" products are not defined. However, the CARB consumer product regulations contain a number of cleaning products including General Purpose Cleaners, Bathroom and Tile Cleaners, Carpet and Upholstery Cleaners and Oven Cleaners. Therefore this would be a subset of the measure to adopt the CARB consumer product regulations (NCT COG # 28 and 33).	
37	Commercial and consumer products requirements (coatings and related products; adhesives and sealants; miscellaneous); SCC 2460500000, 2460600000, 2460900000.	This measure would be the adoption of consumer product regulations already in effect in California, and other areas.	Reduce VOCs emitted from consumer products in homes and institutions. Reductions are achieved by reformulation of the products. "Consumer product" means a chemically formulated product used by household and institutional consumers (i.e. detergents; cleaning compounds; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings).

NCTCOG ID #	Control Strategy	Details	Sum Up
Control Technologies			
44	Adopt Reasonably Available Control Technology (RACT) regulations (90% from uncontrolled), lower applicability thresholds, and extend geographic coverage to all counties.	This control measure would strengthen RACT requirements by reducing the allowable VOC levels in coating or as an alternative achieve a 90 % overall control efficiency with add-on control systems. The BAAQMD has adopted such limits for surface coatings used in can coating operations. The BAAQMD, SCAQMD also have requirements for paper coatings as does the Chicago and Metro East Areas. For can coating operations, the BAAQMD has the most stringent with one exception that the SCAQMD requires 0.0 lbs VOC/gal-less water for the application of end sealants during the production of non-food cans. (The Bay Area limit is 0.1 and the CTG recommendation is 3.7 both for all end sealant use).	Adopting the Chicago and Metro East measures in additional counties would achieve a reduction of 38 to 65 % at a cost effectiveness of \$1400 per ton.
Degreasing			
48	Adopt Chicago/Metro East cold cleaning regulations (66% reduction from uncontrolled) in all counties. <i>Includes duplicate control measures #49 and #51.</i>	The CTG for solvent metal cleaning, including cold cleaning, was published in November 1977. A MACT standard for Halogenated Solvent Cleaners was promulgated in December 1994. The 5 LADCO states have adopted requirements based on the CTG recommendations but with varying geographic and size applicability criteria. A candidate for strengthening RACT cold cleaning requirements is the inclusion of limits on the volatility of cleaning solvents. Two options are currently in use: (1) vapor pressure maximum of 1 mm Hg at 68°F (current requirement in Chicago, Metro East, selected Indiana counties, Maryland, New Jersey) or (2) VOC content limit of 25 gm/liter (0.21 lbs/gal) (SCAQMD). Another candidate for strengthening RACT is to expand the applicability of the control requirements in the MACT from the six listed HAPs to all VOCs, thus adding vapor degreasers that are using VOC solvents other than the listed HAPs. C/E may be lower than estimated.	Measures in effect in other states. Appear to be practical and relatively cost-effective.

NCTCOG ID #	Control Strategy	Details	Sum Up
Dry Cleaning			
53	Expand control requirements applicable to petroleum dry cleaners and cleaning solvents, including naphtha dry cleaning controls. <i>Includes former control measure #52.</i>	Implement contingency rule requiring that dry cleaning facilities must comply with dryer, filtration system, and fugitive emissions requirements. Establish compliance date for 30 TAC §§115.552 - 115.559 and expand to cover other 5 counties in Dallas-Fort Worth. The proposed measure lowers the exemption level based on Naphtha consumption from 3,500 gallons per year to 2,000 gallons per year. The operating cost of the facility would significantly be reduced due to the recovery dryer's lower demand for steam and electricity and the savings that will result from the recovered solvent. It is estimated that a small size facility would be able to pay back the capital cost of its control equipment in seven years using the generated savings only. The cost effectiveness is estimated at \$300 saved per ton of emissions reduced.	Based on existing requirements.
Emission Credits			
56	Area source credits for energy conservation/efficiency.	Measure consistent with ongoing efforts in response to SB5 and SB 7. Energy efficiency measures reduce the demand for electricity and renewable energy can supply energy from non- or less- polluting sources. Additionally, in many areas, the peak demand for electricity frequently coincides with periods of poor air quality.	Implements on-going high priority effort.
Energy Efficiency Measures			
73	Include a measure for stationary fuel cells, photo voltaic and wind power to meet new electric demand in SIP areas.	This measure would require the use of low or zero emitting technologies for generation of electric power. Use of fuel cells, photovoltaic and wind power will result in zero or near zero emissions of NOx.	There is a measure for solar energy to produce electrical power (Measure 215M) but these other technologies are also available to produce electrical power.
81	Efficiency based natural gas rates.	This measure has the potential to reduce natural gas use (encourage conservation) and therefore lower NOx emissions	Setting natural gas rates on an inverted block rate will reward conservation.
Fuel Combustion			
96	Additional regulations for diesel engines placed into service before 10/01/01, not modified, reconstructed or relocated after 10/01/01.	NOx emission specifications should be 11.0g/hp-hr. Certain exemptions may apply.	Technology exists so measure worth further review.

NCTCOG ID #	Control Strategy	Details	Sum Up
97	Additional regulations for all other diesel engines 50 hp and above, installed, modified, reconstructed or relocated after 10/01/01.	NOx emission specifications should be between 2.8 g/hp-hr and 6.9 g/hp-hr, depending on horsepower and the year the engine was installed, modified, reconstructed or relocated. Certain exemptions may apply.	Technology exists so measure worth further review.
102	Additional regulations for stationary gas-fired engines.	NOx emission specifications should be 0.60g/hp-hr for landfill gas and 0.50 g/hp-hr for all others. Certain exemptions may apply.	Technology exists so measure worth further review.
Fueling Activities			
106	Reduce VOC emissions from portable fuel containers. Adopt Ozone Transport Commission Model Rule for portable fuel containers (18% reduction by 2009, 54% reduction at full implementation in 2015). Includes former NCTCOG measure #106.	As an example, Maine's version of the rule in Chapter 155 includes performance standards for portable fuel containers and spouts in order to ensure spill-proof systems. Chapter 155 prohibits any person to sell, supply, offer for sale, or manufacture for sale in Maine, on or after January 1, 2004, any portable fuel container or spout that does not meet all of the specified performance standards. However, there is a one-year sell-through period whereby containers and spouts manufactured before January 1, 2004 may be sold, supplied, or offered for sale until January 1, 2005. The rule also includes the appropriate testing and record keeping requirements to ensure compliance with the specified performance standards.	This is OTC model rule, adopted into SIP in several NE states, including ME. Version also in place in CA. Pechan report (TSD) Table II-5, p. 13 says cost is \$581 per ton.
110	Emission control at gasoline dispensing facilities in Ellis, Johnson, Kaufman, Rockwall, and Parker counties.	Stage II vapor recovery is not currently required in these counties. In lieu of adding Stage II controls to gasoline dispensing facilities (gdf), another approach may be to limit fugitive emissions at gdfs by requiring some commercially available Stage II components.	Technology readily available.

NCTCOG ID #	Control Strategy	Details	Sum Up
109	Gasoline dispenser hoses. Reduce fuel permeation through hoses.	ARB has estimated the cost-effectiveness of this measure to be \$4,000 per ton of ROG emissions eliminated. Emissions may not be in SIP and therefore need to be added to receive credit. At present, hoses used with gasoline dispensers are required to meet the UL 330 standard for safety of hose and hose assemblies for dispensing flammable liquids. Testing required under this standard includes measurement of the rate of gasoline permeation through the hose for which the maximum allowable rate is a 30% loss of the gasoline volume of the hose over a six-day period. CARB is proposing that gasoline dispenser hoses be required instead to meet the gasoline permeation rate requirements of SAE Standard J1527 which set the maximum permeation rate at 100 grams of gasoline per square meter of wetted hose surface area per day. CARB staff has estimated that this measure could reduce hose permeation emissions by approximately 57%.	Available technology and favorable cost effectiveness.
115	Adopt California Air Resources Board Enhanced Vapor Recovery Stage I requirements (98% control) in 8-hour nonattainment areas and adjacent counties.	Emission Reductions: reduction of 30-78% from 2002 levels depending on the geographic coverage \$0 to 2,120 per ton to upgrade existing systems to meet CARB EVR Phase I requirements; \$100 to 4,742 or new systems; dependent on the size of the station (Source http://64.27.125.175/reports/rpo/MWRPOprojects/Strategies/Final%20Control%20Measures.pdf)	Don't know what the control level baseline is in Dallas. Scoring is based on reference data from Midwest. Worth further evaluation based on data from other states.
117	Capture and control vapors from gasoline cargo tankers; Tank Purging.	This measure would require that cargo tanks be purged using an approved method prior to any maintenance or repair being performed. Currently, there are three purging methods available.	Technology available. Worth further analysis.
122	Require air pollution control device (90% control) for underground storage tank vent. (Not a very clear complete description. Assume this applies to otherwise exempt gasoline tanks).	Gasoline Dispensing Facilities. This could be accomplished for gasoline tanks by inclusion in Stage 1 Vapor Recovery measure. According to LADCO analysis, p. 12 C/E almost zero (http://64.27.125.175/reports/rpo/MWRPOprojects/Strategies/Final%20Control%20Measures.pdf).	Worth further review based on LADCO conclusions about feasibility and favorable cost effectiveness.

NCTCOG ID #	Control Strategy	Details	Sum Up
Oil and Gas Production			
141	Glycol dehydrators	<p>There are approximately 30,000 high-pressure, on-shore gas wells producing 4 trillion cubic feet (Tcf) of natural gas annually in the United States. About 700 of these wells have conventional glycol dehydrators, emitting an estimated 1 billion cubic feet (Bcf) of methane per year to the atmosphere. Glycol dehydrators vent methane, volatile organic compounds (VOCs), and hazardous air pollutants (HAPs) to the atmosphere from the glycol regenerator and also bleed natural gas from pneumatic control devices. This process wastes gas, costs money, and contributes to local air quality problems as well as global climate change. Natural Gas STAR partners have found that replacing glycol dehydrators with desiccant dehydrators reduces methane, VOC, and HAP emissions by 99 percent and also reduces operating and maintenance costs. In a desiccant dehydrator, wet gas passes through a drying bed of desiccant tablets. The tablets pull moisture from the gas and gradually dissolve in the process. Since the unit is fully enclosed, gas emissions occur only when the vessel is opened, such as when new desiccant tablets are added. Economic analyses demonstrate that replacing a glycol dehydrator processing 1 million cubic feet per day (MMcfd) of gas with a desiccant dehydrator can save up to \$4,403 per year in fuel gas, vented gas, and operation and maintenance (O&M) costs and reduce methane emissions by 564 thousand cubic feet (Mcf) per year. (Source: http://www.epa.gov/gasstar/pdf/lessons/ll_desde.pdf).</p>	<p>May include requiring installation of condensers or other controls on select glycol dehydration units w/ potential to emit beyond a defined limit. Worth further review because of available technology and favorable cost effectiveness.</p>

NCTCOG ID #	Control Strategy	Details	Sum Up
143	Emission reduction software implementation	<p>Example Software - NOx and Energy Assessment Tool (NxEAT) --The NOx and Energy Assessment Tool (NxEAT) helps plants in the petroleum refining and chemical industries to assess and analyze NOx emissions and application of energy efficiency improvements. Users can inventory emissions from equipment that generates NOx and then compare how various technology applications and efficiency measure affect overall costs and reduction of NOx. By performing "what if" analyses, users can determine optimal and cost effective methods for reducing NOx from systems, such as fired heaters, boilers, gas turbines, and reciprocating engines. The U.S. Department of Energy's NOx and Energy Assessment Tool (NxEAT) is available at no charge to help the petroleum refining and chemicals industries develop a cost-effective, plant-wide strategy for NOx reduction and energy efficiency improvements.</p>	Free assessment tool that may result in easy, low cost NOx reduction from petroleum refining and chemical facilities.
144	Control fugitive emissions from oil & gas production and processing components. Leak reduction through intensified inspection, maintenance and repair. NOTE: Similar to NEP ID # 142 above.	<p>Crude oil and gas production facilities and natural gas processing facilities contain a large number of various types of components such as pipes, flanges, valves, fittings, threaded connections, hatches, pressure relief valves, pumps, and compressors. Leakage of fluids or gases from these components can be expected to occur during process and transfer operations, causing fugitive VOC emissions. The actual percentage of leaking components for most of these facilities may be small, but due to the large number of components the fugitive VOC emissions from leaking components, in aggregate, could be significant. Possible controls include lowering the current gaseous leak threshold of 10,000 ppmv, eliminating some existing exemptions, improving the existing inspection and repair programs by increasing the frequency of inspection, and shortening the repair period for leaking components and replacing frequently leaking components with Best Available Control Technology. The SJVAPCD (CA) adopted Rule 4409 in May 2005. "The overall cost effectiveness of Revised Proposed Rule 4409 is estimated at \$600 per ton of VOC reduced." (Source:</p>	"Good housekeeping" type rule that would save product and reduce emissions. Worth further review.

NCTCOG ID #	Control Strategy	Details	Sum Up
		http://www.valleyair.org/Workshops/postings/04-20-05/PH%202%20Revised%20Final%20Draft%20Staff%20Report.pdf .	
Water Heaters and Boilers			
170	Boilers & Process Heaters. Combined measure NCT COG ID # 171, which proposes a similar measure for boilers down to 2 MMBtu/hr.	Additional regulations can be adopted for minor sources of NOx emissions from boilers and process heaters greater than 2.0 MMBtu/hr. The emission specifications for gas-fired boilers and process heaters should be 0.036lb/MMBtu, or 30 ppmv @ 3.0% O2. This measure already required in Houston (Sections 117.475(c)(1) and 117.534(2)(c)) Estimate C/E >\$4,000 per ton, may be less Facilities with units that are subject to this control measure represent a wide range of industries, including but not limited to medical facilities, educational institutions, office buildings, prisons, military facilities, hotels, and industrial facilities (including agricultural processing facilities).	Proposed in San Joaquin Valley of California is for units 2-5 MMBtu/hr. Several California Air Districts already have such measures.
172	Industrial LPG Boilers. Use of low NOx burners to reduce NOx emissions from small industrial boilers fueled by liquefied petroleum gas (LPG).	Measure not specific enough to analyze in any detail, but similar control requirements exist in other areas.	Worth further review because of technical feasibility and favorable cost effectiveness.