§ 91.410 Engine test cycle.

(a) The 5-mode cycle specified in Table 2 in appendix A to this subpart shall be followed in dynamometer operation tests of marine engines.

(b) During each non-idle mode the specified speed and load shall be held to within ±50 rpm or ±2 percent of point, whichever is greater. During each idle mode the engine speed shall be held within ±75 rpm or ±5 percent of the manufacturers specified idle speed, whichever is greater. For direct drive products (no neutral gear), it is acceptable to have an accessory load on the engine during the idle mode provided that the engine speed is within ±5 percent of the manufacturers specified idle speed and the accessory load is representative of in use operation.

(c) If the operating conditions specified in paragraph (b) of this section for modes 2, 3, 4, and 5 cannot be maintained, the Administrator may authorize deviations from the specified load conditions. Such deviations shall not exceed 10 percent of the maximum torque at the test speed. The minimum deviations, above and below the specified load, necessary for stable operation shall be determined by the manufacturer and approved by the Administrator prior to the test run.

(d) Do not include power generated during the idle mode (mode 5) in the calculation of emissions results.

§ 91.411 Post-test analyzer procedures.

(a) Perform a hang-up check within 60 seconds of the completion of the last mode in the test. Use the following procedure:

1. Introduce a zero-grade gas or room air into the sample probe or valve V2 (see Figure 1 in appendix B of subpart D of this part) to check the "hangup zero" response. Simultaneously start a time measurement.

2. Select the lowest HC range used during the test.

3. Within four minutes of beginning the time measurement in paragraph (a)(1) of this section, the difference between the zero gas response and the hang-up zero response shall not be greater than 5.0 percent of full scale or 10 ppmC whichever is greater.

(b) Begin the analyzer span checks within six minutes after the completion of the last mode in the test. Record for each analyzer the zero and span response for each range used during the preceding test or test segment.

(c) If during the test, the filter element(s) were replaced or cleaned, a vacuum check must be performed per §91.324(a) immediately after the span checks. If the vacuum side leak check does not meet the requirements of §91.324(a) the test is void.