

- 63.1033 Open-ended valves or lines standards.
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#### § 63.1019 Applicability.

(a) The provisions of this subpart apply to the control of air emissions from equipment leaks for which another subpart references the use of this subpart for such air emission control. These air emission standards for equipment leaks are placed here for administrative convenience and only apply to those owners and operators of facilities subject to a referencing subpart. The provisions of 40 CFR part 63, subpart A (General Provisions) do not apply to this subpart except as noted in the referencing subpart.

(b) *Equipment subject to this subpart.* The provisions of this subpart and the referencing subpart apply to equipment that contains or contacts regulated material. This subpart applies to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and closed vent systems and control devices used to meet the requirements of this subpart.

(c) *Equipment in vacuum service.* Equipment in vacuum service is excluded from the requirements of this subpart.

(d) *Equipment in service less than 300 hours per calendar year.* Equipment intended to be in regulated material service less than 300 hours per calendar year is excluded from the requirements of §§ 63.1025 through 63.1034 and § 63.1036 if it is identified as required in § 63.1022(b)(5).

(e) *Lines and equipment not containing process fluids.* Lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities, and other non-process lines, such as heating and cooling systems that do not combine their materials with those in the processes they serve, are not considered to be part of a process unit or affected facility.

#### § 63.1020 Definitions.

All terms used in this part shall have the meaning given them in the Act and in this section.

*Batch process* means a process in which the equipment is fed intermittently or discontinuously. Processing then occurs in this equipment after which the equipment is generally emptied. Examples of industries that use batch processes include pharmaceutical production and pesticide production.

*Batch product-process equipment train* means the collection of equipment (e.g., connectors, reactors, valves, pumps, etc.) configured to produce a specific product or intermediate by a batch process.

*Bottoms receiver* means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Connector* means flanged, screwed, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are not inaccessible, ceramic, or ceramic-lined (e.g., porcelain, glass, or glass-lined) as described in § 63.1027(e)(2).

*Continuous parameter monitoring system (CPMS)* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

*Distance piece* means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

*Double block and bleed system* means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

*Equipment* means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in regulated material service; and any control devices or systems used to comply with this subpart.

*First attempt at repair*, for the purposes of this subpart, means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring

as specified in § 63.1023(b) to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

*In food and medical service* means that a piece of equipment in regulated material service contacts a process stream used to manufacture a Food and Drug Administration regulated product where leakage of a barrier fluid into the process stream would cause any of the following:

(1) A dilution of product quality so that the product would not meet written specifications,

(2) An exothermic reaction which is a safety hazard,

(3) The intended reaction to be slowed down or stopped, or

(4) An undesired side reaction to occur.

*In gas and vapor service* means that a piece of equipment in regulated material service contains a gas or vapor at operating conditions.

*In heavy liquid service* means that a piece of equipment in regulated material service is not in gas and vapor service or in light liquid service.

*In light liquid service* means that a piece of equipment in regulated material service contains a liquid that meets the following conditions:

(1) The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20°C,

(2) The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20°C is equal to or greater than 20 percent by weight of the total process stream, and

(3) The fluid is a liquid at operating conditions.

(Note: Vapor pressures may be determined by standard reference texts or ASTM D-2879.)

*In liquid service* means that a piece of equipment in regulated material service is not in gas and vapor service.

*In regulated material service* means, for the purposes of this subpart, equipment which meets the definition of "in VOC service," "in VHAP service," "in organic hazardous air pollutant service," or "in" other chemicals or groups of chemicals "service" as defined in the referencing subpart.

*In-situ sampling systems* means nonextractive samplers or in-line samplers.

*In vacuum service* means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

*Instrumentation system* means a group of equipment components used to

condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 1.27 centimeters (0.5 inches) and smaller, and connectors nominally 1.91 centimeters (0.75 inches) and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 1.27 centimeters (0.5 inches) and connectors greater than nominally 1.91 centimeters (0.75 inches) associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

*Liquids dripping* means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquids dripping include puddling or new stains that are indicative of an existing evaporated drip.

*Nonrepairable* means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit or affected facility shutdown.

*Open-ended valve or line* means any valve, except relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

*Organic monitoring device* means a unit of equipment used to indicate the concentration level of organic compounds based on a detection principle such as infra-red, photoionization, or thermal conductivity.

*Pressure relief device or valve* means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 pounds per square inch gauge or by a vacuum are not pressure relief devices.

*Pressure release* means the emission of materials resulting from the system pressure being greater than the set pressure of the relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

*Referencing subpart* means the subpart that refers an owner or operator to this subpart.

*Regulated material*, for purposes of this part, refers to gas from volatile organic liquids (VOL), volatile organic compounds (VOC), hazardous air pollutants (HAP), or other chemicals or groups of chemicals that are regulated by the referencing subpart.

*Regulated source* for the purposes of this part, means the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a referencing subpart.

*Relief device or valve* means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

*Repaired*, for the purposes of this subpart, means that equipment (1) is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this subpart, and (2) unless otherwise specified in applicable provisions of this subpart, is monitored as specified in § 63.1023(b) to verify that emissions from the equipment are below the applicable leak definition.

*Sampling connection system* means an assembly of equipment within a process unit or affected facility used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

*Screwed (threaded) connector* means a threaded pipe fitting where the threads are cut on the pipe wall and the fitting requires only two pieces to make the connection (i.e., the pipe and the fitting).

*Set pressure* means for the purposes of subparts F and G of this part, the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

#### **§ 63.1021 Alternative means of emission limitation.**

(a) *Performance standard exemption.* The provisions of paragraph (b) of this section do not apply to the performance standards of § 63.1030(b) for pressure relief devices or § 63.1031(f) for compressors operating under the alternative compressor standard.

(b) *Requests by owners or operators.* An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 63.1025 through 63.1034 as

provided in paragraph (d) of this section. If the Administrator makes a determination that a means of emission limitation is a permissible alternative, the owner or operator shall either comply with the alternative or comply with the requirements of §§ 63.1025 through 63.1034.

(c) *Requests by manufacturers of equipment.* (1) Manufacturers of equipment used to control equipment leaks of the regulated material may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the regulated material achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will grant permission according to the provisions of paragraphs (d) of this section.

(d) *Permission to use an alternative means of emission limitation.* Permission to use an alternative means of emission limitation shall be governed by the procedures in paragraphs (d)(1) through (d)(4) of this section.

(1) Where the standard is an equipment, design, or operational requirements, the requirements of paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.

(i) Each owner or operator applying for permission to use an alternative means of emission limitation shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.

(ii) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(iii) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve at least the same emission reduction as the equipment, design, and operational requirements of this subpart.

(2) Where the standard is a work practice, the requirements of paragraphs (d)(2)(i) through (d)(2)(vi) of this section apply.

(i) Each owner or operator applying for permission to use an alternative means of emission limitation shall be responsible for collecting and verifying test data for the alternative.

(ii) For each kind of equipment for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.

(iii) For each kind of equipment for which permission is requested, the emission reduction achieved by the

alternative means of emission limitation shall be demonstrated.

(iv) Each owner or operator applying for such permission shall commit, in writing, for each kind of equipment to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.

(v) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (d)(2)(iv) of this section.

(vi) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same or greater emission reduction as the required work practices of this subpart.

(3) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.

(4) If, in the judgement of the Administrator, an alternative means of emission limitation will be approved, the Administrator will publish a notice of the determination in the **Federal Register** using the procedures specified in the referencing subpart.

#### **§ 63.1022 Equipment identification.**

(a) *General equipment identification.* Equipment subject to this subpart shall be identified. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, by designation of process unit or affected facility boundaries by some form of weatherproof identification, or by other appropriate methods.

(b) *Additional equipment identification.* In addition to the general identification required by paragraph (a) of this section, equipment subject to any of the provisions in §§ 63.1023 through 63.1034 shall be specifically identified as required in paragraphs (b)(1) through (b)(5) of this section, as applicable. This paragraph does not apply to an owner or operator of a batch product process who elects to pressure test the batch product process equipment train pursuant to § 63.1036.

(1) *Connectors.* Except for inaccessible, ceramic, or ceramic-lined connectors meeting the provision of § 63.1027(e)(2) and instrumentation systems identified pursuant to paragraph (b)(4) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all

connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the identification shall be complete no later than the completion of the initial survey required by § 63.1027(a)(1) or paragraph (a) of this section.

(2) *Routed to a process or fuel gas system or equipped with a closed vent system and control device.* Identify the equipment that the owner or operator elects to route to a process or fuel gas system or equip with a closed vent system and control device, under the provisions of § 63.1026(e)(3) (pumps in light liquid service), § 63.1028(f)(3) (agitators), § 63.1030(d) (pressure relief devices in gas and vapor service), § 63.1031(e) (compressors), or § 63.1037(a) (alternative means of emission limitation for enclosed-vented process units).

(3) *Pressure relief devices.* Identify the pressure relief devices equipped with rupture disks, under the provisions of § 63.1030(e).

(4) *Instrumentation systems.* Identify instrumentation systems subject to the provisions of this subpart. Individual components in an instrumentation system need not be identified.

(5) *Equipment in service less than 300 hours per calendar year.* The identity, either by list, location (area or group), or other method, of equipment in regulated material service less than 300 hours per calendar year within a process unit or affected facilities subject to the provisions of this subpart shall be recorded.

(c) *Special equipment designations: Equipment that is unsafe or difficult-to-monitor.*

(1) *Designation and criteria for unsafe-to-monitor.* Valves meeting the provisions of § 63.1025(e)(1), pumps meeting the provisions of § 63.1026(e)(6), connectors meeting the provisions of § 63.1027(e)(1), and agitators meeting the provisions of § 63.1028(f)(7) may be designated unsafe-to-monitor if the owner or operator determines that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements of this subpart. Examples of an unsafe-to-monitor equipment include, but is not limited to, equipment under extreme pressure or heat.

(2) *Designation and criteria for difficult-to-monitor.* Valves meeting the provisions of § 63.1025(e)(2) may be designated difficult-to-monitor if the provisions of paragraph (c)(2)(i) apply. Agitators meeting the provisions of § 63.1028(e)(5) may be designated

difficult-to-monitor if the provisions of paragraph (c)(2)(ii) apply.

(i) *Valves.* (A) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters (7 feet) above a support surface or it is not accessible in a safe manner when it is in regulated material service; and

(B) The process unit or affected facility within which the valve is located is an existing source, or a new source for which the owner or operator designates less than 3 percent of the total number of valves as difficult-to-monitor.

(ii) *Agitators.* The owner or operator determines that the agitator cannot be monitored without elevating the monitoring personnel more than 2 meters (7 feet) above a support surface or it is not accessible in a safe manner when it is in regulated material service.

(3) *Identification of unsafe or difficult-to-monitor equipment.* The owner or operator shall record the identity of equipment designated as unsafe-to-monitor or difficult-to-monitor according to the provisions of paragraphs (c)(1) or (c)(2) of this section, the planned schedule for monitoring this equipment; and an explanation why the equipment is unsafe or difficult-to-monitor, if applicable. This record must be kept at the plant and be available for review by an inspector.

(4) *Written plan requirements.* (i) The owner or operator of equipment designated as unsafe-to-monitor according to the provisions of paragraph (c)(1) of this section shall have a written plan that requires monitoring of the equipment as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in § 63.1024 if a leak is detected.

(ii) The owner or operator of equipment designated as difficult-to-monitor according to the provisions of paragraph (c)(2) of this section shall have a written plan that requires monitoring of the equipment at least once per calendar year.

(d) *Special equipment designations: Equipment that is unsafe-to-repair.*

(1) *Designation and criteria.* Connectors subject to the provisions of § 63.1024(e) may be designated unsafe-to-repair if the owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with the repair requirements of this subpart, and if the connector will be repaired before the end of the next process unit or

affected facility shutdown as specified in § 63.1024(e)(2).

(2) *Identification of equipment.* The identity of connectors designated as unsafe-to-repair and an explanation why the connector is unsafe-to-repair shall be recorded.

(e) *Special equipment designations: Compressors operating with an instrument reading of less than 500 parts per million above background.* Identify the compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.1031(f).

(f) *Special equipment designations: Equipment in heavy liquid service.* The owner or operator of equipment in heavy liquid service shall comply with the requirements of either paragraph (f)(1) or (f)(2) of this section, as provided in paragraph (f)(3) of this section.

(1) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.

(2) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.

(3) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

### § 63.1023 Instrument and sensory monitoring for leaks.

(a) *Monitoring for leaks.* The owner or operator of a regulated source subject to this subpart shall monitor regulated equipment as specified in paragraph (a)(1) of this section for instrument monitoring and paragraph (a)(2) of this section for sensory monitoring.

(1) *Instrument monitoring for leaks.* (i) Valves in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1025(b).

(ii) Pumps in light liquid service shall be monitored pursuant to § 63.1026(b).

(iii) Connectors in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1027(b).

(iv) Agitators in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1028(c).

(v) Pressure relief devices in gas and vapor service shall be monitored pursuant to § 63.1030(c).

(vi) Compressors designated to operate with an instrument reading less

than 500 parts per million above background, as described in § 63.1022(e), shall be monitored pursuant to § 63.1031(f).

(2) *Sensory monitoring for leaks.* (i) Pumps in light liquid service shall be observed pursuant to §§ 63.1026(b)(4) and (e)(1).

(ii) Inaccessible, ceramic, or ceramic-lined connectors in gas and vapor service and in light liquid service shall be observed pursuant to § 63.1027(e)(2).

(iii) Agitators in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1028(b)(3) or (e)(1)(i).

(iv) Pumps, valves, agitators, and connectors in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service shall be observed pursuant to § 63.1029(b)(1).

(b) *Instrument monitoring methods.* Instrument monitoring, as required under this subpart, shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section.

(1) *Monitoring method.* Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A, except as otherwise provided in this section.

(2) *Detection instrument performance criteria.* (i) Except as provided for in paragraph (b)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2, paragraph (a) of Method 21 shall be for the representative composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, air, or other inerts that are not HAP or VOC, the representative stream response factor shall be determined on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

(ii) If there is no instrument commercially available that will meet the performance criteria specified in paragraph (b)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the representative response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.

(3) *Detection instrument calibration procedure.* The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(4) *Detection instrument calibration gas.* Calibration gases shall be zero air (less than 10 parts per million of

hydrocarbon in air); and the gases specified in paragraph (b)(4)(i) of this section except as provided in paragraph (b)(4)(ii) of this section.

(i) Mixtures of methane in air at a concentration no more than 2,000 parts per million greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(ii) A calibration gas or other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (b)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(5) *Monitoring performance.* Monitoring shall be performed when the equipment is in regulated material service or is in use with any other detectable material.

(6) *Monitoring data.* Monitoring data obtained prior to the regulated source becoming subject to the referencing subpart that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may still be used to qualify initially for less frequent monitoring under the provisions in § 63.1025(a)(2), (b)(3) or (b)(4) for valves or § 63.1027(b)(3) for connectors provided the departures from the criteria or from the specified monitoring frequency of § 63.1025(b)(3) or (b)(4) are minor and do not significantly affect the quality of the data. Examples of minor departures are monitoring at a slightly different frequency (such as every 6 weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2, paragraph (a) of Method 21 of Appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring using a different leak definition if the data would indicate the presence or absence of a leak at the concentration specified in this subpart. Failure to use a calibrated instrument is not considered a minor departure.

(c) *Instrument monitoring using background adjustments.* The owner or operator may elect to adjust or not to adjust the instrument readings for

background. If an owner or operator elects not to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (b)(1) through (b)(5) of this section. In such cases, all instrument readings shall be compared directly to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance with § 63.1030(b) (pressure relief devices) or § 63.1031(f) (alternative compressor standard). If an owner or operator elects to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (c)(1) through (c)(4) of this section.

(1) The requirements of paragraphs (b)(1) through (b)(5) of this section shall apply.

(2) The background level shall be determined, using the procedures in Method 21 of 40 CFR part 60, appendix A.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance with § 63.1030(b) (pressure relief devices) or § 63.1031(f) (alternative compressor standard).

(d) *Sensory monitoring methods.* Sensory monitoring consists of visual, audible, olfactory, or any other detection method used to determine a potential leak to the atmosphere.

(e) *Leaking equipment identification and records.* (1) When each leak is detected pursuant to the monitoring specified in paragraph (a) of this section, a weatherproof and readily visible identification, shall be attached to the leaking equipment.

(2) When each leak is detected, the information specified in paragraphs (e)(2)(i) and (e)(2)(ii) shall be recorded and kept pursuant to the referencing subpart, except for the information for connectors complying with the 8 year monitoring period allowed under § 63.1027(b)(3)(iii) shall be kept 5 years beyond the date of its last use.

(i) The instrument and the equipment identification and the instrument operator's name, initials, or identification number if a leak is detected or confirmed by instrument monitoring.

(ii) The date the leak was detected.

#### § 63.1024 Leak repair.

(a) *Leak repair schedule.* The owner or operator shall repair each leak detected as soon as practical, but not later than 15 calendar days after it is detected, except as provided in paragraph (d) of this section. A first attempt at repair as defined in the referencing subpart shall be made no later than 5 calendar days after the leak is detected. First attempt at repair for pumps includes, but is not limited to, tightening the packing gland nuts and/or ensuring that the seal flush is operating at design pressure and temperature. First attempt at repair for valves includes, but is not limited to, tightening the bonnet bolts, and/or replacing the bonnet bolts, and/or tightening the packing gland nuts, and/or injecting lubricant into the lubricated packing.

(b) [Reserved]

(c) *Leak identification removal.*—(1) *Valves and connectors.* The leak identification on a valve may be removed after it has been monitored as specified in § 63.1025(d)(2), and no leak has been detected during that monitoring. The leak identification on a connector may be removed after it has been monitored as specified in § 63.1027(b)(3)(iv) and no leak has been detected during that monitoring.

(2) *Other equipment.* The identification that has been placed, pursuant to § 63.1023(e)(1), on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of § 63.1027(b)(3), may be removed after it is repaired.

(d) *Delay of repair.* Delay of repair is allowed for any of the conditions specified in paragraphs (d)(1) through (d)(5) of this section. The owner or operator shall maintain a record of the facts that explain any delay of repairs and, where appropriate, why the repair was technically infeasible without a process unit shutdown.

(1) Delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible without a process unit or affected facility shutdown. Repair of this equipment shall occur as soon as practical, but no later than the end of the next process unit or affected facility shutdown, except as provided in paragraph (d)(5) of this section.

(2) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in regulated material service.

(3) Delay of repair for valves, connectors, and agitators is also allowed if the provisions of paragraphs (d)(3)(i) and (d)(3)(ii) of this section are met.

(i) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(ii) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with subpart SS of this part.

(4) Delay of repair for pumps is also allowed if the provisions of paragraphs (d)(4)(i) and (d)(4)(ii) of this section are met.

(i) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of § 63.1035(d) will provide better performance or one of the specifications of paragraphs (d)(4)(i)(A) through (d)(4)(i)(C) of this section are met.

(A) A dual mechanical seal system that meets the requirements of § 63.1026(e)(1) will be installed;

(B) A pump that meets the requirements of § 63.1026(e)(1) will be installed; or

(C) A system that routes emissions to a process or a fuel gas system or a closed vent system and control device that meets the requirements of § 63.1026(e)(3) will be installed; and

(ii) Repair is completed as soon as practical, but not later than 6 months after the leak was detected.

(5) Delay of repair beyond a process unit or affected facility shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit or affected facility shutdown, and valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit or affected facility shutdown will not be allowed unless the third process unit or affected facility shutdown occurs sooner than 6 months after the first process unit or affected facility shutdown.

(e) *Unsafe-to-repair connectors.* Any connector that is designated, as described in § 63.1022(d), as an unsafe-to-repair connector is exempt from the requirements of § 63.1027(d), and paragraph (a) of this section if the provisions of (e)(1) and (e)(2) of this section are met.

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The connector will be repaired before the end of the next scheduled process unit or affected facility shutdown.

(f) *Leak repair records.* For each leak detected, the information specified in paragraphs (f)(1) through (f)(5) of this section shall be recorded and maintained pursuant to the referencing subpart.

(1) The date of first attempt to repair the leak.

(2) The date of successful repair of the leak.

(3) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A at the time the leak is successfully repaired or determined to be nonreparable.

(4) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak as specified in paragraphs (f)(4)(i) and (f)(4)(ii) of this section.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup, shutdown, and malfunction plan, as required by the referencing subpart for the source, or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(5) Dates of process unit or affected facility shutdowns that occur while the equipment is unrepaired.

**§ 63.1025 Valves in gas and vapor service and in light liquid service standards.**

(a) *Compliance schedule.* (1) The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(2) The use of monitoring data generated before the regulated source became subject to the referencing subpart to qualify initially for less frequent monitoring is governed by the provisions of § 63.1023(b)(6).

(b) *Leak detection.* Unless otherwise specified in §§ 63.1021(b) 63.1036, 63.1037, or paragraph (e) of this section, or the referencing subpart, the owner or operator shall monitor all valves at the intervals specified in paragraphs (b)(3) and/or (b)(4) of this section and shall comply with all other provisions of this section.

(1) *Monitoring method.* The valves shall be monitored to detect leaks by the

method specified in § 63.1023(b), (c), and (e).

(2) *Instrument reading that defines a leak.* The instrument reading that defines a leak is 500 parts per million or greater.

(3) *Monitoring frequency.* The owner or operator shall monitor valves for leaks at the intervals specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section and shall keep the record specified in paragraph (b)(3)(vi) of this section.

(i) If at least the greater of 2 valves or 2 percent of the valves in a process unit leak, as calculated according to paragraph (c) of this section, the owner or operator shall monitor each valve once per month.

(ii) At process units with less than the greater of 2 leaking valves or 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (b)(3)(iii) through (b)(3)(v) of this section. Monitoring data generated before the regulated source became subject to the referencing subpart and meeting the criteria of either § 63.1023(b)(1) through (b)(5), or § 63.1023(b)(6), may be used to qualify initially for less frequent monitoring under paragraphs (b)(3)(iii) through (b)(3)(v) of this section.

(iii) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every two quarters

(iv) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every four quarters.

(v) At process units with less than 0.25 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 years.

(vi) The owner or operator shall keep a record of the monitoring schedule for each process unit.

(4) *Valve subgrouping.* For a process unit or a group of process units to which this subpart applies, an owner or operator may choose to subdivide the valves in the applicable process unit or group of process units and apply the provisions of paragraph (b)(3) of this section to each subgroup. If the owner or operator elects to subdivide the valves in the applicable process unit or group of process units, then the provisions of paragraphs (b)(4)(i) through (b)(4)(viii) of this section apply.

(i) The overall performance of total valves in the applicable process unit or group of process units to be subdivided shall be less than 2 percent leaking valves, as detected according to paragraphs (b)(1) and (b)(2) of this section and as calculated according to

paragraphs (c)(1)(ii) and (c)(2) of this section.

(ii) The initial assignment or subsequent reassignment of valves to subgroups shall be governed by the provisions of paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section.

(A) The owner or operator shall determine which valves are assigned to each subgroup. Valves with less than one year of monitoring data or valves not monitored within the last twelve months must be placed initially into the most frequently monitored subgroup until at least one year of monitoring data have been obtained.

(B) Any valve or group of valves can be reassigned from a less frequently monitored subgroup to a more frequently monitored subgroup provided that the valves to be reassigned were monitored during the most recent monitoring period for the less frequently monitored subgroup. The monitoring results must be included with that less frequently monitored subgroup's associated percent leaking valves calculation for that monitoring event.

(C) Any valve or group of valves can be reassigned from a more frequently monitored subgroup to a less frequently monitored subgroup provided that the valves to be reassigned have not leaked for the period of the less frequently monitored subgroup (e.g., for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Nonreparable valves may not be reassigned to a less frequently monitored subgroup.

(iii) The owner or operator shall determine every 6 months if the overall performance of total valves in the applicable process unit or group of process units is less than 2 percent leaking valves and so indicate the performance in the next Periodic Report. If the overall performance of total valves in the applicable process unit or group of process units is 2 percent leaking valves or greater, the owner or operator shall no longer subgroup and shall revert to the program required in paragraphs (b)(1) through (b)(3) of this section for that applicable process unit or group of process units. An owner or operator can again elect to comply with the valve subgrouping procedures of paragraph (b)(4) of this section if future overall performance of total valves in the process unit or groups of process units is again less than 2 percent. The overall performance of total valves in the applicable process unit or group of process units shall be calculated as a weighted average of the percent leaking

valves of each subgroup according to Equation number 1:

$$\%V_{LO} = \frac{\sum_{i=1}^n (\%V_{Li} \times V_i)}{\sum_{i=1}^n V_i} \quad [\text{Eq. 1}]$$

Where:

$\%V_{LO}$ =Overall performance of total valves in the applicable process unit or group of process units

$\%V_{Li}$ =Percent leaking valves in subgroup i, most recent value calculated according to the procedures in paragraphs (c)(1)(ii) and (c)(2) of this section.

$V_i$ =Number of valves in subgroup i.

n=Number of subgroups.

(iv) The owner or operator shall maintain records specified in paragraphs (b)(4)(iv)(A) through (b)(4)(iv)(D) of this section.

(A) Which valves are assigned to each subgroup,

(B) Monitoring results and calculations made for each subgroup for each monitoring period,

(C) Which valves are reassigned, the last monitoring result prior to reassignment, and when they were reassigned, and

(D) The results of the semiannual overall performance calculation required in paragraph (b)(4)(iii) of this section.

(v) The owner or operator shall notify the Administrator no later than 30 days prior to the beginning of the next monitoring period of the decision to subgroup valves. The notification shall identify the participating process units and the number of valves assigned to each subgroup, if applicable, and may be included in the next Periodic Report.

(vi) The owner or operator shall submit in the periodic reports the information specified in paragraphs (b)(4)(vi)(A) and (b)(4)(vi)(B).

(A) Total number of valves in each subgroup, and

(B) Results of the semiannual overall performance calculation required by paragraph (b)(4)(iii) of this section.

(vii) To determine the monitoring frequency for each subgroup, the calculation procedures of paragraph (c)(2) of this section shall be used.

(viii) Except for the overall performance calculations required by paragraphs (b)(4)(i) and (iii) of this section, each subgroup shall be treated as if it were a process unit for the purposes of applying the provisions of this section.

(c) *Percent leaking valves calculation.*—(1) *Calculation basis and*

*procedures.* (i) The owner or operator shall decide no later than the compliance date of this part or upon revision of an operating permit whether to calculate percent leaking valves on a process unit or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis and this shall be the basis used for comparison with the subgrouping criteria specified in paragraph (b)(4)(i) of this section.

(ii) The percent leaking valves for each monitoring period for each process unit or valve subgroup, as provided in paragraph (b)(4) of this section, shall be calculated using the following equation:

$$\%V_L = (V_L/V_T) \times 100 \quad [\text{Eq. 2}]$$

Where:

$\%V_L$ =Percent leaking valves.

$V_L$ =Number of valves found leaking, excluding nonrepairable valves, as provided in paragraph (c)(3) of this section.

$V_T$ =The sum of the total number of valves monitored.

(2) *Calculation for monitoring frequency.* When determining monitoring frequency for each process unit or valve subgroup subject to monthly, quarterly, or semiannual monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last two monitoring periods. When determining monitoring frequency for each process unit or valve subgroup subject to annual or biennial (once every 2 years) monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last three monitoring periods.

(3) *Nonrepairable valves.* (i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (c)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking valves calculation in a previous period) up to a maximum of 1 percent of the total number of valves in regulated material service at a process unit or affected facility may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in regulated material service at a process unit or affected facility, the number of nonrepairable valves exceeding 1 percent of the total

number of valves in regulated material service shall be included in the calculation of percent leaking valves.

(d) *Leak repair.* (1) If a leak is determined pursuant to paragraph (b), (e)(1), or (e)(2) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable.

(2) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. The monitoring required by this paragraph is in addition to the monitoring required to satisfy the definition of repair.

(i) The monitoring shall be conducted as specified in § 63.1023(b) and (c) of this section, as appropriate, to determine whether the valve has resumed leaking.

(ii) Periodic monitoring required by paragraph (b) of this section may be used to satisfy the requirements of this paragraph, if the timing of the monitoring period coincides with the time specified in this paragraph. Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph.

(iii) If a leak is detected by monitoring that is conducted pursuant to this paragraph, the owner or operator shall follow the provisions of paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of paragraph (c)(1)(ii) of this section.

(A) If the owner or operator elected to use periodic monitoring required by paragraph (b) of this section to satisfy the requirements of this paragraph, then the valve shall be counted as a leaking valve.

(B) If the owner or operator elected to use other monitoring, prior to the periodic monitoring required by paragraph (b) of this section, to satisfy the requirements of this paragraph, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.

(e) *Special provisions for valves.*—(1) *Unsafe-to-monitor valves.* Any valve that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) of this section and the owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).

(2) *Difficult-to-monitor valves.* Any valve that is designated, as described in § 63.1022(c)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (b) of this section and the

owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).

(3) *Less than 250 valves.* Any equipment located at a plant site with fewer than 250 valves in regulated material service is exempt from the requirements for monthly monitoring specified in paragraph (b)(3)(i) of this section. Instead, the owner or operator shall monitor each valve in regulated material service for leaks once each quarter, or comply with paragraphs (b)(4)(iii), (b)(4)(iv), or (b)(4)(v) of this section except as provided in paragraphs (e)(1) and (e)(2) of this section.

### § 63.1026 Pumps in light liquid service standards.

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) *Leak detection.* Unless otherwise specified in § 63.1021(b) or paragraphs (e)(1) through (e)(5) of this section, the owner or operator shall monitor each pump to detect leaks and shall comply with all other provisions of this section.

(1) *Monitoring method.* The pumps shall be monitored monthly to detect leaks by the method specified in § 63.1023(b), (c), and (e).

(2) *Instrument reading that defines a leak.* The instrument reading that defines a leak is specified in paragraphs (b)(2)(1) through (b)(2)(iii) of this section.

(i) 5,000 parts per million or greater for pumps handling polymerizing monomers;

(ii) 2,000 parts per million or greater for pumps in food/medical service; and

(iii) 1,000 parts per million or greater for all other pumps.

(3) *Leak repair exception.* For pumps to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.

(4) *Visual inspection.* Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (b)(4)(i) or (b)(4)(ii) of this section.

(i) The owner or operator shall monitor the pump as specified in § 63.1023(b), (c), and (e). If the instrument reading indicates a leak as

specified in paragraph (b)(2) of this section, a leak is detected and it shall be repaired using the procedures in § 63.1024, except as specified in paragraph (b)(3) of this section; or

(ii) The owner or operator shall eliminate the visual indications of liquids dripping.

(5) *Visual inspection: Leak repair.* Where a leak is identified by visual indications of liquids dripping, repair shall mean that the visual indications of liquids dripping have been eliminated.

(c) *Percent leaking pumps calculation.*

(1) The owner or operator shall decide no later than the compliance date of this part or upon revision of an operating permit whether to calculate percent leaking pumps on a process unit basis or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis.

(2) If, when calculated on a 6-month rolling average, at least the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of § 63.1035.

(3) The number of pumps at a process unit or affected facility shall be the sum of all the pumps in regulated material service, except that pumps found leaking in a continuous process unit or affected facility within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = \left( \frac{P_L - P_S}{P_T - P_S} \right) \times 100 \text{ [Eq. 3]}$$

Where:

$\%P_L$  = Percent leaking pumps

$P_L$  = Number of pumps found leaking as determined through monthly monitoring as required in paragraph (b)(1) of this section.

$P_S$  = Number of pumps leaking within 1 month of start-up during the current monitoring period.

$P_T$  = Total pumps in regulated material service, including those meeting the criteria in paragraphs (e)(1) and (e)(2) of this section.

(d) *Leak repair.* If a leak is detected pursuant to paragraph (b) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable, unless otherwise specified in paragraphs (b)(4) of this section for leaks identified by visual indications of liquids dripping.

(e) *Special provisions for pumps.*—(1) *Dual mechanical seal pumps.* Each pump equipped with a dual mechanical

seal system that includes a barrier fluid system is exempt from the requirements of paragraph (b) of this section, provided the requirements specified in paragraphs (e)(1)(i) through (e)(1)(viii) of this section are met.

(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both. The owner or operator shall keep records at the plant of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes. This record must be available for review by an inspector.

(ii) Each dual mechanical seal system shall meet the requirements specified in paragraph (e)(1)(ii)(A), (e)(1)(ii)(B), or (e)(1)(ii)(C) of this section.

(A) Each dual mechanical seal system is operated with the barrier fluid at a pressure that is at all times (except periods of startup, shutdown, or malfunction) greater than the pump stuffing box pressure; or

(B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of subpart SS of this part; or

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(iii) The barrier fluid is not in light liquid service.

(iv) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(v) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in paragraphs (e)(1)(v)(A) or (e)(1)(v)(B) of this section.

(A) The owner or operator shall monitor the pump as specified in § 63.1023(b), (c), and (e) to determine if there is a leak of regulated material in the barrier fluid. If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected and it shall be repaired using the procedures in § 63.1024; or

(B) The owner or operator shall eliminate the visual indications of liquids dripping.



(vi) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(1)(i) of this section, or if based on the criteria established in paragraph (e)(1)(i) of this section the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(vii) Each sensor as described in paragraph (e)(1)(iv) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(viii) When a leak is detected pursuant to paragraph (e)(1)(vi) of this section, it shall be repaired as specified in § 63.1024(a).

(2) *No external shaft.* Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the monitoring requirements of paragraph (b) of this section.

(3) *Routed to a process or fuel gas system or equipped with a closed vent system.* Any pump that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage from the pump to a control device meeting the requirements of subpart SS of this part or § 63.1021(b) is exempt from the monitoring requirements of paragraph (b) of this section.

(4) *Unmanned plant site.* Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(4) and (e)(1)(v) of this section, and the daily requirements of paragraph (e)(1)(vii) of this section, provided that each pump is visually inspected as often as practical and at least monthly.

(5) *90 percent exemption.* If more than 90 percent of the pumps at a process unit or affected facility meet the criteria in either paragraph (e)(1) or (e)(2) of this section, the process unit or affected facility is exempt from the requirements of paragraph (b) of this section.

(6) *Unsafe-to-monitor pumps.* Any pump that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor pump is exempt from the monitoring requirements of paragraph (b) of this section and the repair requirements of § 63.1024 and the owner or operator shall monitor the pump according to the written plan specified in § 63.1022(c)(4).

### § 63.1027 Connectors in gas and vapor service and in light liquid service standards.

(a) *Compliance schedule.* The owner or operator shall monitor all connectors in each process unit initially for leaks by the later of either 12 months after the compliance date as specified in a referencing subpart or 12 months after initial startup. If all connectors in each process unit have been monitored for leaks prior to the compliance date specified in the referencing subpart, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

(b) *Leak detection.* Except as allowed in § 63.1021(b)(1) or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) *Monitoring method.* The connectors shall be monitored to detect leaks by the method specified in § 63.1023(b).

(2) *Instrument reading that defines a leak.* If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

(3) *Monitoring periods.* The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (b)(3)(iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (b)(3)(v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (b)(3)(iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.

(i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).

(ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5

percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4 year monitoring period.

(iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.

(A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.

(B) If the percent leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent leaking connectors of the total monitored connectors.

(C) If the percent leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.

(iv) If, during the monitoring conducted pursuant to paragraph (b)(3)(i) through (b)(3)(iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.

(v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.

(c) *Percent leaking connectors calculation.* For use in determining the monitoring frequency, as specified in paragraphs (a), and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using equation number 4.

$$\%C_L = C_L / (C_t + C_C) \times 100 \quad [\text{Eq. 4}]$$

Where:

%C<sub>L</sub> = Percent leaking connectors as determined through monitoring required in paragraphs (a) and (b) of this section.

C<sub>L</sub> = Number of connectors measured at 500 parts per million or greater, by the method specified in § 63.1023(b).

C<sub>t</sub> = Total number of monitored connectors in the process unit or affected facility.

(d) *Leak repair.* If a leak is detected pursuant to paragraphs (a) and (b) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable.

(e) *Special provisions for connectors.*—(1) *Unsafe-to-monitor connectors.* Any connector that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (b)(1) through (b)(3) of this section and the owner or operator shall monitor according to the written plan specified in § 63.1022(c)(4).

(2) *Inaccessible, ceramic, or ceramic-lined connectors.* (i) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section and from the recordkeeping and reporting requirements of §§ 63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (e)(2)(i)(A) through (e)(2)(i)(F) of this section, as applicable.

(A) Buried;

(B) Insulated in a manner that prevents access to the connector by a monitor probe;

(C) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(D) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground.

(E) Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold;

(F) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(ii) If any inaccessible, ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other

means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

**§ 63.1028 Agitators in gas and vapor service and in light liquid service standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) [Reserved]

(c) *Leak detection.*—(1) *Monitoring method.* Each agitator seal shall be monitored monthly to detect leaks by the methods specified in § 63.1023(b), (c), and (e), except as provided in § 63.1021(b).

(2) *Instrument reading that defines a leak.* If an instrument reading equivalent of 10,000 parts per million or greater is measured, a leak is detected.

(3) *Visual inspection.* (i) Each agitator seal shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.

(ii) If there are indications of liquids dripping from the agitator seal, the owner or operator shall follow the procedures specified in paragraphs (b)(3)(ii)(A) and (b)(3)(ii)(B) of this section.

(A) The owner or operator shall either monitor the agitator seal as specified in § 63.1023(b), (c), and (e) to determine if there is a leak of regulated material. If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected, and it shall be repaired using the procedures in § 63.1024;

(B) The owner or operator shall eliminate the indications of liquids dripping from the pump seal.

(d) *Leak repair.* If a leak is detected, then the leak shall be repaired using the procedures in § 63.1024(a).

(e) *Special provisions for agitators.*—(1) *Dual mechanical seal.* Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (b) of this section, provided the requirements specified in paragraphs (e)(1)(i) through (e)(1)(vi) of this section are met.

(i) Each dual mechanical seal system shall meet the applicable requirements specified in paragraphs (e)(1)(i)(A), (e)(1)(i)(B), or (e)(1)(i)(C) of this section.

(A) Operated with the barrier fluid at a pressure that is at all times (except during periods of startup, shutdown, or malfunction) greater than the agitator stuffing box pressure; or

(B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control

device that meets the requirements of § 63.1034; or

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(ii) The barrier fluid is not in light liquid service.

(iii) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(iv) Each agitator seal is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal. If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in paragraphs (e)(1)(iv)(A) or (e)(1)(iv)(B) of this section.

(A) The owner or operator shall monitor the agitator seal as specified in § 63.1023(b), (c), and (e) to determine the presence of regulated material in the barrier fluid. If an instrument reading equivalent to or greater than the leak level specified for agitators in the referencing subpart is measured, a leak is detected and it shall be repaired using the procedures in § 63.1024, or

(B) The owner or operator shall eliminate the visual indications of liquids dripping.

(v) Each sensor as described in paragraph (e)(1)(iii) of this section is observed daily or is equipped with an alarm unless the agitator seal is located within the boundary of an unmanned plant site.

(vi) The owner or operator of each dual mechanical seal system shall meet the requirements specified in paragraphs (e)(1)(vi)(A) and (e)(1)(vi)(B).

(A) The owner or operator shall determine, based on design considerations and operating experience, criteria that indicates failure of the seal system, the barrier fluid system, or both and applicable to the presence and frequency of drips. If indications of liquids dripping from the agitator seal exceed the criteria, or if, based on the criteria the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.

(B) The owner or operator shall keep records of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes.

(2) *No external shaft.* Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraph (b) of this section.

(3) *Routed to a process or fuel gas system or equipped with a closed vent system.* Any agitator that is routed to a process or fuel gas system that captures and transports leakage from the agitator to a control device meeting the requirements of § 63.1034 is exempt from the requirements of paragraph (b) of this section.

(4) *Unmanned plant site.* Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(1)(iv) of this section, and the daily requirements of paragraph (e)(1)(v) of this section, provided that each agitator is visually inspected as often as practical and at least monthly.

(5) *Difficult-to-monitor agitator seals.* Any agitator seal that is designated, as described in § 63.1022(c)(2), as a difficult-to-monitor agitator seal is exempt from the requirements of paragraph (b) of this section and the owner or operator shall monitor the agitator seal according to the written plan specified in § 63.1022(c)(4).

(6) *Equipment obstructions.* Any agitator seal that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring requirements of paragraph (b) of this section.

(7) *Unsafe-to-monitor agitator seals.* Any agitator seal that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor agitator seal is exempt from the requirements of paragraph (b) of this section and the owner or operator of the agitator seal monitors the agitator seal according to the written plan specified in § 63.1022(c)(4).

**§ 63.1029 Pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in liquid service; and instrumentation systems standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) *Leak detection.*—(1) *Monitoring method.* Pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in light liquid or heavy liquid service; and instrumentation systems shall be monitored within 5 calendar days by the method specified in § 63.1023(b), (c), and (e) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method, unless the potential leak is repaired as required in paragraph (c) of this section.

(2) *Instrument reading that defines a leak.* If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for pumps in food and medical service, or 1,000 parts per million or greater for all other pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured pursuant to paragraph (b)(1) of this section, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.

(c) *Leak repair.* For equipment identified in paragraph (b) of this section that is not monitored by the method specified in § 63.1023(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

**§ 63.1030 Pressure relief devices in gas and vapor service standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) *Compliance standard.* Except during pressure releases as provided for in paragraph (c) of this section, each pressure relief device in gas and vapor service shall be operated with an instrument reading of less than 500 parts per million as measured by the method specified in § 63.1023(b), (c), and (e).

(c) *Pressure relief requirements.* (1) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million, as soon as practical, but no later than 5 calendar days after each pressure release, except as provided in § 63.1024(d).

(2) The pressure relief device shall be monitored no later than five calendar days after the pressure to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.1023(b), (c), and (e).

(3) The owner or operator shall record the dates and results of the monitoring required by paragraph (c)(2) of this section following a pressure release including the background level measured and the maximum instrument

reading measured during the monitoring.

(d) *Pressure relief devices routed to a process or fuel gas system or equipped with a closed vent system and control device.* Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage from the pressure relief device to a control device meeting the requirements of either § 63.1034 or § 63.1021(b) is exempt from the requirements of paragraphs (b) and (c) of this section.

(e) *Rupture disk exemption.* Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (b) and (c) of this section provided the owner or operator installs a replacement rupture disk upstream of the pressure relief device as soon as practical after each pressure release but no later than 5 calendar days after each pressure release, except as provided in § 63.1024(d).

**§ 63.1031 Compressors standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) *Seal system standard.* Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in § 63.1021(b) and paragraphs (e) and (f) of this section. Each compressor seal system shall meet the applicable requirements specified in paragraph (b)(1), (b)(2), or (b)(3) of this section.

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure at all times (except during periods of startup, shutdown, or malfunction); or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that meets the requirements of § 63.1034; or

(3) Equipped with a closed-loop system that purges the barrier fluid directly into a process stream.

(c) *Barrier fluid system.* The barrier fluid shall not be in light liquid service. Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. Each sensor shall be observed daily or shall be equipped with an alarm unless the compressor is

located within the boundary of an unattended plant site.

(d) *Failure criterion and leak detection.*—(1) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.

(2) The owner or operator shall keep records of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes.

(e) *Routed to a process or fuel gas system or equipped with a closed vent system.* A compressor is exempt from the requirements of paragraphs (b) through (d) of this section if it is equipped with a system to capture and transport leakage from the compressor drive shaft seal to a process or a fuel gas system or to a closed vent system that captures and transports leakage from the compressor to a control device meeting the requirements of § 63.1034.

(f) *Alternative compressor standard.*—(1) Any compressor that is designated, as described in § 63.1022(e), as operating with an instrument reading of less than 500 parts per million above background shall operate at all times with an instrument reading of less than 500 parts per million. A compressor so designated is exempt from the requirements of paragraphs (b) through (d) of this section if the compressor is demonstrated, initially upon designation, annually, and at other times requested by the Administrator to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.1023(b), (c), and (e). A compressor may not be designated or operated as having an instrument reading of less than 500 parts per million as described in § 63.1022(e) if the compressor has a maximum instrument reading greater than 500 parts per million.

(2) The owner or operator shall record the dates and results of each compliance test including the background level measured and the maximum instrument reading measured during each compliance test.

#### **§ 63.1032 Sampling connection systems standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance

dates specified in the referencing subpart.

(b) *Equipment requirement.* Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed vent system, except as provided in paragraph (d) of this section or § 63.1021(b). Gases displaced during filling of the sample container are not required to be collected or captured.

(c) *Equipment design and operation.* Each closed-purge, closed-loop, or closed vent system as required in paragraph (b) of this section shall meet the applicable requirements specified in paragraphs (c)(1) through (c)(5) of this section.

(1) The system shall return the purged process fluid directly to a process line or to a fuel gas system; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that meets the requirements of § 63.1034; or

(4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (c)(4)(i), (c)(4)(ii), or (c)(4)(iii) of this section.

(i) A waste management unit as defined in 40 CFR 63.111 or subpart G, if the waste management unit complying with the provisions of 40 CFR part 63, subpart G, applicable to group 1 wastewater streams. If the purged process fluid does not contain any regulated material listed in Table 9 of 40 CFR part 63, subpart G, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR part 63, subpart G, applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to a National Pollution Discharge Elimination System (NPDES) permit or sends the wastewater to an NPDES-permitted facility.

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR parts 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(5) Containers that are part of a closed purge system must be covered or closed when not being filled or emptied.

(d) *In-situ sampling systems.* In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (b) and (c) of this section.

#### **§ 63.1033 Open-ended valves or lines standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this

section no later than the compliance date specified in the referencing subpart.

(b) *Equipment and operational requirements.* (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 63.1021(b) and paragraphs (c) and (d) of this section. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance. The operational provisions of paragraphs (b)(2) and (b)(3) of this section also apply.

(2) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(3) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (b)(1) of this section at all other times.

(c) *Emergency shutdown exemption.* Open-ended valves or lines in an emergency shutdown system that are designed to open automatically in the event of a process upset are exempt from the requirements of paragraph (b) of this section.

(d) *Polymerizing materials exemption.* Open-ended valves or lines containing materials that would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraph (b) of this section are exempt from the requirements of paragraph (b) of this section.

#### **§ 63.1034 Closed vent systems and control devices; or emissions routed to a fuel gas system or process standards.**

(a) *Compliance schedule.* The owner or operator shall comply with this section no later than the compliance date specified in the referencing subpart.

(b) *Compliance standard.* (1) Owners or operators of closed vent systems and control devices used to comply with the provisions of this subpart shall design and operate the closed vent systems and control devices with an efficiency specified in the referencing subpart or greater and shall comply with the provisions of subpart SS of this part, except as provided in § 63.1037.

(2) Owners or operators routing emissions from equipment leaks to a fuel gas system or process shall comply

with the provisions of subpart SS of this part, except as provided in § 63.1037.

**§ 63.1035 Quality improvement program for pumps.**

(a) *Criteria.* If, on a 6-month rolling average, at least the greater of either 10 percent of the pumps in a process unit or affected facility (or plant site) or three pumps in a process unit or affected facility (or plant site) leak, the owner or operator shall comply with the requirements specified in paragraphs (a)(1) and (a)(2) of this section.

(1) Pumps that are in food and medical service or in polymerizing monomer service shall comply with all requirements except for those specified in paragraph (d)(8) of this section.

(2) Pumps that are not in food and medical or polymerizing monomer service shall comply with all of the requirements of this section.

(b) *Exiting the QIP.* The owner or operator shall comply with the requirements of this section until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps, calculated as a 6-month rolling average, in the process unit or affected facility (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 63.1026.

(c) *Resumption of QIP.* If, in a subsequent monitoring period, the process unit or affected facility (or plant site) has greater than 10 percent of the pumps leaking or three pumps leaking (calculated as a 6-month rolling average), the owner or operator shall resume the quality improvement program starting at performance trials.

(d) *QIP requirements.* The quality improvement program shall meet the requirements specified in paragraphs (d)(1) through (d)(8) of this section.

(1) The owner or operator shall comply with the requirements in § 63.1026.

(2) *Data collection.* The owner or operator shall collect the data specified in paragraphs (d)(2)(i) through (d)(2)(v) of this section and maintain records for each pump in each process unit or affected facility (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit, affected facility, or plant site basis.

(i) Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.

(ii) Service characteristics of the stream such as discharge pressure, temperature, flow rate, corrosivity, and annual operating hours.

(iii) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.

(iv) If a leak is detected, the repair methods used and the instrument readings after repair.

(v) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units or affected facilities, a description of any maintenance or quality assurance programs used in the process unit or affected facility that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the pumps as long as the process unit or affected facility (or plant site) remains in the quality improvement program.

(4) *Pump or pump seal inspection.* The owner or operator shall inspect all pumps or pump seals that exhibited frequent seal failures and were removed from the process unit or affected facility due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) *Data analysis.* The owner or operator shall analyze the data collected to comply with the requirements of paragraph (d)(2) of this section to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process-specific factors.

(ii) The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process unit, affected facility, or plant site. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the

available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit or affected facility (or plant site).

(iii) The analysis shall include consideration of the information specified in paragraphs (d)(5)(iii)(A) through (d)(5)(iii)(C) of this section.

(A) The data obtained from the inspections of pumps and pump seals removed from the process unit or affected facility due to leaks;

(B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and

(C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using data collected for a minimum of 6 months. An analysis of the data shall be done each year the process unit or affected facility is in the quality improvement program.

(6) *Trial evaluation program.* A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify use of superior performing pump seal technology or pumps that can be applied to the areas identified as having poorer than average performance, except as provided in paragraph (d)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit or affected facility (or plant site) the pump designs or seal technologies, and operating and maintenance practices that have been identified by others as having low emission performance.

(i) The trial evaluation program shall include on-line trials of pump seal technologies or pump designs and operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 10 percent in similar services, as having low

probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing pump seal technologies or pumps is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in paragraph (e)(1)(ii) of this section.

(ii) The number of pump seal technologies or pumps in the trial evaluation program shall be the lesser of 1 percent or two pumps for programs involving single process units or affected facilities and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units or affected facilities. The minimum number of pumps or pump seal technologies in a trial program shall be one.

(iii) The trial evaluation program shall specify and include documentation of the information specified in paragraphs (d)(6)(iii)(A) through (d)(6)(iii)(D) of this section.

(A) The candidate superior performing pump seal designs or technologies to be evaluated, the stages for evaluating the identified candidate pump designs or pump seal technologies, including the time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and (D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial pump seal technologies or pumps.

(iv) The performance trials shall initially be conducted, at least, for a 6-month period beginning not later than 18 months after the start of the quality improvement program. No later than 24 months after the start of the quality improvement program, the owner or operator shall have identified pump seal technologies or pump designs that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit or affected facility. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (d)(6)(vi) of this section. The initial list of superior emission performance pump designs or pump seal technologies shall be amended in the future, as appropriate, as additional information and experience are obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 employees shall be exempt from trial evaluations of pump seals or pump designs. Plant sites exempt from the trial evaluations of pumps shall begin the pump seal or pump replacement program at the start of the fourth year of the quality improvement program.

(vi) An owner or operator who has conducted performance trials on all alternative superior emission performance technologies suitable for the required applications in the process unit or affected facility may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible alternative superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) *Quality assurance program.* Each owner or operator shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit or affected facility. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (d)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (d)(6) of this section, and the operating conditions in the process unit or affected facility. The quality assurance program shall be updated each year as long as the process unit or affected facility has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

(i) The quality assurance program shall meet the requirements specified in paragraphs (d)(7)(i)(A) through (d)(7)(i)(D) of this section.

(A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction,

previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal;

(C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the plant site or process unit or affected facility, or by a designated representative; and

(D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate so that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees; and no later than the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees.

(8) *Pump or pump seal replacement.* Three years after the start of the quality improvement program for plant sites with 400 or more valves or 100 or more employees and at the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees, the owner or operator shall replace, as described in paragraphs (d)(8)(i) and (d)(8)(ii) of this section, the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance that when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit, affected facility, or plant site. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.

(i) Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The

calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement shall continue until all pumps subject to the requirements of § 63.1026 are pumps determined to be superior performance technology.

(ii) The owner or operator may delay replacement of pump seals or pumps with superior technology until the next planned process unit or affected facility shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.

(iii) The pumps shall be maintained as specified in the quality assurance program.

(e) *QIP recordkeeping.* In addition to the records required by paragraph (d)(2) of this section, the owner or operator shall maintain records for the period of the quality improvement program for the process unit or affected facility as specified in paragraphs (e)(1) through (e)(6) of this section.

(1) When using a pump quality improvement program as specified in this section, record the information specified in paragraphs (e)(1)(i) through (e)(1)(iii) of this section.

(i) The rolling average percent leaking pumps.

(ii) Documentation of all inspections conducted under the requirements of paragraph (d)(4) of this section, and any recommendations for design or specification changes to reduce leak frequency.

(iii) The beginning and ending dates while meeting the requirements of paragraph (d) of this section.

(2) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.

(3) Records of all analyses required in paragraph (d) of this section. The records will include the information specified in paragraphs (e)(3)(i) through (e)(3)(iv) of this section.

(i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.

(ii) The reasons for rejecting specific candidate superior emission performing pump technology from performance trials.

(iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under paragraph (d)(6)(iii) of this section.

(iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.

(4) All records documenting the quality assurance program for pumps as specified in paragraph (d)(7) of this section, including records indicating that all pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance.

(5) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in paragraph (d)(8) of this section.

(6) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

**§ 63.1036 Alternative means of emission limitation: Batch processes.**

(a) *General requirement.* As an alternative to complying with the requirements of §§ 63.1025 through 63.1033 and § 63.1035, an owner or operator of a batch process that operates in regulated material service during the calendar year may comply with one of the standards specified in paragraphs (b) and (c) of this section, or the owner or operator may petition for approval of an alternative standard under the provisions of § 63.1021(b). The alternative standards of this section provide the options of pressure testing or monitoring the equipment for leaks. The owner or operator may switch among the alternatives provided the change is documented as specified in paragraph (b)(7) of this section.

(b) *Pressure testing of the batch equipment.* The following requirements shall be met if an owner or operator elects to use pressure testing of batch product-process equipment to demonstrate compliance with this subpart.

(1) *Reconfiguration.* Each time equipment is reconfigured for production of a different product or intermediate, the batch product-process equipment train shall be pressure-tested for leaks before regulated material is first fed to the equipment and the equipment is placed in regulated material service.

(i) When the batch product-process equipment train is reconfigured to produce a different product, pressure testing is required only for the new or disturbed equipment.

(ii) Each batch product process that operates in regulated material service during a calendar year shall be pressure-tested at least once during that calendar year.

(iii) Pressure testing is not required for routine seal breaks, such as changing hoses or filters, that are not part of the reconfiguration to produce a different product or intermediate.

(2) *Testing procedures.* The batch product process equipment shall be tested either using the procedures specified in paragraph (b)(5) of this section for pressure vacuum loss or with a liquid using the procedures specified in paragraph (b)(6) of this section.

(3) *Leak detection.* (i) For pressure or vacuum tests using a gas, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 pound per square inch gauge) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss.

(ii) For pressure tests using a liquid, a leak is detected if there are indications of liquids dripping or if there is other evidence of fluid loss.

(4) *Leak repair.* (i) If a leak is detected, it shall be repaired and the batch product-process equipment shall be retested before start-up of the process.

(ii) If a batch product-process fails the retest or the second of two consecutive pressure tests, it shall be repaired as soon as practical, but not later than 30 calendar days after the second pressure test except as specified in paragraph (e) of this section.

(5) *Gas pressure test procedure for pressure or vacuum loss.* The procedures specified in paragraphs (b)(5)(i) through (b)(5)(v) of this section shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of paragraph (b)(3)(i) of this section.

(i) The batch product-process equipment train shall be pressurized with a gas to a pressure less than the set pressure of any safety relief devices or valves or to a pressure slightly above the operating pressure of the equipment, or alternatively the equipment shall be placed under a vacuum.

(ii) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.

(iii) The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop or of pressure rise was exceeded. The pressure in the batch product-process equipment shall be measured after the gas or vacuum source is shut off and at the end of the test period. The rate of change in pressure in the batch product-process equipment shall be calculated using the following equation:

$$\Delta(P/t) = \left( |P_f - P_i| \right) / (t_f - t_i) \quad [\text{Eq. 5}]$$

Where:

$\Delta (P/t)$  = Change in pressure, pounds per square inch gauge per hour.

$P_f$  = Final pressure, pounds per square inch gauge.

$P_i$  = Initial pressure, pounds per square inch gauge.

$t_f - t_i$  = Elapsed time, hours.

(iv) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) that has a precision of  $\pm 2.5$  millimeter mercury (0.10 inch of mercury) in the range of test pressure and is capable of measuring pressures up to the relief set pressure of the pressure relief device. If such a pressure measurement device is not reasonably available, the owner or operator shall use a pressure measurement device with a precision of at least  $\pm 10$  percent of the test pressure of the equipment and shall extend the duration of the test for the time necessary to detect a pressure loss or rise that equals a rate of 1 pound per square inch gauge per hour (7 kilopascals per hour).

(v) An alternative procedure may be used for leak testing the equipment if the owner or operator demonstrates the alternative procedure is capable of detecting a pressure loss or rise.

(6) *Pressure test procedure using test liquid.* The procedures specified in paragraphs (b)(6)(i) through (b)(g)(iv) of this section shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of paragraph (b)(3)(ii) of this section.

(i) The batch product-process equipment train, or section of the equipment train, shall be filled with the test liquid (e.g., water, alcohol) until normal operating pressure is obtained. Once the equipment is filled, the liquid source shall be shut off.

(ii) The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that the test is a failure.

(iii) Each seal in the equipment being tested shall be inspected for indications of liquid dripping or other indications of fluid loss. If there are any indications of liquids dripping or of fluid loss, a leak is detected.

(iv) An alternative procedure may be used for leak testing the equipment, if the owner or operator demonstrates the alternative procedure is capable of detecting losses of fluid.

(7) *Pressure testing recordkeeping.* The owner or operator of a batch product process who elects to pressure test the batch product process equipment train to demonstrate compliance with this subpart shall

maintain records of the information specified in paragraphs (b)(7)(i) through (b)(7)(v) of this section.

(i) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.

(ii) Physical tagging of the equipment to identify that it is in regulated material service and subject to the provisions of this subpart is not required. Equipment in a batch product process subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(iii) The dates of each pressure test required in paragraph (b) of this section, the test pressure, and the pressure drop observed during the test.

(iv) Records of any visible, audible, or olfactory evidence of fluid loss.

(v) When a batch product process equipment train does not pass two consecutive pressure tests, the information specified in paragraphs (b)(7)(v)(A) through (b)(7)(v)(E) of this section shall be recorded in a log and kept for 2 years:

(A) The date of each pressure test and the date of each leak repair attempt.

(B) Repair methods applied in each attempt to repair the leak.

(C) The reason for the delay of repair.

(D) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment; and

(E) The date of successful repair.

(c) *Equipment monitoring.* The following requirements shall be met if an owner or operator elects to monitor the equipment in a batch process to detect leaks by the method specified in § 63.1023(b) to demonstrate compliance with this subpart.

(1) The owner or operator shall comply with the requirements of §§ 63.1025 through 63.1035 as modified by paragraphs (c)(2) through (c)(4) of this section.

(2) The equipment shall be monitored for leaks by the method specified in § 63.1023(b) when the equipment is in regulated material service or is in use with any other detectable material.

(3) The equipment shall be monitored for leaks as specified in paragraphs (c)(3)(i) through (c)(3)(iv) of this section.

(i) Each time the equipment is reconfigured for the production of a new product, the reconfigured equipment shall be monitored for leaks within 30 days of start-up of the process. This initial monitoring of reconfigured equipment shall not be included in

determining percent leaking equipment in the process unit or affected facility.

(ii) Connectors shall be monitored in accordance with the requirements in § 63.1027.

(iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1. The operating time shall be determined as the proportion of the year the batch product-process that is subject to the provisions of this subpart is operating.

(iv) The monitoring frequencies specified in paragraph (c)(3)(iii) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor anytime during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. For example, if the equipment is not operating during the scheduled monitoring period, the monitoring can be done during the next period when the process is operating.

(4) If a leak is detected, it shall be repaired as soon as practical but not later than 15 calendar days after it is detected, except as provided in paragraph (e) of this section.

(d) *Added equipment recordkeeping.*

(1) For batch product-process units or affected facilities that the owner or operator elects to monitor as provided under paragraph (c) of this section, the owner or operator shall prepare a list of equipment added to batch product process units or affected facilities since the last monitoring period required in paragraphs (c)(3)(ii) and (3)(iii) of this section.

(2) Maintain records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit or affected facility. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in paragraph (c)(3)(iii) of this section.

(3) Record and keep pursuant to the referencing subpart and this subpart, the date and results of the monitoring required in paragraph (c)(3)(i) of this section for equipment added to a batch product-process unit or affected facility since the last monitoring period required in paragraphs (c)(3)(ii) and (c)(3)(iii) of this section. If no leaking equipment is found during this monitoring, the owner or operator shall



record that the inspection was performed. Records of the actual monitoring results are not required.

(e) *Delay of repair.* Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the conditions specified in paragraphs (e)(1) and (e)(2) of this section are met.

(1) Equipment supplies have been depleted and supplies had been sufficiently stocked before the supplies were depleted.

(2) The repair is made no later than 10 calendar days after delivery of the replacement equipment.

(f) *Periodic report contents.* For owners or operators electing to meet the requirements of paragraph (b) of this section, the Periodic Report to be filed pursuant to § 63.1039(b) shall include the information listed in paragraphs (f)(1) through (f)(4) of this section for each process unit.

(1) Batch product process equipment train identification;

(2) The number of pressure tests conducted;

(3) The number of pressure tests where the equipment train failed the pressure test; and

(4) The facts that explain any delay of repairs.

**§ 63.1037 Alternative means of emission limitation: Enclosed-vented process units or affected facilities.**

(a) *Use of closed vent system and control device.* Process units or affected facilities enclosed in such a manner that all emissions from equipment leaks are vented through a closed vent system to a control device meeting the requirements of either § 63.1034 or § 63.1021(b) are exempt from the requirements of §§ 63.1025 through 63.1035. The enclosure shall be maintained under a negative pressure at all times while the process unit or affected facility is in operation to ensure that all emissions are routed to a control device.

(b) *Recordkeeping.* Owners and operators choosing to comply with the requirements of this section shall maintain the records specified in paragraphs (b)(1) through (b)(3) of this section.

(1) Identification of the process unit(s) or affected facilities and the regulated materials they handle.

(2) A schematic of the process unit or affected facility, enclosure, and closed vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

**§ 63.1038 Recordkeeping requirements.**

(a) *Recordkeeping system.* An owner or operator of more than one regulated source subject to the provisions of this subpart may comply with the recordkeeping requirements for these regulated sources in one recordkeeping system. The recordkeeping system shall identify each record by regulated source and the type of program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. The records required by this subpart are summarized in paragraphs (b) and (c) of this section.

(b) *General equipment leak records.* (1) As specified in § 63.1022(a) through (c), the owner or operator shall keep general and specific equipment identification if the equipment is not physically tagged and the owner or operator is electing to identify the equipment subject to this subpart through written documentation such as a log or other designation.

(2) The owner or operator shall keep a written plan as specified in § 63.1022(c)(4) for any equipment that is designated as unsafe- or difficult-to-monitor.

(3) The owner or operator shall maintain a record of the identity and an explanation as specified in § 63.1022(d)(2) for any equipment that is designated as unsafe-to-repair.

(4) As specified in § 63.1022(e), the owner or operator shall maintain the identity of compressors operating with an instrument reading of less than 500 parts per million.

(5) The owner or operator shall keep records associated with the determination that equipment is in heavy liquid service as specified in § 63.1022(f).

(6) The owner or operator shall keep records for leaking equipment as specified in § 63.1023(e)(2).

(7) The owner or operator shall keep records for leak repair as specified in § 63.1024(f) and records for delay of repair as specified in § 63.1024(d).

(c) *Specific equipment leak records.*

(1) For valves, the owner or operator shall maintain the records specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(i) The monitoring schedule for each process unit as specified in § 63.1025(b)(3)(i).

(ii) The valve subgrouping records specified in § 63.1025(b)(4)(iv), if applicable.

(2) For pumps, the owner or operator shall maintain the records specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section.

(i) Documentation of pump visual inspections as specified in § 63.1026(b)(4).

(ii) Documentation of dual mechanical seal pump visual inspections as specified in § 63.1026(e)(1)(v).

(iii) For the criteria as to the presence and frequency of drips for dual mechanical seal pumps, records of the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1026(e)(1)(i).

(3) For connectors, the owner or operator shall maintain the monitoring schedule for each process unit as specified in § 63.1027(b)(3).

(4) For the criteria as to the presence and frequency of drips for agitators, the owner or operator shall keep records of the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1028(e)(1)(vi).

(5) For pressure relief devices in gas and vapor or light liquid service, the owner or operator shall keep records of the dates and results of monitoring following a pressure release, as specified in § 63.1030(c)(3).

(6) For compressors, the owner or operator shall maintain the records specified in paragraphs (c)(6)(i) and (c)(6)(ii) of this section.

(i) For criteria as to failure of the seal system and/or the barrier fluid system, record the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1031(d)(2).

(ii) For compressors operating under the alternative compressor standard, record the dates and results of each compliance test as specified in § 63.1031(f)(2).

(7) For a pump QIP program, the owner or operator shall maintain the records specified in paragraphs (c)(7)(i) through (c)(7)(v) of this section.

(i) Individual pump records as specified in § 63.1035(d)(2).

(ii) Trial evaluation program documentation as specified in § 63.1035(d)(6)(iii).

(iii) Engineering evaluation documenting the basis for judgment that superior emission performance technology is not applicable as specified in § 63.1035(d)(6)(vi).

(iv) Quality assurance program documentation as specified in § 63.1035(d)(7).

(v) QIP records as specified in § 63.1035(e).

(8) For process units complying with the batch process unit alternative, the owner or operator shall maintain the records specified in paragraphs (c)(8)(i) and (c)(8)(ii) of this section.

- (i) Pressure test records as specified in § 63.1036(b)(7).
- (ii) Records for equipment added to the process unit as specified in § 63.1036(d).
- (9) For process units complying with the enclosed-vented process unit alternative, the owner or operator shall maintain the records for enclosed-vented process units as specified in § 63.1037(b).

**§ 63.1039 Reporting requirements.**

(a) *Initial compliance status report.* Each owner or operator shall submit an initial compliance status report according to the procedures in the referencing subpart. The notification shall include the information listed in paragraphs (a)(1) through (a)(3) of this section, as applicable.

(1) The notification shall provide the information listed in paragraphs (a)(1)(i) through (a)(1)(iv) of this section for each process unit or affected facility subject to the requirements of this subpart.

(i) Process unit or affected facility identification.

(ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.

(iii) Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

(iv) Planned schedule for requirements in §§ 63.1025 and 63.1026.

(2) The notification shall provide the information listed in paragraphs (a)(2)(i) and (a)(2)(ii) of this section for each process unit or affected facility subject to the requirements of § 63.1036(b).

(i) Batch products or product codes subject to the provisions of this subpart, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this subpart.

(3) The notification shall provide the information listed in paragraphs (a)(3)(i) and (a)(3)(ii) of this section for each process unit or affected facility subject to the requirements in § 63.1037.

(i) Process unit or affected facility identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of subpart SS of this part.

(b) *Periodic reports.* The owner or operator shall report the information specified in paragraphs (b)(1) through (b)(6) of this section, as applicable, in the Periodic Report specified in the referencing subpart.

(1) For the equipment specified in paragraphs (b)(1)(i) through (b)(1)(v) of this section, report in a summary format by equipment type, the number of components for which leaks were detected and for valves, pumps and connectors show the percent leakers, and the total number of components monitored. Also include the number of leaking components that were not repaired as required by § 63.1024, and for valves and connectors, identify the number of components that are determined by § 63.1025(c)(3) to be nonrepairable.

(i) Valves in gas and vapor service and in light liquid service pursuant to § 63.1025 (b) and (c).

(ii) Pumps in light liquid service pursuant to § 63.1026 (b) and (c).

(iii) Connectors in gas and vapor service and in light liquid service pursuant to § 63.1027 (b) and (c).

(iv) Agitators in gas and vapor service and in light liquid service pursuant to § 63.1028(b).

(v) Compressors pursuant to § 63.1031.

(2) Where any delay of repair is utilized pursuant to § 63.1024(d), report that delay of repair has occurred and report the number of instances of delay of repair.

(3) If applicable, report the valve subgrouping information specified in § 63.1025(b)(4)(iv).

(4) For pressure relief devices in gas and vapor service pursuant to § 63.1030(b) and for compressors pursuant to § 63.1031(f) that are to be operated at a leak detection instrument reading of less than 500 parts per million, report the results of all monitoring to show compliance conducted within the semiannual reporting period.

(5) Report, if applicable, the initiation of a monthly monitoring program for valves pursuant to § 63.1025(b)(3)(i).

(6) Report, if applicable, the initiation of a quality improvement program for pumps pursuant to § 63.1035.

(7) Where the alternative means of emissions limitation for batch processes is utilized, report the information listed in § 63.1036(f).

(8) Report the information listed in paragraph (a) of this section for the Initial Compliance Status Report for process units or affected facilities with later compliance dates. Report any revisions to items reported in an earlier Initial Compliance Status Report if the method of compliance has changed since the last report.

TABLE 1.—BATCH PROCESSES MONITORING FREQUENCY FOR EQUIPMENT OTHER THAN CONNECTORS

Operating time (% of year)	Equivalent continuous process monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25% .....	Quarterly .....	Annually .....	Annually.
25 to <50% .....	Quarterly .....	Semiannually .....	Annually.
50 to <75% .....	Bimonthly .....	Three times .....	Semiannually.
75 to 100% .....	Monthly .....	Quarterly .....	Semiannually.

5. Part 63 is amended by adding subpart WW as follows:

**Subpart WW—National Emission Standards for Storage Vessels (Tanks)—Control Level 2**

Sec.

- 63.1060 Applicability.
- 63.1061 Definitions.
- 63.1062 Storage vessel control requirements..
- 63.1063 Floating roof requirements.

- 63.1064 Pressurized storage vessel requirements.
- 63.1065 Enclosure requirements.
- 63.1066 Alternative means of emission limitation.
- 63.1067 Procedure for determining no detectable emissions.
- 63.1068 Recordkeeping requirements.
- 63.1069 Reporting requirements.

**§ 63.1060 Applicability.**

(a) The provisions of this subpart apply to the control of air emissions

from storage vessels for which another subpart references the use of this subpart for such air emission control. These air emission standards for storage vessels are placed here for administrative convenience and only apply to those owners and operators of facilities subject to a referencing subpart. The provisions of 40 CFR part 63, subpart A (General Provisions) do not apply to this subpart except as noted in the referencing subpart.

(b) If a physical process change is made that causes a storage vessel to fall outside the criteria in the referencing subpart that required the storage vessel to control emissions of regulated material, the owner or operator may elect to comply with the provisions for the storage vessels not subject to control contained in the referencing subpart instead of the provisions of this subpart.

#### § 63.1061 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section.

*Capacity* means the volume of liquid that is capable of being stored in a vessel, based on the vessel's diameter and external shell height.

*Deck cover* means a device which covers an opening in a floating roof deck. There is a gasket between the cover and the deck. Some deck covers move horizontally with respect to the deck (i.e., a sliding cover).

*Empty or emptying* means the removal of some or all of the stored liquid from a storage vessel. Storage vessels where stored liquid is left on the walls, as bottom clingage, or in pools due to bottom irregularities are considered empty. Lowering of the stored liquid level, such that the floating roof is resting on its legs, as necessitated by normal vessel operation (for example, to minimize contamination when changing stored material or when transferring material out of the vessel for shipment) is not considered emptying.

*External floating roof or EFR* means a floating roof located in a storage vessel without a fixed roof.

*Fill or filling* means the introduction of regulated material into a storage vessel, but not necessarily to complete capacity.

*Fixed roof* means a roof that is mounted (i.e., permanently affixed) on a storage vessel that does not move with fluctuations in stored liquid level.

*Flexible fabric sleeve seal* means a seal made of an elastomeric fabric (or other material) which covers an opening in a floating roof deck, and which allows the penetration of a pole, such as a fixed roof support column or a guidepole. The seal is attached to the rim of the deck opening and extends to the outer surface of the pole. The seal is draped (but does not contact the stored liquid) to allow the horizontal movement of the deck relative to the pole.

*Floating roof* means a roof that floats on the surface of the liquid in a storage vessel. A floating roof substantially covers the stored liquid surface (but is not necessarily in contact with the entire surface), and is comprised of a

deck, a rim seal, and miscellaneous deck fittings.

*Initial fill or initial filling* means the first introduction of regulated material into a storage vessel, or the introduction of regulated material into a storage vessel that has been out of (regulated-material) service for a year or longer.

*Internal floating roof or IFR* means a floating roof located in a storage vessel with a fixed roof. For the purposes of this subpart, an external floating roof located in a storage vessel to which a fixed roof has been added is considered to be an internal floating roof.

*Liquid-mounted seal* means a resilient or liquid-filled rim seal designed to contact the stored liquid.

*Mechanical shoe seal or metallic shoe seal* means a rim seal consisting of a band of metal (or other suitable material) as the sliding contact with the wall of the storage vessel, and a fabric seal to close the annular space between the band and the rim of the floating roof deck. The band is typically formed as a series of sheets (shoes) that are overlapped or joined together to form a ring. The lower end of the band extends into the stored liquid.

*Pole float* means a float located inside a guidepole that floats on the surface of the stored liquid. The rim of the float has a wiper or seal that extends to the inner surface of the pole, and that is at or above the height of the deck cover.

*Pole sleeve* means a device which extends from the opening in a floating roof deck or deck cover to the outer surface of a pole. The sleeve extends into the stored liquid.

*Pole wiper* means a seal that extends from the rim of the opening in a floating roof deck cover to the outer surface of a pole.

*Referencing subpart* means the subpart that refers an owner or operator to this subpart.

*Regulated material* means liquids that are regulated by a referencing subpart.

*Rim seal* means a device attached to the rim of a floating roof deck that spans the annular space between the deck and the wall of the storage vessel. When a floating roof has only one such device, it is a primary seal; when there are two seals (one mounted above the other), the lower seal is the primary seal and the upper seal is the secondary seal.

*Slotted guidepole* means a guidepole or gaugepole that has slots or holes through the wall of the pole. The slots or holes allow the stored liquid to flow into the pole at all floating roof heights.

*Storage vessel or Tank* means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural

support and is designed to hold an accumulation of liquids or other materials.

*Vapor-mounted seal* means a rim seal designed not to be in contact with the stored liquid. Vapor-mounted seals may include, but are not limited to, resilient seals and flexible wiper seals.

#### § 63.1062 Storage vessel control requirements.

(a) For each storage vessel to which this subpart applies, the owner or operator shall comply with one of the requirements listed in paragraphs (a)(1) through (a)(8) of this section.

(1) Operate and maintain an IFR.

(2) Operate and maintain an EFR.

(3) *Closed vent system and flare.*

Operate and maintain a closed vent system and flare as specified in subpart SS of this part. Periods of planned routine maintenance of the flare during which the flare does not meet the specifications of subpart SS of this part shall not exceed 72 hours per year.

(4) *Closed vent system and control device.* Operate and maintain a closed vent system and control device as specified in paragraphs (a)(4)(i) and (a)(4)(ii) of this section and subpart SS of this part.

(i) The control device shall be designed and operated to reduce inlet emissions of regulated material.

(ii) Periods of planned routine maintenance of the control device shall not exceed 72 hours per year. The owner or operator shall report periods of planned routine maintenance as specified in subpart SS of this part.

(5) *Route to a process or fuel gas system.* Route the emissions to a process or fuel gas system as provided in subpart SS of this part.

(6) *Equivalent requirements.* Comply with an equivalent to the requirements in paragraph (a)(1) or (a)(2) of this section, as provided in § 63.1066.

(7) *Pressurized storage vessel.* Operate a pressurized storage vessel in accordance with the requirements specified in § 63.1064; or

(8) *Enclosure.* Operate and maintain the storage vessel inside an enclosure that is vented through a closed vent system to an enclosed combustion control device in accordance with the requirements specified in § 63.1065.

#### § 63.1063 Floating roof requirements.

The owner or operator who elects to use a floating roof to comply with the requirements of § 63.1062 shall comply with the requirements in paragraphs (a) through (e) of this section.

(a) *Design requirements.*—(1) *Rim seals.*—

(i) *Internal floating roof.* An IFR shall be equipped with one of the devices

listed in paragraphs (a)(1)(i)(A) through (a)(1)(i)(C) of this section.

(A) A liquid-mounted seal.

(B) A mechanical shoe seal.

(C) Two seals mounted one above the other. The lower seal may be vapor-mounted.

(D) If the IFR is equipped with a vapor-mounted seal as of the proposal date for a referencing subpart, paragraphs (a)(1)(i)(A) through (a)(1)(i)(C) of this section do not apply until the next time the storage vessel is emptied and degassed, or 10 years after promulgation of the referencing subpart, whichever occurs first.

(ii) *External floating roof.* An EFR shall be equipped with one of the devices listed in paragraphs (a)(1)(ii)(A) and (a)(1)(ii)(B) of this section.

(A) A liquid-mounted seal and a secondary seal.

(B) A mechanical shoe seal and a secondary seal. The upper end of the shoe(s) shall extend a minimum of 61 centimeters (24 inches) above the stored liquid surface.

(C) If the EFR is equipped with a liquid-mounted seal or mechanical shoe seal, or a vapor-mounted seal and secondary seal, as of the proposal date for a referencing subpart, the seal options specified in paragraphs (a)(1)(ii)(A) and (a)(1)(ii)(B) of this section do not apply until the next time the storage vessel is emptied and degassed, or 10 years after the promulgation date of the referencing subpart, whichever occur first.

(2) *Deck Fittings.* Openings through the deck of the floating roof shall be equipped as described in paragraphs (a)(2)(i) through (a)(2)(viii) of this section.

(i) Each opening except those for automatic bleeder vents (vacuum breaker vents) and rim space vents shall have its lower edge below the surface of the stored liquid.

(ii) Each opening except those for automatic bleeder vents (vacuum breaker vents), rim space vents, leg sleeves, fixed roof support columns, sample wells, guidepoles, and deck drains shall be equipped with a deck cover.

(iii) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be equipped with a gasket.

(iv) Each opening for a fixed roof support column shall be equipped with a flexible fabric sleeve seal or a deck cover.

(v) Each opening for a sample well or deck drain (that empties into the stored liquid) shall be equipped with a slit fabric seal or similar device that covers at least 90 percent of the opening.

(vi) Each cover on access hatches and gauged float wells shall be designed to be bolted or fastened when closed.

(vii) Each opening for an unslotted guidepole shall be equipped with the devices specified in paragraphs (a)(2)(vii)(A) and (a)(2)(vii)(B) of this section.

(A) A gasketed cap on the top of the guidepole which is closed at all times except when gauging the liquid level or taking liquid samples.

(B) The well shall be equipped with one of the devices specified in paragraphs (a)(2)(vii)(B)(1) and (a)(2)(vii)(B)(2) of this section.

(1) A flexible fabric sleeve seal.

(2) A deck cover with a pole wiper.

(viii) Each opening for a slotted guidepole shall be equipped with one of the devices specified in paragraphs (a)(2)(viii)(A) through (a)(2)(viii)(C) of this section.

(A) A flexible fabric sleeve seal and a pole float.

(B) A deck cover with a pole wiper, and a pole float.

(C) A deck cover with a pole wiper, and a pole sleeve.

(ix) If the floating roof does not meet the requirements listed in paragraphs (a)(2)(i) through (a)(2)(vii) of this section as of the proposal date of the referencing subpart, these requirements do not apply until the next time the vessel is emptied and degassed, or 10 years after the promulgation date of the referencing subpart, whichever occurs first.

(b) *Operating requirements.* (1) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports.

(2) When the floating roof is supported by its leg supports, the process of filling or emptying the vessel shall be continuous and shall be accomplished as soon as practical, and the owner or operator shall maintain the record specified in § 63.1068(c).

(3) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access.

(4) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturers design.

(c) *Inspection frequency requirements—(1) Internal floating roofs.* Internal floating roofs shall be inspected as specified in paragraph (d)(1) of this section before the initial filling of the storage vessel. Subsequent

inspections shall be performed as specified in paragraph (c)(1)(i) or (c)(1)(ii) of this section.

(i) Internal floating roofs shall be inspected as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section.

(A) At least once per year the IFR shall be inspected as specified in paragraph (d)(2) of this section.

(B) Each time the storage vessel is emptied and degassed, or every 10 years, whichever occurs first, the IFR shall be inspected as specified in paragraph (d)(1) of this section.

(ii) Internal floating roofs with two rim seals shall be inspected as specified in paragraph (c)(1)(ii)(A) or (c)(1)(ii)(E) of this section.

(A) The internal floating roof shall be inspected as specified in paragraph (c)(1)(i) of this section.

(B) The internal floating roof shall be inspected as specified in paragraph (d)(1) of this section each time the storage vessel is emptied or degassed, or every 5 years, whichever occurs first.

(2) *External floating roofs.* External floating roofs shall be inspected as specified in paragraphs (c)(2)(i) through (c)(2)(iv) of this section.

(i) Within 90 days after the initial filling of the storage vessel, and at least every 5 years thereafter, the primary rim seal shall be inspected as specified in paragraph (d)(3) of this section.

(ii) Within 90 days after the initial filling of the storage vessel, and at least once per year thereafter, the secondary seal shall be inspected as specified in paragraph (d)(3) of this section.

(iii) Each time the storage vessel is emptied and degassed, or every 10 years, whichever occurs first, the EFR shall be inspected as specified in paragraph (d)(1) of this section.

(iv) If the owner or operator determines that it is unsafe to perform the floating roof inspections specified in paragraphs (c)(2)(i) and (c)(2)(ii) of this section, the owner or operator shall comply with the requirements of paragraph (c)(2)(iv)(A) or (c)(2)(iv)(B) of this section.

(A) The inspections shall be performed no later than 30 days after the determination that the floating roof is unsafe.

(B) The storage vessel shall be removed from regulated material service no later than 75 days after the determination that the floating roof is unsafe.

(d) *Inspection procedure requirements.* Floating roof inspections shall be conducted as specified in paragraphs (d)(1) through (d)(3) of this section, as applicable. If a floating roof fails an inspection, the owner or

operator shall comply with the repair requirements of paragraph (e) of this section.

(1) Floating roof (IFR and EFR) inspections shall be conducted by visually inspecting the floating roof deck, deck fittings, and rim seals from within the storage vessel. The inspection may be performed entirely from the top side of the floating roof, as long as there is visual access to all deck components specified in paragraph (a) of this section. Any of the conditions described in paragraphs (d)(1)(i) through (d)(1)(v) of this section constitutes inspection failure.

(i) Regulated material on the floating roof.

(ii) Holes or tears in the primary or secondary seal (if one is present).

(iii) Floating roof deck, deck fittings, or rim seals that are not functioning as designed (as specified in paragraph (a) of this section).

(iv) Failure to comply with the operational requirements of paragraph (b) of this section.

(v) Gaps of more than 0.32 centimeters ( $\frac{1}{8}$  inch) between any deck fitting gasket (required by paragraph (a) of this section) and any surface that it is intended to seal.

(2) Tank-top inspections of IFR's shall be conducted by visually inspecting the floating roof deck, deck fittings, and rim seal through openings in the fixed roof. Any of the conditions described in paragraphs (d)(1)(i) through (d)(1)(iv) of this section constitutes inspection failure. Identification of holes or tears in the rim seal is required only for the seal that is visible from the top of the storage vessel.

(3) Seal gap inspections for EFR's shall determine the presence and size of gaps between the rim seals and the wall of the storage vessel by the procedures specified in paragraph (d)(3)(i) of this section. Any exceedance of the gap requirements specified in paragraphs (d)(3)(ii) and (d)(3)(iii) of this section constitutes inspection failure.

(i) Rim seals shall be measured for gaps at one or more levels while the EFR is floating, as specified in paragraphs (d)(3)(i)(A) through (d)(3)(i)(F) of this section.

(A) the inspector shall hold a 0.32 centimeter ( $\frac{1}{8}$  inch) diameter probe vertically against the inside of the storage vessel wall, just above the rim seal, and attempt to slide the probe down between the seal and the vessel wall. Each location where the probe passes freely (without forcing or binding against the seal) between the seal and the vessel wall constitutes a gap.

(B) The length of each gap shall be determined by inserting the probe into

the gap (vertically) and sliding the probe along the vessel wall in each direction as far as it will travel freely without binding between the seal and the vessel wall. The circumferential length along which the probe can move freely is the gap length.

(C) The maximum width of each gap shall be determined by inserting probes of various diameters between the seal and the vessel wall. The smallest probe diameter should be 0.32 centimeter, and larger probes should have diameters in increments of 0.32 centimeter. The diameter of the largest probe that can be inserted freely anywhere along the length of the gap is the maximum gap width.

(D) The average width of each gap shall be determined by averaging the minimum gap width (0.32 centimeter) and the maximum gap width.

(E) The area of a gap is the product of the gap length and average gap width.

(F) The ratio of accumulated area of rim seal gaps to storage vessel diameter shall be determined by adding the area of each gap, and dividing the sum by the nominal diameter of the storage vessel. This ratio shall be determined separately for primary and secondary rim seals.

(ii) The ratio of seal gap area to vessel diameter for the primary seal shall not exceed 212 square centimeters per meter of vessel diameter (10 square inches per foot of vessel diameter), and the maximum gap width shall not exceed 3.81 centimeters (1.5 inches).

(iii) The ratio of seal gap area to vessel diameter for the secondary seal shall not exceed 21.2 square centimeters per meter (1 square inch per foot), and the maximum gap width shall not exceed 1.27 centimeters (0.5 inches).

(e) *Repair requirements.* Conditions causing inspection failures under paragraph (d) of this section shall be repaired as specified in paragraph (e)(1) or (e)(2) of this section.

(1) If the inspection is performed while the storage vessel is not storing regulated material, or is out of service and degassed, repairs shall be completed before the refilling of the storage vessel with regulated material.

(2) If the inspection is performed while the storage vessel is storing regulated material, repairs shall be completed or the vessel removed from regulated material service within 75 days.

#### **§ 63.1064 Pressurized storage vessel requirements.**

(a) The owner or operator who elects to control storage vessel air emissions by using a pressurized storage vessel shall meet the following requirements.

(1) The storage vessel shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the storage vessel during filling of the storage vessel to its design capacity.

(2) All storage vessel openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in § 63.1067.

(3) Whenever a regulated material is in the storage vessel, the storage vessel shall be operated as a closed system that does not vent to the atmosphere except in the event that opening of a safety device, as defined in § 63.681, is required to avoid an unsafe condition.

(b) [Reserved]

#### **§ 63.1065 Enclosure requirements.**

(a) The owner or operator who elects to control air emissions by using an enclosure vented through a closed vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (a)(1) and (a)(2) of this section.

(1) The storage vessel shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in subpart SS of this part.

(b) [Reserved]

#### **§ 63.1066 Alternative means of emission limitation.**

(a) An alternate control device may be substituted for a control device specified in § 63.1063 if the alternate device has an emission factor less than or equal to the emission factor for the device specified in § 63.1063. Requests for the use of alternate devices shall be

made as specified in § 63.1069(b)(3). Emission factors for the devices specified in § 63.1063 are published in EPA Report No. AP-42, *Compilation of Air Pollutant Emission Factors*.

(b) Tests to determine emission factors for an alternate device shall accurately simulate conditions under which the device will operate, such as wind, temperature, and barometric pressure. Test methods that can be used to perform the testing required in this paragraph include, but are not limited to, the methods listed in paragraphs (b)(1) through (b)(iii) of this section.

(i) American Petroleum Institute (API) *Manual of Petroleum Measurement Standards*, Chapter 19, Section 3, Part A, *Wind Tunnel Test Method for the Measurement of Deck-Fitting Loss Factors for External Floating-Roof Tanks*.

(ii) API *Manual of Petroleum Measurement Standards*, Chapter 19, Section 3, part B, *Air Concentration Test Method for the Measurement of Rim Seal Loss Factors for Floating-Roof Tanks*.

(iii) API *Manual of Petroleum Measurement Standards*, Chapter 19, Section 3, Part E, *Weight Loss Test Method for the Measurement of Deck-Fitting Loss Factors for Internal Floating-Roof Tanks*.

(c) An alternate combination of control devices may be substituted for any combination of rim seal and deck fitting control devices specified in § 63.1063 if the alternate combination emits no more than the combination specified in § 63.1063. The emissions from an alternate combination of control devices shall be determined using AP-42 or as specified in paragraph (b) of this section. The emissions from a combination of control devices specified in § 63.1063 shall be determined using AP-42. Requests for the use of alternate devices shall be made as specified in § 63.1069(b)(3).

**§ 63.1067 Procedure for determining no detectable emissions.**

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its

associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the unit contains a material having an organic HAP concentration representative of the range of concentrations for the regulated materials expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated material placed in the unit, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 parts per million by volume hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 parts per million by volume.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device presents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 parts per million by volumes. If the difference is less than 500 parts per million by volume, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) [Reserved]

**§ 63.1068 Recordkeeping requirements.**

The owner or operator shall keep records as specified in paragraphs (a) through (c) of this section for as long as regulated material is stored. Records required in paragraph (b) of this section shall be kept for at least 5 years. Records shall be readily accessible.

(a) *Vessel dimensions and capacity.* A record shall be kept of the dimensions of the storage vessel, an analysis of the capacity of the storage vessel, and an identification of the regulated material stored.

(b) *Inspection results.* Records of floating roof inspection results shall be kept as specified in paragraphs (b)(1) and (b)(2) of this section.

(1) If the floating roof passes inspection, a record shall be kept that includes the information specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section. If the floating roof fails inspection, a record shall be kept that includes the information specified in paragraphs (b)(1)(i) through (b)(1)(v) of this section.

(i) Identification of the storage vessel that was inspected.

(ii) The date of the inspection.

(iii) A description of all inspection failures.

(iv) A description of all repairs and the dates they were made.

(v) The date the storage vessel was removed from regulated material service, if applicable.

(2) A record shall be kept of EFR seal gap measurements, including the raw data obtained and any calculations performed.

(c) *Floating roof set on its legs.* The owner or operator shall maintain a record identifying the date when the floating roof was set on its legs and the date when the roof was refloated. The record shall also indicate whether this was a continuous operation.

**§ 63.1069 Reporting requirements.**

(a) *Notification of initial startup.* If the referencing subpart requires that a notification of initial startup be filed, then the content of the notification of initial startup shall include (at a minimum) the information specified in the referencing subpart and the information specified in paragraphs (a)(1) and (a)(2) of this section.

(1) The identification of each storage vessel, its capacity and the regulated material stored in the storage vessel.

(2) A statement of whether the owner or operator of the source can achieve compliance by the compliance date specified in referencing subpart.

(b) *Periodic reports.* Report the information specified in paragraphs (b)(1) through (b)(3) of this section, as

applicable, in the periodic report specified in the referencing subpart.

(1) *Notification of inspection.* To provide the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator at least 15 days before an inspection. If a delegated State or local agency is notified, the owner or operator is not required to notify the Administrator. A delegated State or local agency may waive the requirement for notification of inspections.

(2) *Inspection results.* Within 30 days of a failed inspection, the owner or operator shall submit a copy of the inspection record (required in § 63.1068).

(3) *Requests for alternate devices.* The owner or operator requesting the use of an alternate control device shall submit a written application including emissions test results and analysis demonstrating that the alternate device has an emission factor that is less than

or equal to the device specified in § 63.1063.

6. Part 63 is amended by adding subpart YY to read as follows:

**Subpart YY—National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards**

Sec.

- 63.1100 Applicability.
- 63.1101 Definitions.
- 63.1102 Compliance schedule.
- 63.1103 Source category-specific applicability, definitions, and requirements.
- 63.1104 Process vents from continuous unit operations: applicability determination procedures and methods.
- 63.1105 Process vents from batch unit operations: applicability determination procedures and methods.
- 63.1106 Wastewater treatment systems: applicability determination procedures and methods.
- 63.1107 Equipment leaks: applicability determination procedures and methods.

- 63.1108 Compliance with standards and operation and maintenance requirements.
- 63.1109 Recordkeeping requirements.
- 63.1110 Reporting requirements.
- 63.1111 Startup, shutdown, and malfunction.
- 63.1112 Extension of compliance, and performance test, monitoring, recordkeeping, and reporting waivers and alternatives.
- 63.1113 Procedures for approval of alternative means of emission limitation.

**§ 63.1100 Applicability**

(a) This subpart applies to source categories and affected sources specified in § 63.1103(a) through (d) of this subpart. The affected emission points, by source category, are summarized in table 1. This table also delineates the section and paragraph of the rule that directs an owner or operator of an affected source to source category-specific control, monitoring, recordkeeping, and reporting requirements.

TABLE 1 TO § 63.1100.—SOURCE CATEGORY MACT<sup>a</sup> APPLICABILITY

Source category	Storage vessels	Process vents	Transfer racks	Equipment leaks	Waste-water treatment system units	Other	Source category MACT requirements
1. Acetal Resins Production .....	Yes .....	Yes .....	No .....	Yes .....	Yes .....	No .....	§ 63.1103(a)
2. Acrylic and Modacrylic Fibers Production .....	Yes .....	Yes .....	No .....	Yes .....	Yes .....	Yes <sup>b</sup> .....	§ 63.1103(b)
3. Hydrogen Fluoride Production .....	Yes .....	Yes .....	Yes .....	Yes .....	No .....	Yes <sup>c</sup> .....	§ 63.1103(c)
4. Polycarbonates Production .....	Yes .....	Yes .....	No .....	Yes .....	Yes .....	No .....	§ 63.1103(d)

<sup>a</sup> Maximum achievable control technology.

<sup>b</sup> Fiber spinning lines using spinning solution or suspension containing acrylonitrile.

<sup>c</sup> Kilns used to react calcium fluoride with sulfuric acid.

(b) The provisions of subpart A of this part (General Provisions), §§ 63.1 through 63.5, and §§ 63.12 through 63.15 apply to owners or operators of affected sources subject to this subpart.

(c) The provisions of this subpart do not apply to research and development facilities, consistent with section 112(b)(7) of the Act.

(d) *Primary product determination and applicability.* The primary product of a process unit shall be determined according to the procedures specified in paragraphs (d)(1) and (d)(2). Paragraphs (d)(3) and (d)(4) of this section discuss compliance for those process units operated as flexible operation units, as specified in paragraph (d)(2) of this section.

(1) If a process unit only manufactures one product, then that product shall represent the primary product of the process unit.

(2) If a process unit is designed and operated as a flexible operation unit, the primary product shall be determined as specified in paragraphs (d)(2)(i) or

(d)(2)(ii) of this section based on the anticipated operations for the 5 years following the promulgation date for existing affected sources and for the first 5 years after initial startup for new affected sources.

(i) If the flexible operation unit will manufacture one product for the greatest operating time over the five year period, then that product shall represent the primary product of the flexible operation unit.

(ii) If the flexible operation unit will manufacture multiple products equally based on operating time, then the product with the greatest production on a mass basis over the five year period shall represent the primary product of the flexible operation unit.

(3) Once the primary product of a process unit has been determined to be a product produced by a source category subject to this subpart, the owner or operator of the affected source shall comply with the standards for the primary product production process unit.

(4) The determination of the primary product for a process unit, to include the determination of applicability of this subpart to process units that are designed and operated as flexible operation units, shall be reported in the Notification of Compliance Status Report required by § 63.1110 when the primary product is determined to be a product produced by a source category subject to requirements under this subpart. The Notification of Compliance Status shall include the information specified in either paragraph (d)(4)(i) or (d)(4)(ii) of this section. If the primary product is determined to be something other than a product produced by a source category subject to requirements under this subpart, the owner or operator shall retain information, data, and analyses used to document the basis for the determination that the primary product is not produced by a source category subject to requirements under this subpart.

(i) If the process unit manufactures only one product subject to requirements under this subpart, identification of that product.

(ii) If the process unit is designed and operated as a flexible operation unit, the information specified in paragraphs (d)(4)(ii)(A) and (d)(4)(ii)(B) of this section, as appropriate.

(A) Identification of the primary product.

(B) Information concerning operating time and/or production mass for each product that was used to make the determination of the primary product under paragraph (d)(2)(i) or (d)(2)(ii) of this section.

(iii) Demonstrate that the parameter monitoring levels established for the primary product are also appropriate for those periods when products other than the primary product are being produced. Material demonstrating this finding shall be submitted in the Notification of Compliance Status Report required by § 63.1110.

(e) *Storage vessel ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (e)(1) through (e)(8) of this section to determine to which process unit a storage vessel shall belong.

(1) If a storage vessel is already subject to another subpart of 40 CFR part 63 on the date of promulgation for an affected source, that storage vessel shall belong to the process unit subject to the other subpart.

(2) If a storage vessel is dedicated to a single process unit, the storage vessel shall belong to that process unit.

(3) If a storage vessel is shared among process units, then the storage vessel shall belong to that process unit located on the same plant site as the storage vessel that has the greatest input into or output from the storage vessel (i.e., the process unit has the predominant use of the storage vessel).

(4) If predominant use cannot be determined for a storage vessel that is shared among process units and if only one of those process units is subject to this subpart, the storage vessel shall belong to that process unit.

(5) If predominant use cannot be determined for a storage vessel that is shared among process units and if more than one of the process units are subject to standards under this subpart that have different primary products, then the owner or operator shall assign the storage vessel to any one of the process units sharing the storage vessel.

(6) If the predominant use of a storage vessel varies from year to year, then predominant use shall be determined based on the utilization that occurred during the year preceding the date of

promulgation of standards for an affected source under this subpart or based on the expected utilization for the 5 years following promulgation date of standards for an affected source under this subpart for existing affected sources, whichever is more representative of the expected operations for that storage vessel, and based on the expected utilization for the 5 years after initial startup for new affected sources. The determination of predominant use shall be reported in the Notification of Compliance Status Report required by § 63.1110. If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If the storage vessel begins receiving material from (or sending material to) another process unit; ceases to receive material from (or send material to) a process unit; or if the applicability of this subpart to a storage vessel has been determined according to the provisions of paragraphs (e)(1) through (e)(6) of this section and there is a significant change in the use of the storage vessel that could reasonably change the predominant use, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel.

(8) Where a storage vessel is located at a major source that includes one or more process units that place material into, or receive materials from the storage vessel, but the storage vessel is located in a tank farm, the applicability of this subpart shall be determined according to the provisions in paragraphs (e)(8)(i) through (e)(8)(iii) of this section.

(i) The storage vessel may only be assigned to a process unit that utilizes the storage vessel and does not have an intervening storage vessel for that product (or raw materials, as appropriate). With respect to any process unit, an intervening storage vessel means a storage vessel connected by hard-piping to the process unit and to the storage vessel in the tank farm so that product or raw material entering or leaving the process unit flows into (or from) the intervening storage vessel and does not flow directly into (or from) the storage vessel in the tank farm.

(ii) If there is only one process unit at a major source subject to the requirements of this subpart with respect to a storage vessel, the storage vessel shall be assigned to that process unit.

(iii) If there are two or more process units at the major source that meet the criteria of paragraph (e)(8)(i) of this section with respect to a storage vessel,

the storage vessel shall be assigned to one of those process units according to the provisions of paragraph (e)(6) of this section. The predominant use shall be determined among only those process units that meet the criteria of paragraph (e)(8)(i) of this section.

(f) *Recovery operation equipment ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (f)(1) through (f)(7) of this section to determine to which process unit recovery operation equipment shall belong.

(1) If recovery operation equipment is already subject to another subpart of 40 CFR part 63 on the date standards are promulgated for an affected source, that recovery operation equipment shall belong to the process unit subject to the other subpart.

(2) If recovery operation equipment is used exclusively by a single process unit, the recovery operation shall belong to that process unit.

(3) If recovery operation equipment is shared among process units, then the recovery operation equipment shall belong to that process unit located on the same plant site as the recovery operation equipment that has the greatest input into or output from the recovery operation equipment (i.e., that process unit has the predominant use of the recovery operation equipment).

(4) If predominant use cannot be determined for recovery operation equipment that is shared among process units and if one of those process units is a process unit subject to this subpart, the recovery operation equipment shall belong to the process unit subject to this subpart.

(5) If predominant use cannot be determined for recovery operation equipment that is shared among process units and if more than one of the process units are process units that have different primary products and that are subject to this subpart, then the owner or operator shall assign the recovery operation equipment to any one of those process units.

(6) If the predominant use of recovery operation equipment varies from year to year, then the predominant use shall be determined based on the utilization that occurred during the year preceding the promulgation date of standards for an affected source under this subpart or based on the expected utilization for the 5 years following the promulgation date for standards for an affected source under this subpart for existing affected sources, whichever is the more representative of the expected operations for the recovery operations equipment, and based on the expected utilization for the first 5 years after



initial startup for new affected sources. This determination shall be reported in the Notification of Compliance Status Report required by § 63.1110. If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If there is an unexpected change in the utilization of recovery operation equipment that could reasonably change the predominant use, the owner or operator shall redetermine to which process unit the recovery operation belongs by reperforming the procedures specified in paragraphs (f)(2) through (f)(6) of this section.

(g) *Overlap with other regulations.* (1) *Overlap of subpart YY with other regulations for storage vessels.* (i) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, a storage vessel that is part of an existing source that is subject to the provisions of 40 CFR part 63, subpart WW (National Emission Standards for Storage Vessels—Control Level 2) (if referenced under this subpart) under this subpart and the storage vessel provisions of 40 CFR part 63, subpart G (the hazardous organic national emission standards for hazardous air pollutants (the HON)) is in compliance with the storage vessel requirements of subpart WW of this part if it complies with the requirements of subpart WW or the storage vessel requirements of subpart G of this part.

(ii) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, a storage vessel that is part of an existing source that is subject to the provisions of 40 CFR part 63, subpart WW (National Emission Standards for Storage Vessels—Control Level 2) (if referenced under this subpart) under this subpart and the storage vessel provisions of 40 CFR part 60, subpart Ka or Kb is required only to comply with the storage vessel control requirements of subpart WW of this part.

(2) *Overlap of subpart YY with other regulations for process vents.* After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, a process vent that is part of an existing source that is subject to the requirements of 40 CFR part 63, subpart SS (National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or Process) under this subpart and the process vent requirements of 40 CFR part 63, subpart G (the HON) is in compliance with subpart SS if it complies with the provisions of subpart SS of this subpart or the process vent closed-vent system,

control device, recovery, and routing to a fuel gas system or process requirements of subpart G of this part.

(3) *Overlap of subpart YY with other regulations for transfer racks.* After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, a transfer rack that is part of an existing source that is subject to the provisions of 40 CFR part 63, subpart SS (National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or Process) under this subpart and the transfer rack requirements of 40 CFR part 63, subpart G (the HON) is in compliance with subpart SS of this part if it complies with the provisions of subpart SS of this part or the transfer rack closed-vent system, control device, recovery, and routing to a fuel gas system or process requirements of subpart G of this part.

(4) *Overlap of subpart YY with other regulations for equipment leaks.* (i) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, equipment that is part of an existing source that is subject to the equipment leak control requirements of 40 CFR part 63, subpart TT (National Emission Standards for Equipment Leaks—Control Level 1) under this subpart and 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V is required only to comply with subpart TT of this part.

(ii) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, equipment that is part of an existing source that is subject to the equipment leak control requirements of 40 CFR part 63, subpart UU (National Emission Standards for Equipment Leaks—Control Level 2) under this subpart and 40 CFR part 63, subpart H (the HON) is in compliance with the equipment leak requirements of this subpart if it complies with the equipment leak provisions of subpart UU or subpart H of this part.

(5) *Overlap of subpart YY with other regulations for wastewater treatment system units.* (i) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, wastewater streams that are subject to control requirements in the Hazardous Organic NESHAP (40 CFR part 63, subpart G) and this subpart is required to comply with both rules.

(ii) After the compliance dates specified in § 63.1102 for an affected source subject to this subpart, wastewater streams that are subject to control requirements in the Benzene Waste NESHAP (40 CFR part 61, subpart

FF) and this subpart is required to comply with both rules.

### § 63.1101 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section.

*Annual average concentration*, as used in the wastewater provisions, means the flow-weighted annual average concentration, as determined according to the procedures specified in § 63.1106.

*Annual average flow rate*, as used in the wastewater provisions, means the annual average flow rate, as determined according to the procedures specified in § 63.1106.

*Batch cycle* refers to manufacturing a product from start to finish in a batch unit operation.

*Batch emission episode* means a discrete venting episode that may be associated with a single unit operation. A unit operation may have more than one batch emission episode per batch cycle. For example, a displacement of vapor resulting from the charging of a vessel with HAP will result in a discrete emission episode. If the vessel is then heated, there may also be another discrete emission episode resulting from the expulsion of expanded vapor. Both emission episodes may occur during the same batch cycle in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process equipment, depending on process operations.

*Batch unit operation* means a unit operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of equipment after the batch cycle ceases and prior to beginning a new batch cycle. Mass, temperature, concentration and other properties of the process may vary with time. Addition of raw material and withdrawal of product do not simultaneously occur in a batch unit operation.

*Bottoms receiver* means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

*By compound* means by individual stream components, not carbon equivalents.

*Capacity* means the volume of liquid that is capable of being stored in a storage vessel, based on the vessel's diameter and internal shell height.

*Closed vent system* means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device. Closed vent system does

not include the vapor collection system that is part of any tank truck or railcar.

*Continuous parameter monitoring system* or *CPMS* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

*Continuous unit operation* means a unit operation where the inputs and outputs flow continuously. Continuous unit operations typically approach steady-state conditions. Continuous unit operations typically involve the simultaneous addition of raw material and withdrawal of the product.

*Control device* means any combustion device, recovery device, recapture device, or any combination of these devices used to comply with this subpart. Such equipment or devices include, but are not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents from continuous unit operations, recapture devices and combustion devices are considered control devices but recovery devices are not considered control devices. For process vents from batch unit operations, recapture devices, recovery devices, and combustion devices are considered control devices except for process condensers. Primary condensers on stream strippers or fuel gas systems are not considered control devices.

*Day* means a calendar day.

*Emission point* means an individual process vent, storage vessel, transfer rack, wastewater stream, kiln, fiber spinning line, equipment leak, or other point where a gaseous stream is released.

*Equipment*, means each of the following that is subject to control under this subpart: pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system; and any control device or system used to comply with this subpart.

*Equivalent method* means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

*Flexible operation unit* means a process unit that manufactures different chemical products periodically by alternating raw materials or operating conditions.

*Halogens and hydrogen halides* means hydrogen chloride (HCl),

chlorine (Cl<sub>2</sub>), hydrogen bromide (HBr), bromine (Br<sub>2</sub>), and hydrogen fluoride (HF).

*Initial start-up* means, for new sources, the first time the source begins production. For additions or changes not defined as a new source by this subpart, initial startup means the first time additional or changed equipment is put into operation. Initial startup does not include operation solely for testing equipment. Initial startup does not include subsequent startup (as defined in this section) of process units following malfunctions or process unit shutdowns. Except for equipment leaks, initial startup also does not include subsequent startups (as defined in this section) of process units following changes in product for flexible operation units or following recharging of equipment in batch unit operations.

*Low throughput transfer rack* means those transfer racks that transfer less than a total of 11.8 million liters per year of liquid containing regulated HAP.

*Maximum true vapor pressure* means the equilibrium partial pressure exerted by the total organic HAP's in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporation Loss From External Floating-Roof Tanks (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(2) As obtained from standard reference texts; or

(3) As determined by the American Society for Testing and Materials Method D2879-83 (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(4) Any other method approved by the Administrator.

*On-site* means, with respect to records required to be maintained by this subpart, a location within a plant site that encompasses the affected source. On-site includes, but is not limited to, the affected source to which the records pertain, or central files elsewhere at the plant site.

*Organic hazardous air pollutant* or *organic HAP* means any organic chemicals that are also HAP.

*Permitting authority* means one of the following:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661) and part 71 of this chapter.

*Plant site* means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

*Process condenser* means a condenser whose primary purpose is to recover material as an integral part of a process. The condenser must support a vapor-to-liquid phase change for periods of source equipment operation that are above the boiling or bubble point of substance(s). Examples of process condensers include distillation condensers, reflux condensers, process condensers in line prior to the vacuum source, and process condensers used in stripping or flashing operations.

*Process unit* means the equipment assembled and connected by pipes or ducts to process raw and/or intermediate materials and to manufacture an intended product. A process unit includes more than one unit operation. A process unit includes, but is not limited to, process vents, storage vessels, and the equipment (i.e., pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, bottoms receivers, and control devices or systems).

*Process unit shutdown* means a work practice or operational procedure that stops production from a process unit, or part of a process unit during which it is technically feasible to clear process material from a process unit, or part of a process unit, consistent with safety constraints and during which repairs can be effected. The following are not considered process unit shutdowns:

(1) An unscheduled work practice or operational procedure that stops production from a process unit, or part of a process unit, for less than 24 hours.

(2) An unscheduled work practice or operational procedure that would stop production from a process unit, or part of a process unit, for a shorter period of time than would be required to clear the process unit, or part of the process unit, of materials and start up the unit, and

would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

*Process vent* means a gas stream that is continuously discharged during operation of the unit within a manufacturing process unit that meets the applicability criteria of this subpart. Process vents include gas streams that are either discharged directly to the atmosphere or are discharged to the atmosphere after diversion through a product recovery device. Process vents exclude relief valve discharges and leaks from equipment regulated under this subpart.

*Process wastewater* means wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

*Recapture device* means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

*Recovery device* means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

*Storage vessel or Tank*, for the purposes of this subpart, means a

stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) that provide structural support and is designed to hold an accumulation of liquids or other materials. Storage vessel does not include:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Bottoms receiver tanks;
- (3) Surge control vessels; or
- (4) Wastewater storage tanks.

*Surge control vessel* means a feed drum, recycle drum, or intermediate vessel. Surge control vessels are used within a process unit (as defined in this subpart) when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

*Total organic compounds or TOC* means those compounds, excluding methane and ethane, measured according to the procedures of Method 18 or Method 25A, 40 CFR part 60, appendix A.

*Total resource effectiveness index value or TRE index value* means a measure of the supplemental total resource requirement per unit reduction of organic HAP associated with a process vent stream, based on vent stream flow rate, emission rate of organic HAP, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equations given under § 63.1104(e).

*Transfer rack* means a single system used to fill bulk cargo tanks mounted on or in a truck, railcar, or marine vessel. A transfer rack includes all loading arms, pumps, meters, shutoff valves, relief valves, and other piping and equipment necessary for the transfer operation. Transfer equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate transfer racks.

*Unit operation* means distinct equipment used in processing, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. Equipment used for these purposes includes, but is not limited to, reactors, distillation columns, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

*Vapor balancing system* means a piping system that is designed to collect organic HAP vapors displaced from tank trucks or railcars during loading; and to route the collected organic HAP vapors to the storage vessel from which the liquid being loaded originated, or to compress collected organic HAP vapors

and commingle with the raw feed of a production process unit.

*Wastewater treatment system unit* means an individual storage vessel, surface impoundment, container, oil-water or organic-water separator, or transfer system used at a plant site to manage process wastewater associated with a source category subject to this subpart.

#### § 63.1102 Compliance schedule.

(a) Affected sources, as defined in § 63.1103(a)(1)(i) for acetyl resins production; § 63.1103(b)(1)(i) for acrylic and modacrylic fiber production; § 63.1103(c)(1)(i) for hydrogen fluoride production; or § 63.1103(d)(1)(i) for polycarbonate production, shall comply with the appropriate provisions of this subpart and the subparts referenced by this subpart according to the schedule described in paragraph (a)(1) or (a)(2) of this section, as appropriate.

(1) *Compliance dates for new and reconstructed sources.*

(i) The owner or operator of a new or reconstructed affected source for which construction or reconstruction commences after October 14, 1998 that has an initial startup before the effective date of standards for an acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production affected source under this subpart shall comply with this subpart no later than the effective date of standards for the affected source.

(ii) The owner or operator of a new or reconstructed acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production affected source that has an initial startup after the effective date of standards for the affected source shall comply with this subpart upon startup of the source.

(iii) The owner or operator of an acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production affected source for which construction or reconstruction is commenced after October 14, 1998 but before the effective date of standards for the affected source under this subpart shall comply with this subpart no later than the date 3 years after the effective date if:

(A) The promulgated standard is more stringent than the proposed standard;

(B) The owner or operator complies with this subpart as proposed during the 3-year period immediately after the effective date of standards for an acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production affected source.

(iv) The owner or operator of an acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate

production affected source for which construction or reconstruction commenced after October 14, 1998 but before the proposal date of a relevant standard established pursuant to section 112(f) shall comply with the emission standard under section 112(f) not later than the date 10 years after the date construction or reconstruction is commenced, except that, if the section 112(f) standard is promulgated more than 10 years after construction or reconstruction is commenced, the owner or operator shall comply with this subpart as provided in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(2) *Compliance dates for existing sources.*

(i) The owner or operator of an existing acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production affected source shall comply with the requirements of this subpart within 3 years after the effective date of standards for the affected source.

(ii) The owner or operator of an acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate production area source that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source shall be subject to the relevant standards for new sources under this subpart. Such

sources shall comply with the relevant standard upon startup.

(b) [Reserved]

**§ 63.1103 Source category-specific applicability, definitions, and requirements.**

(a) *Acetal resins production applicability, definitions, and requirements.*—(1) *Applicability.*—(i) *Affected source.* For the acetal resins production source category (as defined in paragraph (a)(2) of this section), the affected source shall comprise all emission points, in combination, listed in paragraphs (a)(1)(i)(A) through (a)(1)(i)(D) of this section, that are associated with an acetal resins production process unit located at a major source, as defined in section 112(a) of the Clean Air Act (Act).

(A) All storage vessels that store liquids containing HAP.

(B) All process vents from continuous unit operations (front end process vents and back end process vents).

(C) All wastewater treatment system units.

(D) Equipment (as defined in § 63.1101 of this subpart) that contains or contacts HAP.

(ii) The compliance schedule for affected sources as defined in paragraph (a)(1)(i) of this section is specified in § 63.1102(a).

(2) *Definitions.*

*Acetal resins production* means the production of homopolymers and/or

copolymers of alternating oxymethylene units. Acetal resins are also known as polyoxymethylenes, polyacetals, and aldehyde resins. Acetal resins are generally produced by polymerizing formaldehyde (HCHO) with the methylene functional group (CH<sub>2</sub>) and are characterized by repeating oxymethylene units (CH<sub>2</sub>O) in the polymer backbone.

*Back end process vent* means any process vent from a continuous unit operation that is not a front end process vent up to the final separation of raw materials and by-products from the stabilized polymer.

*Front end process vent* means any process vent from a continuous unit operation involved in the purification of formaldehyde feedstock for use in the acetal homopolymer process. All front end process vents are restricted to those vents that occur prior to the polymer reactor.

(3) *Requirements.* Table 1 specifies the acetal resins production standards applicability for existing and new sources. Applicability determination procedures and methods are specified in §§ 63.1104 through 63.1107. General compliance, recordkeeping, and reporting requirements are specified in §§ 63.1108 through 63.1112. Procedures for approval of alternative means of emission limitations are specified in § 63.1113.

TABLE 1 TO § 63.1103.—WHAT ARE MY REQUIREMENTS IF I OWN OR OPERATE AN ACETAL RESINS PRODUCTION EXISTING OR NEW AFFECTED SOURCE?

If you own or operate . . .	And if . . .	Then you must . . .
1. a storage vessel with: a size capacity > 34 cubic meters	the maximum true vapor pressure of organic HAP > 17.1 kilopascals (for existing sources) or > 11.7 kilopascals (for new sources)	reduce emissions of organic HAP by 95 weight-percent, or reduce TOC to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to a control device meeting the requirements specified in 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(a) of this part; or route emissions to a fuel gas system meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(a) of this part; or comply with the requirements of 40 CFR subpart WW (national emission standards for storage vessels (control level 2)) of this part.
2. a front end process vent from continuous unit operations		reduce emissions of organic HAP by using a flare or reduce emission of organic HAP by 60 weight-percent, or reduce TOC to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(b) of this part.

TABLE 1 TO § 63.1103.—WHAT ARE MY REQUIREMENTS IF I OWN OR OPERATE AN ACETAL RESINS PRODUCTION EXISTING OR NEW AFFECTED SOURCE?—Continued

If you own or operate . . .	And if . . .	Then you must . . .
3. a back end process vent from continuous unit operations	the vent stream has a TRE <sup>a</sup> ≤ 1.0	reduce emissions of organic HAP by using a flare or reduce emissions of organic HAP by 98 weight-percent, or reduce TOC to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(b) of this part, or achieve and maintain a TRE greater than 1.0.
4. a back end process vent from continuous unit operations	1.0 ≤ TRE <sup>a</sup> ≤ 4.0	monitor and keep records of equipment operating parameters specified to be monitored under 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), §§ 63.990(c)(absorber monitoring), 63.991(c) (condenser monitoring), 63.992(c) (carbon adsorber monitoring), or 63.995(c) (other noncombustion systems used as a control device monitoring) of this part.
5. equipment as defined under § 63.1101	the equipment contains or contacts ≥ 10 weight-percent HAP, <sup>b</sup> and operates ≥ 300 hours per year	comply with the requirements of 40 CFR subpart TT (national emission standards for equipment leaks (control level 1)) or UU (national emission standards for equipment leaks (control level 2)) of this part.
6. a wastewater treatment unit	the wastewater stream has an annual average HAP concentration ≥ 10,000 parts per million <sup>c</sup> by weight at any flow rate,  or the wastewater stream has an annual average HAP concentration ≥ 1,000 parts per million by weight, <sup>c</sup>  and an annual average flowrate ≥ 10 liters per minute <sup>d</sup>	comply with the requirements of 40 CFR subparts OO, VV, QQ, and RR (national emission standards for organic wastewater treatment facilities) of this part.

<sup>a</sup> The TRE is determined according to the procedures specified in § 63.1104(j).

<sup>b</sup> The weight-percent HAP is determined for equipment according to procedures specified in § 63.1107.

<sup>c</sup> The annual average wastewater organic HAP concentration is determined according to the procedures specified in § 63.1106(a) through (c).

<sup>d</sup> The annual wastewater average flowrate is determined according to procedures specified in § 63.1106(d).

(b) *Acrylic and modacrylic fiber production applicability, definitions, and requirements.*—(1) *Applicability.*—(i) *Affected source.* For the acrylic fibers and modacrylic fibers production (as defined in paragraph (b)(2) of this section) source category, the affected source shall comprise all emission points, in combination, listed in paragraphs (b)(1)(i)(A) through (b)(1)(i)(E) of this section, that are associated with a suspension or solution polymerization process unit that produces acrylic and modacrylic fiber located at a major source as defined in section 112(a) of the Act.

(A) All storage vessels that store liquid containing acrylonitrile or HAP.

(B) All process vents from continuous unit operations.

(C) All wastewater treatment system units.

(D) Equipment (as defined in § 63.1101 of this subpart) that contains or contacts acrylonitrile or HAP.

(E) All acrylic and modacrylic fiber spinning lines using a spinning solution or suspension having organic acrylonitrile or HAP.

For the purpose of implementing this paragraph, a spinning line includes the spinning solution filters, spin bath, and the equipment used downstream of the spin bath to wash, dry, or draw the spun fiber.

(ii) The compliance schedule, for affected sources as defined in paragraph (b)(1)(i) of this section, is specified in § 63.1102(a).

(2) *Definitions.*

*Acrylic fiber* means a manufactured synthetic fiber in which the fiber-forming substance is any long-chain synthetic fiber in which the fiber-forming substance is any long-chain

synthetic polymer composed of at least 85 percent by weight of acrylonitrile units.

*Acrylic and modacrylic fibers production* means the production of either of the following synthetic fibers composed of acrylonitrile units:

1. Acrylic fiber.

2. Modacrylic fiber.

*Fiber spinning line* means the group of equipment and process vents associated with acrylic or modacrylic fiber spinning operations. The fiber spinning line includes (as applicable to the type of spinning process used) the blending and dissolving tanks, spinning solution filters, wet spinning units, spin bath tanks, and the equipment used downstream of the spin bath to wash, dry, or draw the spun fiber.

*Modacrylic fiber* means a manufactured synthetic fiber in which the fiber-forming substance is any long-

chain synthetic polymer composed of at least 35 percent by weight of acrylonitrile units but less than 85 percent by weight of acrylonitrile units.

*Solution polymerization* means a polymerization process where polymer formed in the reactor is soluble in the spinning solvent present in the reactor.

*Suspension polymerization* means a polymerization process where insoluble beads of polymer are formed in a suspension reactor.

(3) *Requirements.* An owner or operator of an affected source must comply with the requirements of paragraph (b)(3)(i) or (b)(3)(ii) of this section.

(i) Table 3a specifies the acrylic and modacrylic fiber production source category control requirement applicability for both existing and new sources. Applicability determination procedures and methods are specified in §§ 63.1104 through 63.1107. General

compliance, recordkeeping, and reporting requirements are specified in §§ 63.1108 through 63.1112. Procedures for approval of alternative means of emission limitations are specified in § 63.1113. The owner or operator must control HAP emissions from the each affected source emission point by meeting the applicable requirements specified in table 3a of this section.

TABLE 2 TO § 63.1103.—WHAT ARE MY REQUIREMENTS IF I OWN OR OPERATE AN ACRYLIC AND MODACRYLIC FIBER PRODUCTION EXISTING OR NEW AFFECTED SOURCE AND AM COMPLYING WITH PARAGRAPH (B)(3)(I) OF THIS SECTION?

If you own or operate. . .	And if. . .	Then you must. . .
1. a storage vessel	the stored material is acrylonitrile	reduce emissions of acrylonitrile by 98 weight-percent, or reduce TOC to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to a control device meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(a) of this part, or 95 weight-percent or greater by venting through a closed vent system to a recovery device meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(a) of this part; or comply with the requirements of 40 CFR part 63 subpart WW (national emission standards for storage vessels (control level 2)) of this part.
2. a process vent from continuous unit operations (halogenated)	the vent steam has a mass emission rate of halogen atoms contained in organic compounds $\geq$ 0.45 kilograms per hour <sup>a</sup> and an acrylonitrile concentration $\geq$ 50 parts per million by volume <sup>b</sup> and an average flow rate $\geq$ 0.005 cubic meters per minute	reduce emissions of acrylonitrile or TOC as specified for nonhalogenated process vents from continuous unit operations (other than by using a flare) and by venting emissions through a closed vent system to a halogen reduction device meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(b) of this part that reduces hydrogen halides and halogens by 99 weight-percent or to less than 0.45 kilograms per year, whichever is less stringent; or reduce the process vent halogen atom mass emission rate to less than 0.45 kilograms per hour by venting emissions through a closed vent system to a halogen reduction device meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(b) of this part and then complying with the requirements specified for process vents from continuous unit operations (nonhalogenated).
3. a process vent from continuous unit operations (nonhalogenated)	the vent steam has a mass emission rate of halogen atoms contained in organic compounds $<$ 0.45 kilograms per hour <sup>a</sup> , and an acrylonitrile concentration $\geq$ 50 parts per million by volume <sup>b</sup> and an average flow rate $\geq$ 0.005 cubic meters per minute	reduce emissions of acrylonitrile by using a flare or reduce emissions of acrylonitrile by 98 weight-percent, or reduce TOC to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of 40 CFR subpart SS (national emission standards for closed vent systems, control devices, recovery devices, and routing to a fuel gas system or a process), § 63.982(b) of this part.