

seven in 2002. EPA notes that when dealing with numbers as small as one exceedance in 2000, any subsequent increase in the number of exceedances will result in the number of exceedances being at least doubled. In other words, when dealing with a number as small as one, any increase will be at least double that value. Thus, citing a doubling or tripling of exceedances is not necessarily an indicator of significant changes in air quality.

The one-hour ozone NAAQS is based upon a three-year average. For a violation, the estimated number of exceedances per year must exceed 1.0 at any monitoring site. Under this standard, a monitor may record up to three exceedances over a three-year period without causing a violation of the standard. The fourth highest monitored level at a monitor over a three-year period can be used as an indicator of potential violations of the NAAQS. (Note that since other factors, such as missing data, can affect the calculation of the estimated number of exceedances, the fourth highest monitored value is not solely used to determine a violation. See the discussion in the January 30, 2003, proposed rule at 68 FR 4849 and 4850 for an example of how the number of estimated exceedances is determined.) The term "design value" is used to refer to the fourth highest monitored value in a three-year period. For an individual monitor, the design value is the fourth highest monitored value in a three-year period. For an area such as the St. Louis area, the highest of the individual monitor design values over a three-year period is referred to as the "area's design value." The lower an area's design value the more likely the area will meet the standard. Also, an area's design value which decreases over time indicates that the monitored ozone concentrations are generally lowering and the air quality is improving.

The St. Louis area's design value reduced as follows: 0.156 parts per million (ppm) in 1987–1989 (*see* 52 FR 13385–13386 dated March 18, 1999); 0.136 ppm in 1994–1996 (*see* 53 FR 15581 dated March 19, 2001); 0.131 ppm in 1996–1998 (*see* 53 FR 15583 dated March 19, 2001); 0.127 ppm in 1998–2000 (*see* 53 FR 15584 dated March 19, 2001); and, 0.123 ppm in 2000–2002.

This indicates that the monitored air quality improved over this time period.

In the January 30, 2003, proposed rule at 68 FR 4856–4858, and in the response to comment 19, EPA explains the basis for concluding that the observed air quality improvements are due to the implementation of permanent and

enforceable emission reductions. The reasons cited include emission controls which have resulted in emission reductions, an analysis of meteorological conditions which has shown a trend in the reduction of ozone from 1989 to the present while the number of days conducive to forming ozone showed no significant trend, and an assessment of emissions in 1990 and 2000 which have shown substantial decreases in emissions of VOCs and NO_x.

Finally, it is noted that the commenter errs in combining the exceedance data from many monitors and concluding, on the basis of the exceedance totals that a worsening ozone trend has occurred. Referring to Table 1 in the January 30, 2003, proposed rule (68 FR 4850) (repeated above), one can see that many monitors, including the worst-case monitor at West Alton, show no consistent trend in exceedance numbers in the 2000–2002 period. The "sudden" increase in exceedances from zero to two at the Orchard Farm and South Lindbergh monitoring sites, although implying a worsening ozone trend, simply point to the instability of considering year-to-year changes within a small time period.

Comment 21: The only modeling which the commenter is aware of was relied upon in the June 26, 2001, rulemaking. This modeling shows that it is impossible to attain the NAAQS in St. Louis in 2002. The significant factor is long-range transport. This suggests that variations in out-of-state transport may account for the monitored improvements in air quality.

Response 21: Previous modeling referred to by the commenter was conducted as part of the attainment demonstration approved by EPA in the June 26, 2001, rulemaking (66 FR 33995). (This approval was vacated by the U.S. Court of Appeals for the Seventh Circuit, as explained previously.) This modeling demonstrated that utilizing planned controls and measures the area will attain the standard by no later than November 15, 2004. EPA disagrees with the commenter's assertion that the modeling demonstrated it was impossible to attain the standard in 2002. The purpose of the modeling was to determine the likelihood of attainment. EPA's approval of the states' attainment demonstrations did not include a determination that attainment or maintenance of the standard prior to 2004 was impossible.

The assumptions used in the modeling for the attainment demonstration approved in the June 26, 2001, rulemaking are described in an

April 3, 2001, proposal (66 FR 17649–17652). In this discussion, EPA noted that the states incorporated corrections to the 1996 base year emissions inventory, an assessment of the model's performance by applying statistical tests, and assumptions regarding which states are affected by the NO_x SIP call including NO_x limits on facilities.

As discussed in the April 2001 document, the states had taken measures to revise the emissions inventory to reflect the most current data inputs available. In addition, an evaluation of the model was performed as a measure of the "likelihood" that the standard will be achieved. The June 26, 2001, rulemaking at 66 FR 17652 states:

The states conclude, and EPA concurs, that the revised modeling system performs at an acceptable level because it satisfactorily reproduces peak ozone concentrations relative to the monitored peak ozone concentrations. The modeling system adequately simulates the observed magnitude and spatial and temporal patterns of monitored ozone concentrations. Furthermore, the modeling results accurately differentiate between days with marginal ozone levels and days with elevated ozone concentrations. Therefore, based on the revised modeling and WOE results presented by the states which confirm the adequacy of the adopted emission control strategy, EPA is approving the states' attainment demonstrations.

The conclusions made regarding the likelihood of attainment based upon the attainment demonstration modeling were the best that could be drawn from the available information. And, it is likely that different conclusions regarding attainment would be drawn if the states were required to conduct modeling as part of the maintenance demonstration. For example, if a prospective maintenance demonstration were performed with an ozone photochemical model following EPA guidance, the modeling would be allowed to use episode days from the 2000–2002 period, not 1991 and 1995 as was used in the attainment demonstration modeling. In addition, the modeling would use a more current base-year inventory (1999 or 2000) rather than the 1996 base-year inventory used in the attainment demonstration modeling. It is highly likely, if not certain, that the outcome would be a conclusion that attainment will be preserved through the required 10-year period.

Ozone models are designed to primarily predict the relative impacts of emission changes on future ozone levels. Thus, it is not uncommon to observe that actual monitored ozone concentrations are different from