

EVALUATION OF TESTIMONY

The Environmental Defense Fund (EDF) requested that the commission withdraw the state implementation plan (SIP) revision and defer establishing motor vehicle emission budgets for transportation conformity until a complete attainment demonstration is submitted to the United States Environmental Protection Agency (EPA). The EDF also stated that the SIP revision is not necessary and is inadequate because it does not contain a complete attainment demonstration and that a SIP that only addresses rate-of-progress (ROP) does not satisfy Federal Clean Air Act (FCAA) requirements.

The commission does not believe that it is appropriate to ignore ROP requirements because the revised SIP is not a complete attainment demonstration. This SIP is a revision of the 9% ROP portion of the 1999 Dallas/Fort Worth (DFW) Attainment Demonstration submitted in March 1999. Section 93.118(e)(4)(iv) of the August 15, 1997 federal transportation conformity requirements (40 Code of Federal Regulations (CFR) Parts 51 and 93) indicates that motor vehicle emission budgets are to be established in both ROP and attainment demonstration SIPs for the purpose of meeting reasonable further progress milestones or demonstrating attainment. In addition, §176(c)(1)(B)(iii) of the FCAA addresses conformity to an implementation plan and indicates that transportation activities will not “delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.” The establishment of 9% ROP motor vehicle emissions budgets for the DFW nonattainment area are required and are needed to impose further limits on motor vehicle emissions in the area. In addition, §182(c)(2) of the FCAA requires serious areas to demonstrate reasonable further progress in addition to requirements to demonstrate attainment.

The EDF stated that the proposed SIP was entitled an attainment demonstration and that it did not address attainment of the ozone standard. The EDF said that the proposed SIP contained no new control measures, and consisted entirely of recalculations of predicted emission reductions in control measures previously in place. The EDF stated that the proposed SIP must achieve additional reductions beyond those already required in order to fulfill FCAA requirements.

The revised SIP is a revision of the previously submitted 9% ROP SIP, with additional reductions, and is not intended to demonstrate attainment or implement new rules. The title has been changed to reflect this distinction. The revised SIP addresses emission reductions during the November 1996 to November 1999 time frame. These are new reductions, they have not been included in any previous SIPs. Because the SIP is being submitted in late 1999, it is not possible to include emission reductions associated with control measures that have not yet been implemented in the SIP. The new reductions include 0.67 tons volatile organic compound (VOC) emission reductions from transportation control measures (TCM) implemented during the November 1996 to November 1999 time frame. It should be noted that these TCMs also have estimated nitrogen oxide (NO_x) emissions reductions, but SIP credit was not taken for these reductions.

The EDF stated that the TNRCC's position is that the SIP would facilitate the continued planning and construction of new highway projects. EDF said that the proposed SIP failed to consider the long range effects on the air quality in the DFW area due to impeding future progress toward attaining the ozone standard and would make it more difficult to demonstrate transportation conformity and attainment in later years.

The revised SIP will establish motor vehicle emissions budgets consistent with reasonable further progress requirements and, therefore, impose further limits on motor vehicle emissions in the DFW area. According to 40 CFR §93.118, transportation conformity cannot be demonstrated if the estimated motor vehicle emissions for the region (for the next 20 years) exceeds those estimated in the SIP's motor vehicle emission budgets. If transportation conformity cannot be demonstrated, regionally significant highway projects cannot proceed to construction. The revised SIP and its associated motor vehicle emissions budgets will therefore limit the planning and construction of new highway projects (both short- and long-term) to those whose estimated emissions conform with the SIP budgets. Since both transportation plans and transportation conformity address a 20-year time frame, the long-term air quality implications of these projects will be considered before they are built. The adopted SIP will provide necessary and required limits for the region's motor vehicle emissions. Also, transportation conformity will not be more difficult to demonstrate in later years due to upcoming vehicle technology and fuel improvements which are predicted by EPA to substantially reduce motor vehicle emissions. The commission does not believe the revised SIP will impede future progress toward attaining the ozone standard because the mobile source emissions budgets associated with the revised SIP require more reductions than are currently imposed on mobile source emissions.

The EDF stated that it was inappropriate to develop transportation conformity budgets based on the 9% ROP SIP revision since the DFW area will not be able to meet the November 15, 1999 deadline as a serious nonattainment area. They also said that any changes made to the DFW area's transportation improvement plans that would impact air quality should be re-evaluated by the North Central Texas Council of Governments (NCTCOG) to address the build/no-build test and to make determinations required by the FCAA. The EDF stated that the most recent conformity determination of the plan and

Transportation Improvement Program (TIP) made in February 1999 after the reclassification to serious, was unlawful because of its failure to address these statutory conformity criteria. EDF stated that the appropriate approach is to develop transportation conformity budgets that are based on an adequate attainment demonstration.

As previously indicated, 40 CFR §93.118(e)(4)(iv) requires motor vehicle emissions budgets for both ROP and attainment demonstration SIPs. Furthermore, a 9% ROP SIP that does not include motor vehicle emissions budgets would not be acceptable to EPA as demonstrating compliance with requirements in federal law. The commission does not believe it is appropriate to ignore ROP requirements for any reason. To do so may be detrimental to efforts to improve the region's air quality.

The emissions reductions tests (build/no build and less than baseline) that are used for transportation conformity demonstrations in areas that do not have established motor vehicle emissions budgets may be less stringent than the budget test. The emissions reductions tests will require the area to: 1) demonstrate that the estimated motor vehicle emissions from the transportation plan and TIP are less than 1990 motor vehicle emissions, and 2) demonstrate that the estimated motor vehicle emissions from the transportation plan and TIP are less than those estimated for the region if the projects in the plan and TIP were not built. The budget test would be done using the 1999 budgets from the 9% ROP SIP, which account for growth and the required emissions reductions. The budget test will require the area to demonstrate that the estimated motor vehicle emissions from the transportation plan and TIP are less than or equal to 1999 motor vehicle emissions budgets included in the 9% ROP SIP. The 1990 motor vehicle emissions are 306.60 tons per day (TPD) VOC and 293.03 TPD NO_x, while the 1999 motor vehicle emissions

budgets in the revised SIP are 147.22 TPD VOC and 284.14 TPD NO_x. As such, the commission believes that the budget test is more protective of air quality and is the appropriate test to use for transportation conformity.

The February 1999 transportation conformity determination was not unlawful. There are no specific transportation conformity requirements associated with a bump-up. Areas must simply demonstrate conformity within 18 months of the associated SIP submittal. The federal transportation conformity regulations (found in 40 CFR Parts 51 and 93) implement §176(c) of the FCAA. According to §51.390 of the federal transportation conformity regulations, transportation conformity is regulated by the state transportation conformity SIP/rule once it is approved by EPA. The state SIP/rule incorporates the federal transportation conformity regulations by reference. Because Texas had an approved state transportation conformity SIP/rule in place in February 1999, the transportation conformity determination was made according to the provisions of the state SIP/rule.

The EDF questioned the methodology used to project a 61% decrease in point source VOC emissions between 1990 and 1999, and said that it was inappropriate to extrapolate the trend in emission reductions to future years. They stated that additional documentation was needed to substantiate the decrease in the emissions inventory.

The decrease in point source VOC emissions is calculated from the 1996 inventory. The actual decrease between 1990 and 1996 is 59.71%, a very large portion of the 61%. Analysis of the decrease between these two years shows that this change reported by industry is real. Actual inventory values collected in 1990 is 65.27 TPD and in 1996 is 26.3 TPD. However, this large rate

of decrease is not expected to continue. The value of 26.16 TPD for 1999 is a fairly minor decrease from 1996. Additional documentation can be found in Appendix H of the March 1999 DFW Attainment Demonstration SIP.

The EDF stated that additional information was needed concerning the creditable reductions claimed in line 10 of Table 5.2-1 and the EPA stated that documentation was needed to show how the area and non-road creditable reductions were derived in the same table.

Area source reductions are comprised mainly of Stage I and Stage II gasoline vapor recovery refueling credits, which are based on Emissions Inventory Improvement Program (EIIP) guidance where uncontrolled emissions use a stated control efficiency (e.g., 84% VOC reduction). Due to the lack of direct fuel sales data, statewide gasoline prorates to counties by vehicle miles traveled (VMT) were used. The AP-42 equation was used to derive uncontrolled Stage I emissions. The MOBILE5a_h model was used to derive uncontrolled Stage II emissions. Both reductions are stated as SIP reductions.

Non-road emissions were calculated by growing the 1990 base year emissions using factors in the Regional Economic Modeling Incorporated/Economic Growth Analysis System (REMI/EGAS) model. The 1990 base year had to be adjusted for a difference in Reid vapor pressure (RVP) compared to the Non-road Equipment and Vehicle Emissions Study (NEVES) use of 9.0 RVP gasoline. Then, in accordance with EPA's Office of Mobile Sources (OMS) guidance, reduction factors are applied, primarily for the small utility engine rule and for reformulated gasoline. The reduction guidance was issued in 1993 in a memorandum signed by Philip Lorang of the OMS.

The EDF stated that better documentation was needed to help explain the negative growth forecasted for VOC emission reductions from on-road mobile sources and modest growth rates for area and off-road mobile sources given the area's explosive growth.

The on-road emission inventory for 1999 is lower than the 1990 inventory. This reduction is due to control measures including inspection/maintenance programs and reformulated gasoline. Fleet turnover and the introduction of Tier I vehicles as a federal control measure have also greatly reduced emission rates. Daily VMT in the 15% ROP SIP was estimated at 111,560,000. This SIP estimates VMT to be 124,189,000 in 1999. This is an annual growth rate of 3.77%, well in excess of the national annual average of 2.5%.

The area and off-road emission reductions are forecasted using the EPA's REMI/EGAS model. The forecasted emission reduction for the DFW area produced a growth curve that the commission agrees does not track with the population growth that has occurred in the DFW area. However, it is generally agreed that area and off-road emission reductions are difficult to estimate and commission staff has used the best tools currently available.

The EDF stated the reductions from the transportation control measures double counted emission reductions that were part of the 15% ROP SIP and that the proposed SIP is inadequate since it failed to satisfy the 9% rate-of-progress requirement.

The commission disagrees with this comment about double counting TCM credits. The 1996 TCM commitment in the 15% Rate of Progress was 6.94 TPD of VOC. The NCTCOG reported 9.45 TPD of VOC reductions from TCMs. This reduction was achieved by constructing 18,903

projects instead of the 13,876 projects committed to in the SIP. These reductions are detailed in “An Analysis of Transportation Control Measures Implemented for the 15% Rate of Progress State Implementation Plan in the Dallas-Fort Worth Ozone Nonattainment Area, 1996,” a report submitted by NCTCOG to the commission as part of the TCM effectiveness review. In 1996 the DFW area exceeded their SIP commitments for TCM by 2.51 TPD with projects which were not specifically counted as TCMs.

Many projects have continued to produce emission reductions into the 1999 time frame. Such projects include high-occupancy vehicle (HOV) lanes, light rail, and park and ride lots. These are continuing reductions such as those obtained from reformulated gasoline and inspection/maintenance programs. Emission reductions from these TCMs are most likely underestimated because VOC reductions are based on the same utilization rates used in 1996. Any increases in utilization rates between 1996 and 1999 will result in more TCM benefits than were claimed in this revised SIP.

The EDF stated that the updated vehicle registration distribution information failed to account for other effects that would likely negate the claimed reductions and that the commission should consider the impact of the area’s rapidly increasing population and booming economy on the emission inventory. In addition, the EDF recommended that the changing distribution between the different vehicle classes needed to be evaluated.

The updated vehicle registration distributions represent the latest in a series of updates in planning assumptions in the DFW nonattainment area. The NCTCOG used a travel demand model validated with 1995 data. Highway Performance Monitoring System (HPMS) is based on

1997 data, the most recent available when the modeling process began. Trip lengths are based on 1996 data, the most recent survey material available. The VMT mix is calibrated to 1999 VMT mix defaults embedded in the MOBILE model. Model assumptions are updated whenever valid data becomes available. The changes in the vehicle age distribution inputs for the MOBILE model did not produce a profound difference in emission rates. In Dallas and Tarrant Counties the newer age data reduced VOC emissions by 2.36%. The reduction is 3.99% in Collin and Denton Counties. The NCTCOG and the commission are in agreement that the most recent data available should be used in on-road emission modeling.

The commission concurs that there has been a substantial increase in sport utility vehicles in recent years. The required data for evaluating the shift in VMT mix is very difficult to obtain since the MOBILE model estimates vehicle emissions based on vehicle weight rather than body type. Federal Highway Administration procedures for vehicle classification, the most common data source available, are based on the number of axles and body type and do not include weight estimates. While this procedure separates two axle pickups and vans from automobiles, it does not provide data to sort pickups and vans into the weight classifications used in the MOBILE model. Unfortunately, Light Duty Gasoline Trucks I and II appear identical when traffic counts are made and cannot be readily sorted into the proper weight classifications.

The other available data consist of vehicle registration information. In theory, registration data could be used to estimate VMT mix. This procedure requires assuming that daily mileage correlates exactly with registration data and that vehicles are driven only where they are registered. This assumption may not be valid for heavy duty diesel trucks which are frequently driven thousands of miles away from the county of registration.

The EDF stated that there was insufficient documentation regarding the emission reductions that were claimed as a part of the March 1999 ROP SIP submission and that it was difficult to ascertain whether these reductions were adequate.

Comments pertaining to documentation of the March 1999 DFW SIP are beyond the scope of this SIP revision. Comments concerning the March 1999 SIP were addressed through the public comment process prior to being approved by the commission on February 24, 1999. The methodologies used to demonstrate reasonable further progress, both in the March 1999 SIP and in this revised version, are consistent with the EPA's approved way of showing ROP in a revised SIP.

The EDF and the EPA pointed out that Table 5.3-1 claimed an excess of 3.22 TPD in the calculated target and contingency reductions, whereas the amount should have been a shortfall.

The difference between the target plus contingency and the required total reductions results in a 3.22 TPD shortfall. The item in Table 5.3-1 stating an excess was incorrectly labeled and has been changed. Because the revised SIP is a revision of the previously submitted ROP SIP and contains no new rules, the contingency requirement will be updated in the next phase II attainment demonstration SIP.

The EPA stated that the VOC point source emissions inventory for the 1990 base year was 63.80 TPD whereas the revised point source inventory in Appendix H was 63.98 TPD.

The VOC point source inventory of 63.98 TPD for the 1990 base year found in Appendix H is the correct figure. Because of several iterations prior to the final March 1999 ROP SIP, the table in the proposed SIP was not updated. Table 5.2-1 has been corrected to reflect this change.

The EPA stated that documentation was needed regarding the mobile model input and output files used to generate the projected and adjusted inventories in Table 5.2-1 for 1999.

Example MOBILE5a_h input and output files have been added to Appendix G of the SIP.

The EPA stated that the 1999 emissions inventory for point sources did not match the numbers derived in Appendix H of the SIP. The grown inventory in Appendix H was 26.16 TPD for VOCs whereas the number in Table 5.2-1 of the proposed SIP was 25.10 TPD.

The 1999 grown inventory of 26.16 TPD as in Appendix H is the correct number. Because of several iterations prior to the final March 1999 ROP SIP, the table in the proposed SIP was not updated. Table 5.2-1 has been corrected to reflect this change.

The EPA said that documentation was needed regarding the mobile model input and output files used to generate the projected and adjusted inventories in Table 5.3-1 for 1999.

MOBILE 5a_h input and output files have been added to Appendix G of the SIP.

The EPA asked for clarification as to whether the updated vehicle registration was used to calculate the reductions from Tier I, inspection/maintenance (I/M) and reformulated gasoline (RFG) in Table 5.3-1 because if not, the emission reductions would likely be changed by the updated fleet mix.

The updated vehicle registration data was not used in calculating Tier I, I/M, and RFG credits. However, the reductions claimed for the updated vehicle registration were modeled with Tier I, I/M, and RFG gasoline in the appropriate counties. The total reductions from Tier I, I/M, RFG, and updated registration distributions would remain the same if the registration distribution changes had been included in Tier I, I/M, and RFG modeling. Slight differences in the reductions for each program would be expected but the total reductions should remain the same.

The EPA pointed out that the NO_x point source emissions inventory for the 1990 base year was 71.60 TPD whereas the inventory in Appendix H was 71.76 TPD.

The NO_x point source inventory of 71.76 TPD for the 1990 base year found in Appendix H is the correct figure. Because of several iterations prior to the final March 1999 ROP SIP, the table in the proposed SIP was not updated. Table 5.3-2 has been corrected to reflect this change.

The EPA stated that the proposed SIP did not show how the deterioration factor of 0.874 was derived for TCMs and, that if MOBILE5a was used, additional information was needed to explain how the rate was calculated and to show input and output data.

The deterioration factor is based on MOBILE5a_h emission rates and represents a comparison of MOBILE emission factor model runs for the DFW area for 1996 and 1999 at 85 degrees

Fahrenheit (representing noon temperatures) and 34 miles per hour (the 24-hour speeds weighted by VMT for the nonattainment area). The only factor changed between the modeling runs was the analysis year (1996 versus 1999). The 1999 VOC emission rates were found to be 12.6% lower than 1996 rates at the same speeds and temperatures. Therefore, the deterioration factor is $1 - 0.126 = 0.874$. The 1996 MOBILE5a_h VOC emission rates multiplied by 0.874 equal the 1999 emission rates produced in the modeling. The VOC emissions from 1996 were multiplied by 0.874 to estimate 1999 emissions. This procedure does not account for increased utilization of the TCMs and most likely underestimates their benefits. Additional information has been incorporated into the SIP in Appendix G.

The EPA stated that the proposed SIP did not indicate that the on-road mobile source emissions were based on the 1990 base year and 1996 ROP, and that additional information was needed on how the mobile source emissions budgets were calculated.

Additional information on how on-road emissions were calculated have been incorporated into the SIP in section 5.4, 1999 Motor Vehicle Emissions Budgets.

The EPA agreed that emission reductions from the more restrictive Texas windshield wiper solvent rule resulted in additional emission reductions beyond the national rule. The EPA stated, however, that an estimate of rule effectiveness for the calculation of projected emission reductions should be made and that an 80% default rule effectiveness could be used to account for potential noncompliance. The EPA also expressed concern regarding the need for an effective state enforcement program to ensure that compliance with the state's more restrictive rule was being met.

The commission agrees that the emission reduction credit should be adjusted for the default 80% rule effectiveness and has revised the credit accordingly. Regarding enforcement, the Field Operations Division and the Enforcement Division in the Office of Compliance and Enforcement are responsible for enforcing the Chapter 115 rules, with the Field Operations Division conducting the actual inspections in accordance with the commission's enforcement priorities. To maximize compliance with the Chapter 115 consumer products rule, the commission intends to contact automotive stores to ensure that they are aware of the requirements of this rule.

The EPA stated that Appendix G must include methodologies for calculating the emissions reductions from each TCM.

Example methodologies have been included in Appendix G.

The EPA stated that Appendix G did not show what specific projects were implemented between 1996 through 1999 as well as up to 1996 under the 15% ROP SIP.

A list of projects completed before 1996 and between 1996 and 1999 has been included in Appendix G. The appendix has been reformatted so that the information is easier to find.

The EPA stated that they were unable to verify the emission reductions in Appendix G and that the appendix should be organized in a manner so that reductions could be associated with each project and show the total amount of reductions from each TCM.

Appendix G has been adapted into a more user-friendly format so that it is now easier to view data concerning emissions reductions from each project.