

4731.3415 PROTOTYPE TESTS; ICE DETECTION DEVICES CONTAINING STRONTIUM-90.

An applicant for a license under part 4731.3380 must conduct prototype tests on each of five prototype ice detection devices as follows:

A. a temperature-altitude test. The device must be placed in a test chamber as it would be used in service. A temperature-altitude condition schedule must be followed according to part 4731.3405, subpart 2;

B. vibration tests according to part 4731.3405, subpart 3;

C. a shock test according to part 4731.3405, subpart 5;

D. a hermetic seal and waterproof test. On completion of all other tests required under items A to C, the device must be immersed in 30 inches of water for 24 hours and must show no visible evidence of physical contact between the water and the strontium-90. Absolute pressure of the air above the water must then be reduced to one inch of mercury. Lowered pressure must be maintained for one minute or until air bubbles cease to be given off by the water, whichever is the longer. Pressure must then be increased to normal atmospheric pressure. Any visible evidence of physical contact between the water and the strontium-90 must be considered leakage; and

E. observations. After each of the tests required in items A to D, each device must be examined for evidence of physical damage and for loss of strontium-90. Any evidence of leakage or damage to or failure of any device that could affect containment of the strontium-90 must be cause for rejection of the design if the damage or failure is attributable to a design defect. Loss of strontium-90 from each tested device must be measured by wiping with filter paper an area of at least 100 square centimeters on the outside surface of the device, or by wiping the entire surface area if it is less than 100 square centimeters. The amount of strontium-90 in the water used in the hermetic seal and waterproof test under item D must also be measured. The detection on the filter paper of more than 2,200 disintegrations per minute of strontium-90 per 100 square centimeters of surface wiped or in the water of more than 0.1 percent of the original amount of strontium-90 in any device must be cause for rejection of the tested device.

Statutory Authority: *MS s 144.1202; 144.1203*

History: *29 SR 755*

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