APPENDIX B--OTAG RECOMMENDATIONS

July 8, 1997

Ms. Mary Nichols
Assistant Administrator
Air & Radiation Division
U.S. Environmental Protection Agency
401 M Street, SW (MC-M6101)
Washington, D.C. 20460

Dear Ms. Nichols:

The Ozone Transport Assessment Group (OTAG) has completed its work in accordance with your memorandum of March 2, 1995. Attached please find the recommendations to the U.S. Environmental Protection Agency approved by OTAG. Also attached are states' and stakeholders' comments on the recommendations and identification of the votes cast on each by each state. The technical support documents resulting from OTAG's work will be forwarded as soon as they are completed.

We appreciate the technical and financial support that EPA has provided OTAG over the past two years. We believe that this unprecedented effort of dynamic interaction among state and federal government, industry and environmental stakeholders has demonstrated that diverse interests can work together constructively on important policy issues. We encourage EPA to consider OTAG's recommendations as it proceeds with implementation of the Clean Air Act.

Sincerely,

Mary A. Gade
Chair, Policy Group

Robert C. Shinn, Jr.
Chair, Modeling & Assessment Subgroup

Donald R. Schregardus
Chair, Strategies & Controls Subgroup

Harold Reheis
Chair, Financial Subgroup

Ned O. Sullivan
Chair, Outreach & Communications Subgroup

Recommendation: Additional Modeling and Air Quality Analysis

Based on the conclusions of OTAG, states must have the opportunity to conduct additional local and subregional modeling and air quality analyses, as well as develop and propose appropriate levels and timing of controls. In taking these actions, priority should be given to the serious and severe nonattainment areas of Atlanta, Lake Michigan, and the Northeast, relative to transport. EPA has announced its intention to propose and take final action on a SIP call. States can work together and with EPA toward completing local SIPs including the evaluation of possible local NOx disbenefits, and to build on the modeling and air quality analysis work of OTAG to evaluate EPA's proposed statewide tonnage budgets* in its proposed SIP calls. The initial statewide tonnage budgets proposed by EPA may be revised or shown to be unnecessary or insufficient through additional subregional modeling or air quality analyses. OTAG recommends EPA evaluate states' timely submittal of comments and subregional modeling regarding the proposed statewide budgets prior to EPA's finalizing the SIP calls within 12 months of their proposal.

The Policy Group recognizes that NOx controls for ozone reduction purposes have collateral public health and environmental benefits, including reductions in acid deposition, eutrophication, nitrification, fine particle pollution and regional haze.

*Budget as used in this recommendation does not imply that a cap will be implemented.

Recommendation: Diesel Fuel

OTAG recommends that, by 1999, EPA should evaluate the emission benefits and other effects, such as fuel economy, of cetane adjustments on current technology engines, both on highway and non-road, and, if appropriate, expeditiously adopt and implement standards. OTAG further recommends that the EPA use the existing collaborative process developed as a result of the 1995 statement of principles to identify if new diesel fuel standards are beneficial. If found beneficial and cost-effective, OTAG further recommends that EPA adopt and implement new standards no later than 2004.

ECOS

Ozone Transport Assessment Group

Recommendation: Gasoline

The OTAG states recommend the continued use of Federal Reformulated Gasoline (RFG) in the mandated and opt-in areas.

The OTAG states support state flexibility and encourage the opt-in to the Federal RFG program or other fuel strategies consistent with the Clean Air Act, including those attainment areas which contribute to downwind nonattainment situations or which choose to implement strategies to assist in preventing violations of the National Ambient Air Quality Standard (NAAQS) for ozone.

The USEPA should adopt and implement by rule an appropriate sulfur standard to further reduce emissions and assist the vehicle technology/fuel system achieve maximum long term performance.

ECOS

Ozone Transport Assessment Group

Recommendation:
Vehicle Emission Inspection and Maintenance Controls

- The OTAG states recommend that, where required by the Clean Air Act, appropriate and effective vehicle emission inspection and maintenance (I/M) programs be implemented. The OTAG states additionally recommend that states consider the adoption of enhanced I/M programs in all urbanized areas in the fine grid* with a population greater than 500,000.

- The OTAG states further recommend that EPA recognize and give appropriate credit to the state-by-state emission reduction benefits of vehicle I/M programs and their impact on transport of ozone and its precursors.

- The OTAG states recognize the potential effectiveness of a vehicle on-board diagnostic (OBD) system to alert drivers of emission control system malfunctions and to ensure proper maintenance and operation of the emission control system under real world driving conditions. Therefore, they encourage EPA to support periodic OBD system checks as part of an effective vehicle I/M program and to provide appropriate I/M program credit.

*As described in the Utility NOx Controls Recommendation.

Recommendation: Major Modeling/Air Quality Conclusions

Based on OTAG modeling, the Regional and Urban Scale Modeling and Air Quality Analysis Workgroups have drawn several conclusions regarding the benefits to be derived from NOx and VOC controls for all source sectors and regarding ozone transport. Regional NOx reductions are effective in producing ozone benefits; the more NOx reduced, the greater the benefit. Ozone benefits are greatest where emission reductions are made and diminish with distance. Elevated and low level NOx reductions are both effective. VOC controls are effective in reducing ozone locally and are most advantageous to urban nonattainment areas. Air quality data documents the widespread and pervasive nature of ozone and indicates transport of ozone. Air quality analyses also indicate that ozone aloft is carried over and transported from one day to the next. Generally, the range of transport is longer in the North than in the South. Additionally, coarse grid impacts on the fine grid may be minimal. Other relevant documentation of the RUSM and AQA Workgroups' efforts are available on their Web sites.

Recommendation: National Measures

The OTAG states recommend that the USEPA continue to develop and expeditiously adopt, no later than the dates indicated below, and effectively implement stringent control measures on a national basis which meet or exceed the emission reduction levels as contained in the OTAG analysis.

The measures include:

Measure	Reductions Assumed in the Modeling %[1]	Tons[2,3]	Adoption Date	Start / Implement ation Date
Arch & Industrial Maintenance (AIM) Coatings - Phase I - Phase II	 20% VOC 38% VOC	 507 861	November 97	January 98/ 2003
Consumer/Commercial Products - Phase I - Phase II	 20% VOC 30% VOC	 886 1281	November 97	March 98/ 2003
Autobody Refinishing - Phase I - Phase II	 37% VOC 53% VOC	 281 391	August 97	January 98 2003
Reformulated Gasoline (RFG) Phase II	25%VOC[4] 6.8% NOx	na[5] na		2000
Phase II Small Engine Standards	43% VOC	1343		2007
Marine Engine Standards	23% VOC	398		1998
Heavy Duty Highway 2g Standard (Equivalent to a 4g standard in 2007)	Varies by Engine Family	na[5]		2004
Heavy Duty Nonroad Diesel Standard	37% NOx	1499		2004
Locomotive Standard with Rebuild	43% NOx 10% NOx	na[6] 126		1997

- The OTAG states encourage the USEPA to reach closure on the Tier 2 Motor Vehicle Study in recognizing the benefits of volatile organic compound and nitrogen oxide reductions and their implication for ozone production

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1. Percent reductions were applied to 1990 emissions projected to 2007

2. Tonnage reduction differences are based on 1990 emissions projected to 2007

3. Reductions from multi-phase programs are cummulative

4. For Phase II RFG, percent reductions are based only on affected emissions

5. Tonnage reductions could not be calculated for RFG and the Heavy Duty Highway 2g Standard since the effects of growth and control could not be accounted for separately by the model used

6. The 43% reduction includes rebuilt engines; however, rebuilds were not modeled by OTAG. The modeled reduction was only 10%

ECOS

Ozone Transport Assessment Group

Recommendation: National Low Emission Vehicle

The OTAG states acknowledge the ability of states to adopt the California Low Emission Vehicle Program and further acknowledge that the National Low Emission Vehicle Program is a voluntary program. OTAG supports and encourages the implementation of a National Low Emission Vehicle Program.

ECOS

Ozone Transport Assessment Group

Recommendation: Non-Utility Point Source Controls

Definitions

For purposes of this recommendation, individual medium non-utility point sources are defined as follows:

A boiler > 100 MMBtu/hr and < 250 MMBtu/hr
A reciprocating i.c. engine > 4000 hp and < 8000 hp
A turbine > 10,000 hp and < 20,000 hp
Any other source > 1 ton/average summer day and < 2 tons/average summer day

For purposes of this recommendation, individual large non-utility point sources are defined as follows:

A boiler ≥250 MMBtu/hr
A reciprocating i.c. engine ≥8000 hp
A turbine ≥20,000 hp
Any other source ≥2 tons/average summer day

Control Levels

The OTAG Policy Group recommends that the stringency of controls for large non-utility point sources should be established in a manner equitably with utility controls. The OTAG Policy Group recommends that RACT should be considered for individual medium non-utility point sources where appropriate.

If additional modeling and air quality analyses are performed as specified in OTAG's recommendation for "Additional Modeling and Air Quality Analysis," then development of final state non-utility point source strategies should consider said modeling and analyses.

Control Targets for Budget* Calculation Purposes

The OTAG Policy Group anticipates USEPA will calculate a statewide NOx tonnage budget for each state. In calculating the statewide NOx tonnage budgets, the OTAG Policy Group recommends a calculation based on the following non-utility point source control targets:

Reference Utility Control Level (Coal-fired Power Plants)	Control Targets for the Large Non-utility Point Source Sector	Control Targets for the Medium Non-utility Point Source Sector
55% (0.35 lb/MMBtu)	55%	Uncontrolled
65% (0.25 lb/MMBtu)	60%	Uncontrolled
75% (0.20 lb/MMBtu)	65%	RACT
85% (0.15 lb/MMBtu)	70%	RACT

The control targets, expressed as an emission reduction percentage, should be based on uncontrolled emission rates. The budget component for non-utility point sources is not intended to be an allocation for the non-utility point source sector or for individual units.

Flexibility and Relationship to Other Requirements

The OTAG Policy Group acknowledges that states have flexibility in implementing the non-utility point source strategy. These recommendations shall not supersede any other more restrictive state or federal requirement.

*Budget as used in this recommendation does not imply that a cap will be implemented.

Recommendation: Ozone Action Days

The OTAG states endorse and encourage the development and implementation of ozone action programs to increase public awareness of the public health and welfare issues associated with ozone air pollution. These include but are not limited to daily summertime ozone mapping projects which provide "real-time" information to the viewer and other programs and information to encourage participation in programs to reduce the emissions of ozone precursors. These programs may be effective in reducing peak ozone concentrations. They complement traditional control strategies for the reduction of ozone and ozone precursors.

Recommendation: OTAG's Technical Analysis

OTAG's goal is to "identify and recommend a strategy to reduce transported ozone and its precursors which, in combination with other measures, will enable attainment and maintenance of the national ambient ozone standard in the OTAG region." OTAG has performed the most comprehensive technical analysis of ozone transport ever conducted. In cooperation with the states and stakeholders and by sharing information, OTAG has developed and produced the best and most complete emissions inventory for the OTAG region. OTAG has used UAM-V, a state-of-the-art photochemical model, to analyze the potential impact of various control strategies. OTAG has also developed and applied new techniques to analyze existing air quality data to examine the ozone problem.

Recommendation: Trading Program Framework

Market-based approaches are generally recognized as having the following benefits in relation to traditional command and control regulations: (1) reduce the cost of compliance; (2) create incentives for early reductions; (3) create incentives for emission reductions beyond those required by regulations; (4) promote innovation; and (5) increase flexibility without resorting to waivers, exemptions and other forms of administrative relief.

OTAG recognizes that states have the option to select market systems that are best suited to their policy purposes and air quality planning and program needs. In anticipation of the state specific decisions, OTAG recognizes that states may choose one of two basic approaches to implement NOx emissions market systems:

- Track One - States that elect to implement equivalent NOx market systems with emissions caps could be part of a common, interstate emissions market. Designated sources would be authorized to participate in emissions trading. Other stationary sources could opt-in to the market under specific conditions. A central regulatory authority, such as EPA, could administer this multi-state NOx market system.

- Track Two - States that elect to implement NOx market systems without emissions caps would be part of one or more alternative emissions markets. These alternative markets could have several different forms starting with intra-state emissions trading which could possibly lead to multi-state trading arrangements. Participating sources in each state would be authorized to conduct emissions trading consistent with the scope of the alternative market system. If multiple, equivalent NOx market systems are generated by states, then some central entity, in consultation with EPA, could administer the multi-state NOx market system.

While OTAG recognizes that the procedures for a cap and trade program are known and implementable, the OTAG encourages the joint state/EPA workgroup(s) described herein to bring similar certainty to non-cap but SIP approved trading programs.

At some point, states may be interested in cross-track trading. Further development work and more time is necessary to determine whether and how this cross-track trading could be credibly done. Implementation of either track should not be delayed while an approach for cross-track trading is developed. Inter-sector trading might be provided for as well.

EPA review and approval of specific state SIP revisions would be necessary for NOx market systems from either track that are developed in response to EPA's

SIP call. States would be responsible for meeting applicable federal requirements and ensuring that the integrity of the state's emissions budget was maintained, as well as other desirable results from adoption of suitable market systems. EPA is responsible for approving state programs that meet the applicable federal requirements.

OTAG also recommends that a joint state/EPA Workgroup be formed to address, with appropriate stakeholder involvement, the following tasks:

- Appropriate provisions for implementing Tracks One and Two as described above.
- Key design features for NOx emissions market systems that could be selected by affected states.

A series of seven design proposal papers have been developed by the Trading/Incentives Workgroup which include specific recommendations that are incorporated in the OTAG final report. These papers serve as a sound basis for carrying out the work of this joint workgroup.
The following specific issues should also be addressed by the joint workgroup:

1. Subregional modeling and air quality analysis should be carefully evaluated to determine whether distance and direction should affect how trading may take place. Appropriate mechanisms, such as trading ratios or weights, could be developed if significant effects are expected.

2. Market systems should be operated and evaluated, and adjustments made as needed to reflect experience gained with trading dynamics and any attendant air quality impacts.

3. Local control requirements necessary for attainment may still be utilized for specific sources.

Recommendation: Utility NOx Controls

The OTAG Policy Group recommends that the range of utility NOx controls in the fine grid fall between Clean Air Act controls and the less stringent of 85% reduction from the 1990 rate (lb/mmBTU) or 0.15 lb/mmBTU in order to mitigate ozone transport and assist states in complying with the existing 120 ppb ozone standard. OTAG modeling shows that ozone transport is greater in the northern tier than in the southern tier. EPA has indicated that control levels are to be determined and implemented through statewide tonnage budgets. The statewide budget process should be as described OTAG's recommendation "Additional Modeling and Air Quality Analysis." Control measures are to be determined and implemented by the states. The actions set forth in this section must be carried out in accordance with the Clean Air Act. If trading is allowed, public interest stakeholders have recommended that a minimum of 10% of each state's tonnage budget be allocated solely to qualifying, verifiable, and new end-use energy efficiency and renewable projects. The coarse grid states which would be exempt from OTAG-related controls (all of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa[1], Arkansas, Louisiana, Mississippi, and Florida, as well as the coarse grid portions of Maine, New Hampshire, Vermont, New York, Michigan, Wisconsin, Missouri[2], Alabama, and Georgia) will, in cooperation with EPA, periodically review their emissions, and the impact of increases, on downwind nonattainment areas and, as appropriate, take steps necessary to reduce such impacts including appropriate control measures.

[1]It is understood that the State of Iowa will work with the State of Wisconsin in the development of the Southeast Wisconsin ozone SIP.

[2]It is understood that the state of Kansas will work with the state of Missouri in the continued progress of the Kansas City ozone SIP. In addition, the states of Oklahoma, Texas, Arkansas, and Louisiana will share with the state of Missouri the results of their urban and regional scale ozone modeling which includes boundary condition information and emissions inventory data showing projected impacts of ozone control programs.