**Section 218.127 Testing VOL Operations**

The owner or operator of each storage vessel specified in Section 218.119 of this Subpart shall comply with the requirements of subsection (a), (b), or (c) below. The applicable subsection for a particular storage vessel depends on the control equipment installed to meet the requirements of this Subpart.

a) After installing the control equipment necessary for the source to comply with the requirements of Section 218.120(a)(1) or (2) of this Subpart (permanently affixed roof and internal floating roof), each owner or operator shall:

1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or if there is liquid accumulated on the roof, or if the seal is detached, or if there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this subsection cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, the owner or operator may request a 30-day extension from the Agency in the inspection report required in Section 218.129(a)(3) of this Subpart. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the control equipment will be repaired or the vessel will be emptied within 30 days.

3) For vessels equipped with both primary and secondary seals:

A) Visually inspect the vessel as specified in subsection (a)(4) below at least every 5 years; or

B) Visually inspect the vessel as specified in subsection (a)(2) above.

4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal, or if the seal fabric or the secondary seal has holes, tears, or other openings in the seal, or if the seal fabric or the gaskets no longer close off the liquid surfaces from the atmosphere, or if the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this subsection exists before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in subsections (a)(2) and (a)(3)(B) above and at intervals no greater than 5 years in the case of vessels specified in subsection (a)(3)(A) above.

5) Notify the Agency in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by subsections (a)(1) and (a)(4) above to afford the Agency the opportunity to have an observer present. If the inspection required by subsection (a)(4) above is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Agency at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Agency at least 7 days prior to the refilling.

b) The owner or operator of external floating roof tanks shall:

1) Determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel.

A) Measurements of gaps between the tank wall the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days after the initial fill with VOL and at least once every 5 years thereafter.

B) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days after the initial fill with VOL and at least once per year thereafter.

C) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of subsections (b)(1)(A) and (b)(1)(B) above.

2) Determine gap widths and areas in the primary and secondary seals individually according to the following procedures:

A) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports;

B) Measure seal gaps around the entire circumference of the tank in each place where a ⅛ inch in diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location; and

C) Determine the total surface area of each gap described in subsection (b)(2)(B) above by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each by the nominal diameter of the tank and compare each ratio to the respective standards in subsection (b)(4) below.

4) Make necessary repairs or empty the storage vessel within 45 days after identification in any inspection for seals not meeting the requirements listed in subsections (b)(4)(A) and (B) below:

A) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 10 in.(2) per foot of tank diameter, and the width of any portion of any gap shall not exceed 1.5 in. There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

B) The secondary seal is to meet the following requirements:

i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in subsection (b)(2)(C) above.

ii) The accumulated area of gaps between the tank wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed 1.0 in.(2) per foot of tank diameter, and the width of any portion of any gap shall not exceed 0.5 in. There shall be no gaps between the tank wall and the secondary seal when used in combination with a vapor mounted primary seal.

iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

C) If a failure that is detected during inspections required in Section 218.127(b)(1) of this Subpart cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, the owner or operator may request a 30-day extension from the Agency in the inspection report required in Section 218.129(b)(4) of this Subpart. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

5) Notify the Agency 30 days in advance of any gap measurements required by subsection (b)(1) above to afford the Agency the opportunity to have an observer present.

6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

A) If the external floating roof has defects, if the primary seal has holes, tears, or other openings in the seal or the seal fabric, or if the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this subsection exist before filling or refilling the storage vessel with VOL.

B) For all the inspections required by subsection (b)(6) above, the owner or operator shall notify the Agency in writing at least 30 days prior to filling or refilling of each storage vessel to afford the Agency the opportunity to inspect the storage vessel prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be sent by express mail so that it is received by the Agency at least 7 days prior to the refilling.

c) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements of Section 218.120(a)(4) of this Subpart shall meet the requirements specified in the general control device requirements of 40 CFR 60.18(e) and (f), incorporated by reference at Section 218.112(d) of this Part.

(Source: Added at 18 Ill. Reg. 16950, effective November 15, 1994)