APPENDIX IV TO PART 92—GUIDELINES FOR DETERMINING EQUIVALENCY BETWEEN EMISSION MEASUREMENT SYSTEMS

This appendix describes a series of correlation criteria that EPA considers to be reasonable for the purpose of demonstrating equivalency between two test systems designed to measure the same emissions during FTP locomotive testing. These criteria are presented here only as guidelines. When required to make a finding of equivalency, EPA could base its decision on criteria other than those listed here, where EPA has reason to believe that these criteria are not appropriate.

(a) General approach. (1) Multiple tests should be conducted in pairs on the same locomotive or engine using each of the measurement systems.

(2) Variations for other parameters, such as test fuel, should be minimized to the maximum extent possible.

(3) Locomotive and/or locomotive engine tests conducted in accordance with the provisions of Subpart B of this part are preferred. Where appropriate, engine tests conducted in accordance with 40 CFR part 89 may also be used.

(4) Equivalency of the systems should be determined by comparing individual modal data, individual cycle-weighted data, and the average cycle-weighted results from each system.

(b) Correlation criteria for particulate measurements. (1) The correlation coefficient (R²) for individual modal data should be 0.90, or higher.

(2) The maximum deviation between any pair of cycle-weighted data should be 15 percent, or less.

(3) The ratio of average cycle-weighted results using the alternate system to the average cycle-weighted results using the specified Part 92 system (i.e., avgₐ/aavgₛ) should be between 0.97 and 1.05.

(c) Correlation criteria for other measurements. Correlation parameters for gaseous pollutants should be better than those specified in paragraph (b) of this appendix for particulate measurements.

(d) Minimum number of tests. The recommended minimum number of tests with each system necessary to determine equivalency is:

(1) Four locomotive or locomotive engine tests, conducted in accordance with the provisions of Subpart B of this part.

(2) Seven 8-mode nonroad engine tests, conducted in accordance with the provisions of 40 CFR part 89.

(e) Statistical outliers. Statistical outliers may be excluded consistent with good engineering judgement. Outliers should be replaced by rerunning each excluded test point. Where more than one outlier is excluded, is recommended to perform one additional pair of tests (in addition to the minimum number specified in paragraph (d) of this appendix) for each two outliers excluded.

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PART 93—DETERMINING CONFORMITY OF FEDERAL ACTIONS TO STATE OR FEDERAL IMPLEMENTATION PLANS

Subpart A—Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

Sec. 93.100 Purpose.

93.101 Definitions.

93.102 Applicability.

93.103 Priority.

93.104 Frequency of conformity determinations.

93.105 Consultation.

93.106 Content of transportation plans and timeframe of conformity determinations.

93.107 Relationship of transportation plan and TIP conformity with the NEPA process.

93.108 Fiscal constraints for transportation plans and TIPs.

93.109 Criteria and procedures for determining conformity of transportation plans, programs, and projects: General.

93.110 Criteria and procedures: Latest planning assumptions.

93.111 Criteria and procedures: Latest emissions model.

93.112 Criteria and procedures: Consultation.

93.113 Criteria and procedures: Timely implementation of TCMs.

93.114 Criteria and procedures: Currently conforming transportation plan and TIP.

93.115 Criteria and procedures: Projects from a transportation plan and TIP.

93.116 Criteria and procedures: Localized CO, PM₁₀, and PM₂₅ violations (hot-spots).

93.117 Criteria and procedures: Compliance with PM₁₀ and PM₂₅ control measures.

93.118 Criteria and procedures: Motor vehicle emissions budget.

93.119 Criteria and procedures: Interim emissions in areas without motor vehicle emissions budgets.

93.120 Consequences of control strategy implementation plan failures.

93.121 Requirements for adoption or approval of projects by other recipients of funds designated under title 23 U.S.C. or the Federal Transit Laws.

554