Federal Aviation Administration, DOT

§ 29.955 Fuel flow.

(a) General. The fuel system for each engine must provide the engine with at least 100 percent of the fuel required under all operating and maneuvering conditions to be approved for the rotorcraft, including, as applicable, the fuel required to operate the engines under the test conditions required by §29.927. Unless equivalent methods are used, compliance must be shown by test during which the following provisions are met, except that combinations of conditions which are shown to be improbable need not be considered.

1. The fuel pressure, corrected for accelerations (load factors), must be within the limits specified by the engine type certificate data sheet.

2. The fuel level in the tank may not exceed that established as the unusable fuel supply for that tank under §29.959, plus that necessary to conduct the test.

3. The fuel head between the tank and the engine must be critical with respect to rotorcraft flight attitudes.

4. The fuel flow transmitter, if installed, and the critical fuel pump (for pump-fed systems) must be installed to produce (by actual or simulated failure) the critical restriction to fuel flow to be expected from component failure.

5. Critical values of engine rotational speed, electrical power, or other sources of fuel pump motive power must be applied.

6. Critical values of fuel properties which adversely affect fuel flow are applied during demonstrations of fuel flow capability.

7. The fuel filter required by §29.997 is blocked to the degree necessary to simulate the accumulation of fuel contamination required to activate the indicator required by §29.1305(a)(17).

(b) Fuel transfer system. If normal operation of the fuel system requires fuel to be transferred to another tank, the transfer must occur automatically via a system which has been shown to maintain the fuel level in the receiving tank within acceptable limits during flight or surface operation of the rotorcraft.

(c) Multiple fuel tanks. If an engine can be supplied with fuel from more than one tank, the fuel system, in addition to having appropriate manual switching capability, must be designed to prevent interruption of fuel flow to that engine, without attention by the flightcrew, when any tank supplying fuel to that engine is depleted of usable fuel during normal operation and any other tank that normally supplies fuel to that engine alone contains usable fuel.

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