

Acceptability of New Technology Respirator Fit Testing
Devices

HPPOS-175

PDR-9111210266

Title: Acceptability of New Technology Respirator Fit
Testing Devices

See the memorandum from R. L. Pedersen to M. M. Shanbaky (and others) dated April 10, 1989. The memo states that new technology devices can be used to conduct quantitative fit testing of respirators provided the device can be shown to be technically adequate, satisfies regulatory commitments, and meets the intent of the regulatory requirements.

The Radiation Protection Branch was queried on the acceptability of new respirator fit testing devices that were on the market. When determining that a method is technically adequate, an inspector should keep in mind that:

1. Fit Factors determined by any quantitative fit test are not Protection Factors and can not be used as such.
2. Acceptance criteria for Fit Factors should be set at least ten times the Protection Factor of the mask being fit (i.e., to show a proper fit on a mask with a protection factor of 50, a Fit Factor of at least 500 should be measured).
3. Testing methods should reasonably simulate use conditions.
4. An adequate base for correlating the parameter being measured (aerosol concentration, pressure drop, etc.) to a Fit Factor, should be established.

It has been reported that one device on the market, QUANTAFIT, requires the subject to be absolutely still with no facial movement. Apparently momentary breaks in the face seal, caused by facial movement, fail the test. This type of leakage is well known even in a good fitting respirator and it is a major contributor to the overall leakage (or fit) of the mask. If this information is correct, it is difficult to see how this method can

adequately measure the respirator fit.

Regulatory references: 10 CFR 20.103, 10 CFR 20.1703

Subject codes: 5.6, 8.10

Applicability: All