test point and the end of the useful life. You may also test at evenly spaced intermediate points.

(2) Operate the vehicle or engine over a representative duty cycle for a period at least as long as the useful life (in hours or kilometers). You may operate the vehicle or engine continuously.

(3) You may perform maintenance on emission-data vehicles as described in §1051.125 and 40 CFR part 1065, subpart E.

(4) If you measure emissions at only two points to calculate your deterioration factor, base your calculations on a linear relationship connecting these two data points for each pollutant. If you measure emissions at three or more points, use a linear least-squares fit of your test data for each pollutant to calculate your deterioration factor.

(5) Use good engineering judgment for all aspects of the effort to establish deterioration factors under this paragraph (b).

(6) You may use other testing methods to determine deterioration factors, consistent with good engineering judgment, as long as we approve those methods in advance.

(c) Include the following information in your application for certification:

(1) If you determine your deterioration factors based on test data from a different engine family, explain why this is appropriate and include all the emission measurements on which you base the deterioration factor.

(2) If you do testing to determine deterioration factors, describe the form and extent of service accumulation, including a rationale for selecting the service-accumulation period and the method you use to accumulate hours.

[70 FR 40496, July 13, 2005, as amended at 73 FR 59250, Oct. 8, 2008]

§1051.245 How do I demonstrate that my engine family complies with evaporative emission standards?

(a) For purposes of certification, your engine family is considered in compliance with the evaporative emission standards in subpart B of this part if you do either of the following:

(1) You have test results showing permeation emission levels from the fuel tanks and fuel lines in the family are at or below the standards in §1051.110 throughout the useful life.

(2) You comply with the design specifications in paragraph (e) of this section.

(b) Your engine family is deemed not to comply if any fuel tank or fuel line representing that family has test results showing a deteriorated emission level above the standard.

(c) To compare emission levels with the emission standards, apply deterioration factors to the measured emission levels. For permeation emissions, use the following procedures to establish an additive deterioration factor, as described in §1051.240(c)(2):

(1) Section 1051.515 specifies how to test your fuel tanks to develop deterioration factors. Small-volume manufacturers may use assigned deterioration factors that we establish. Apply the deterioration factors as follows:

(i) Calculate the deterioration factor from emission tests performed before and after the durability tests as described in §1051.515(c) and (d), using good engineering judgment. The durability tests described in §1051.515(d) represent the minimum requirements for determining a deterioration factor. You may not use a deterioration factor that is less than the difference between evaporative emissions before and after the durability tests as described in §1051.515(c) and (d).

(ii) Do not apply the deterioration factor to test results for tanks that have already undergone these durability tests.

(2) Determine the deterioration factor for fuel lines using good engineering judgment.

(d) Collect emission data using measurements to one more decimal place than the applicable standard. Apply the deterioration factor to the official emission result, as described in paragraph (c) of this section, then round the adjusted figure to the same number of decimal places as the emission standard. Compare the rounded emission levels to the emission standard for each emission-data vehicle.

(e) You may demonstrate for certification that your engine family complies with the evaporative emission standards by demonstrating that you use the following control technologies:
(1) For certification to the standards specified in §1051.110(a) with the control technologies shown in the following table:

<table>
<thead>
<tr>
<th>If the tank permeability control technology is . . .</th>
<th>Then you may design-certify with a tank emission level of . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A metal fuel tank with no non-metal gaskets or with gaskets made from a low-permeability material.</td>
<td>1.5 g/m²/day.</td>
</tr>
<tr>
<td>(ii) A metal fuel tank with non-metal gaskets with an exposed surface area of 1000 mm² or less.</td>
<td>1.5 g/m²/day.</td>
</tr>
</tbody>
</table>

(2) For certification to the standards specified in §1051.110(b) with the control technologies shown in the following table:

<table>
<thead>
<tr>
<th>If the fuel-line permeability control technology is . . .</th>
<th>Then you may design-certify with a fuel line permeation emission level of . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Hose meeting the specifications for Low Emission Fuel Lines as described in 40 CFR 1048.105.</td>
<td>15 g/m²/day.</td>
</tr>
<tr>
<td>(ii) Hose meeting the R11–A or R12 permeation specifications in SAE J30 as described in 40 CFR 1060.810.</td>
<td>15 g/m²/day.</td>
</tr>
</tbody>
</table>

§ 1051.250 What records must I keep and make available to EPA?

(a) Send the Designated Compliance Officer information related to your U.S.-directed production volumes as described in §1051.345. In addition, within 45 days after the end of the model year, you must send us a report describing information about vehicles you produced during the model year as follows:

(1) State the total production volume for each engine family that is not subject to reporting under §1051.345.

(2) State the total production volume for any engine family for which you produce vehicles after completing the reports required in §1051.345.

(3) For production volumes you report under this paragraph (a), identify whether or not the figures include California sales. Include a separate count of production volumes for California sales if those figures are available.

(b) Organize and maintain the following records:

(1) A copy of all applications and any summary information you send us.

(2) Any of the information we specify in §1051.205 that you were not required to include in your application.

(3) A detailed history of each emission-data vehicle. For each vehicle, describe all of the following:

(i) The emission-data vehicle’s construction, including its origin and buildup, steps you took to ensure that it represents production vehicles, any components you built specially for it, and all the components you include in your application for certification.

(ii) How you accumulated vehicle or engine operating hours, including the dates and the number of hours accumulated.

(iii) All maintenance, including modifications, parts changes, and other service, and the dates and reasons for the maintenance.

(iv) All your emission tests, including documentation on routine and standard tests, as specified in 40 CFR part 1065, and the date and purpose of each test.

(v) All tests to diagnose engine or emission-control performance, giving the date and time of each and the reasons for the test.

(vi) Any other significant events.

(4) Production figures for each engine family divided by assembly plant.

(5) Keep a list of engine identification numbers for all the engines you produce under each certificate of conformity.

(c) Keep data from routine emission tests (such as test cell temperatures and relative humidity readings) for one year after we issue the associated certificate of conformity. Keep all other information specified in this section for eight years after we issue your certificate.

(d) Store these records in any format and on any media, as long as you can promptly send us organized, written records in English if we ask for them.

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(a) Send the Designated Compliance Officer information related to your U.S.-directed production volumes as described in §1051.345. In addition, within 45 days after the end of the model year, you must send us a report describing information about vehicles you produced during the model year as follows:

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