

discussed in prior paragraphs of this section to determine what additional emission reductions may be needed to support ozone attainment in the Washington area using EPA's 1999 Guidance. As stated in previous paragraphs of this section, EPA has concluded that the Washington area does not need any additional emission reductions beyond those contained in the attainment demonstration for the Washington area to ensure attainment of the ozone NAAQS.

While the modeling results suggest that exceedances may still occur, EPA's 1996 Guidance allows for consideration in the weight-of-evidence analysis of whether the model over-predicts or under-predicts in the base case and consideration of other evidence.

The base case model performance for both of the July 1991 episodes show good alignment of the modeled ozone plume in comparison to monitored ozone values (e.g., the model predicted peak concentrations and monitored peak concentrations are generally paired in space). Therefore, the degree to which the peak predicted values exceed the measured values in the same general vicinity, indicates that the model is systematically over-predicting ozone concentration, while adequately representing the spacial distribution of ozone.

With respect to the assertion that EPA did not explain how adjusting model results to account for model over prediction is consistent with EPA's modeling rule, 40 CFR part 51, appendix W, the modeling rule encourages the assessment of model uncertainty as one of the factors affecting the model results. In EPA's view, model over prediction is only a rough approximation of the extent of modeling uncertainty. Consideration of model performance (specifically, a bias to under- or over-predict ozone levels) is one way to assess modeling uncertainty. For the Washington area, EPA explained how performance was more closely reviewed and used as part of the WOE determination.

As a further part of the WOE analysis to corroborate the likelihood that the Washington area will attain the 1-hour ozone standard by the attainment date of 2005, EPA developed relative reduction factors based on regional scale modeling performed for the NO<sub>x</sub> SIP call supplemental notice of proposed rulemaking (NO<sub>x</sub> SIP Call SNPR) (see 63 FR 25902, May 11, 1998; and see 63 FR 57356, October 27, 1998). These relative reduction factors were used to adjust the 1994–1996 area design values for the Washington area. This analysis shows all future predicted design values below

the level needed for attainment (124 ppb). To provide additional information, the EPA's relative reduction factors were applied to the 1995–1997 and 1996–1998 Washington area design values, again resulting in all area design values below 124 ppb. This analysis was updated (see the response to comment 2. elsewhere in this section) to include more recent air quality data including data through the 2002 ozone season. The result of this updated analysis still showed all future predicted design values below 124 ppb.<sup>9</sup> A future design value analysis was performed using relative reduction factors from the local photochemical grid modeling results. The outcome of this analysis shows a future predicted area-wide design value of 119.6 ppb.<sup>10</sup>

Based on the results of the local scale modeling along with the additional WOE arguments provided in the attainment demonstration plan, EPA believes that attainment of the 1-hour ozone standard has been successfully demonstrated for the Washington area by the November 2005 attainment date.

*Comment 2:* In the March 5, 2003, letter the commenter asserted that 2002 ozone levels recorded in the Washington area show that the WOE analysis is flawed. The comments summarize the 2002 data in terms of nine days that the 1-hour standard was exceeded with as many as 8 different monitors recording exceedances on some of those days and claim this number of exceedance days was higher than in any of the preceding 10 years. The comments assert that this data, including a peak ozone value of 0.158 ppm, refutes EPA's WOE analysis. The same commenter cited to pertinent comments previously submitted to EPA

<sup>9</sup> Table IV C–2 to “First Amendment to Technical Support Document for Approval and Promulgation of Air Quality Implementation Plans; District of Columbia, Maryland, and Virginia; Post-1996 Rate-of-Progress Plan for the Metropolitan Washington, DC Nonattainment Area”, dated April 10 2003.

<sup>10</sup> Under the 1999 Guidance, the base design value is an average of three years of monitored design values that represent the modeled base case emissions. In the case of the Washington area, the model episodes are for 1991, and, thus, the three design values used are those that reflect the 1991 monitoring data, i.e., the design values for 1991, 1992 and 1993. In the case of the Washington area these three design values were 136, 136 and 137 ppb for 1991, 1992 and 1993, respectively. The relative reduction factor (RRF) was 0.88. Whether the RRF is applied to the average design value or the highest design value has no practical effect (0.88 times 137 ppb equals 120.6 ppb). See Attachment 5 “Improving Weight of Evidence Through Identification of Additional Emission Reductions Not Modeled” to “Technical Support Document for the One-Hour Ozone Attainment Demonstrations submitted by the State of Maryland, Commonwealth of Virginia and the District of Columbia for the Metropolitan Washington, D.C. Ozone Nonattainment Area” dated January 24, 2003.

on February 14, 2000. In the February 14, 2000 comment letter, we received comments asserting that EPA looks only at those “weights” that favor a finding of attainment and specifically cited 1999 air quality data. The comments assert that the data through 1999 show current violations at 4 different monitoring sites. The comments highlight peak concentrations at various monitors and claim even assuming a 7 ppb reduction in ambient levels from the NO<sub>x</sub> SIP call the peak value of 0.141 ppm recorded in 1999 would still be in violation.

*Response 2:*

*Weight of Evidence and Air Quality Generally.*

The District, Maryland and Virginia provided WOE arguments in the attainment demonstration to further corroborate that it is likely their attainment demonstrations contained sufficient local measures for the Washington area to attain the 1-hour ozone standard by the statutory date of 1999 but for transport.

In the original plan, the States and the District used EPA-developed relative reduction factors based on regional scale modeling performed for the NO<sub>x</sub> SIP Call SNPR. These relative reduction factors were used to adjust the 1996 area design values which considered air quality data for the years 1994, 1995 and 1996. The analysis showed all area future predicted design values below the level consistent with attainment (124 ppb). To supplement the state submittals, we originally applied the same relative reduction factors to the 1997 and 1998 area design values which include air quality data through 1998. Again the results were that all future predicted area design values were below 124 ppb.

Using the more recent air quality data, including that available for 2002, EPA has performed these same evaluations. Once again, the results were that all future predicted design values were below 124 ppb. The detail data and computations have been placed in the docket for this action.

*Number of Exceedence Days.*

Compliance with the one-hour ozone standard is determined by comparing the monitored annual average number of expected exceedances of the 0.12 parts per million (ppm) with the one-hour standard. The one-hour standard is exceeded in practice when the highest one-hour value for any calendar day is greater than 124 ppm. The standard is set at 0.12 ppm but due to rounding, a value of 0.124 ppm or less rounds down to 0.12 ppm and values of 0.125 ppm or more round up to 0.13 ppm which