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Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter C —Air Programs

Part 65 Consolidated Federal Air Rule

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PART 65—CONSOLIDATED FEDERAL AIR RULE

Authority: 42 U.S.C. 7401 *et seq.*

Source: 65 FR 78285, Dec. 14, 2000, unless otherwise noted.

Subpart A—General Provisions

§ 65.1 Applicability.

- (a) The provisions of this subpart apply to owners or operators expressly referenced to this part from a subpart of 40 CFR part 60, 61, or 63 for which the owner or operator has chosen to comply with the provisions of this part as an alternative to the provisions in the referencing subpart as specified in paragraph (b) of this section.
- (b) Owners or operators may choose to comply with this part for any regulated source subject to a referencing subpart.
- (c) Compliance with this part instead of the referencing subparts does not alter the applicability of the referencing subparts. This part applies to only the equipment, process vents, storage vessels, or transfer operations to which the referencing subparts apply. This part does not extend applicability to equipment, process vents, storage vessels, or transfer operations that are not regulated by the referencing subpart.
- (d) The provisions of 40 CFR part 60, subpart A; 40 CFR part 61, subpart A; and 40 CFR part 63, subpart A, that are listed in table 1 of this subpart still apply to owners or operators of regulated sources expressly referenced to this part. The owner or operator shall comply with the provisions in table 1 of this subpart in the column corresponding to the referencing subpart. All provisions of 40 CFR part 60, subpart A; 40 CFR part 61, subpart A; and 40 CFR part 63, subpart A, not expressly referenced in table 1 of this subpart do not apply, and the provisions of this part apply instead, except that provisions which were required to be met prior to implementation of this part 65 still apply.

- (e) The provisions of the referencing subparts that are listed in table 2 of this subpart still apply to owners or operators of regulated sources expressly referenced to this part. The owner or operator shall comply with the provisions in table 2 of this subpart in the row corresponding to the referencing subpart. All provisions of the referencing subparts not expressly referenced in table 2 to this subpart do not apply and the provisions of this part apply instead, except that provisions which were required to be met prior to implementation of this part 65 still apply.
- (f) **Implementation date.** Owners or operators who choose to comply with this part shall comply by the dates specified in paragraph (f)(1) of this section, as applicable, and shall meet the requirement in paragraph (f)(2) of this section.
 - (1) Owners or operators shall implement this part as specified in an implementation schedule or at initial startup. The implementation date shall be established by mutual agreement with the Administrator or delegated authority. The implementation schedule shall be included in the source's title V permit. For non-title V sources, the implementation schedule shall be proposed by the source in the Initial Notification for Part 65 Applicability as specified in § 65.5(c).
 - (2) There shall be no gaps in compliance between compliance with the referencing subpart and compliance with this part.
- (g) **Transitioning out of this part.** Owners or operators who decide to no longer comply with this part and to comply with the provisions in the referencing subpart instead shall comply with the following, as applicable:
 - (1) This transition shall be carried out on a date established in a title V permit or if the source is not a title V source, by a date established by agreement with the Administrator or delegated authority. The transition date shall be proposed in a title V permit amendment, or for non-title V sources, in a periodic report or separate notice.
 - (2) There shall be no gaps in compliance between compliance with this part and compliance with the referencing subpart provisions.
- (h) **Overlap with other subparts of this part.** When provisions of another subpart of this part conflict with the provisions of this subpart, the provisions of the other subpart shall apply.
- (i) **Equipment assignment procedures.** If specific items of equipment (pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers) that are part of a process unit complying with this part are managed by different administrative organizations (for example, different companies, affiliates, departments, divisions, etc.), those items of equipment may be aggregated with any process unit within the plant site.

§ 65.2 Definitions.

All terms used in this part shall have the meaning given them in the Act and in this section. If a term is defined both in this section and in other parts that reference the use of this part, the term shall have the meaning given in this section for purposes of this part. If a term is not defined in the Act or in this section, the term shall have the meaning given in the referencing subpart for purposes of this part. The terms follow:

Act means the Clean Air Act (42 U.S.C. 7401 et seq.).

Administrator means the Administrator of the United States Environmental Protection Agency (EPA) or his or her authorized representative (for example, a State that has been delegated the authority to implement the provisions of this part).

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Automated continuous parameter monitoring system means a continuous parameter monitoring system that automatically both records the measured data and calculates hourly averages.

Automated monitoring and recording system means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values. Automated monitoring and recording systems include, but are not limited to, computerized systems, strip charts, and circular charts.

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 (for example, connectors, reactors, valves, pumps) configured to produce a specific product or intermediate by a batch process.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater. Boiler also means any industrial furnace as defined in 40 CFR 260.10.

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.

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

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. A closed vent system does not include the vapor collection system that is part of any tank truck or railcar or the loading arm or hose that is used for vapor return. For transfer racks, the closed vent system begins at, and includes, the first block valve on the downstream side of the loading arm or hose used to convey displaced vapors.

Closed vent system 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 closed vent system or part of a closed vent system consistent with safety constraints and during which repairs can be effected. 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 is not a closed vent system shutdown. 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 closed vent system or part of the closed vent system of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled closed vent system shutdown, is not a closed vent system shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not closed vent system shutdowns.

Closed-loop system means an enclosed system that returns process fluid to a process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic emissions.

Compliance date means the date by which a regulated source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State with an approved permit program) pursuant to the Act.

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 (for example, porcelain, glass, or glass-lined) as described in § 65.108(e)(2).

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 record means documentation, either in hard copy or computer-readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 65.161(a).

Continuous seal means a seal that is designed to form a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Control device means any combustion device, recovery device, or any combination of these devices used to comply with this part. Such equipment or devices include, but are not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents (as defined in this section), recovery devices are not considered control devices except for the recovery devices specified in § 65.63(a)(2)(ii). A fuel gas system is not a control device. For a steam stripper, a primary condenser is not considered a control device.

Control system means the combination of the closed vent system and the control devices used to collect and control vapors or gases from a regulated source.

Day means a calendar day.

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.

Ductwork means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Emission point means an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak.

Empty or emptying means the removal 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, so that the floating roof is resting on its legs, as necessitated by normal vessel operation (for example, when changing stored material or when transferring material out of the vessel for shipment) is not considered emptying.

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

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.

External floating roof or EFR means a pontoon-type (noncontact) or double-deck-type (contact) roof that is designed to rest on the stored liquid surface in a storage vessel with no fixed roof.

Failure, EFR (referred to as EFR failure) is defined as any time the external floating roof's primary seal has holes, tears, or other openings in the shoe, seal fabric, or seal envelope; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the stored liquid surface from the atmosphere; or a slotted membrane has more than 10 percent open area.

Failure, internal floating roof type A (referred to as IFR type A failure) means any time, as determined during visual inspection through roof hatches, in which the internal floating roof is not resting on the surface of the stored liquid inside the storage vessel and is not resting on the leg supports; or there is stored liquid on the floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

Failure, internal floating roof type B (referred to as IFR type B failure) means any time, as determined during internal inspections, the internal floating roof's primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the stored liquid surface from the atmosphere; or a slotted membrane has more than 10 percent open area.

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

First attempt at repair, for the purposes of subparts F and G of this part, means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in §§ 65.104(b) and 65.143(c), as appropriate, to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Fixed roof means a roof that is mounted (for example, permanently affixed) on a storage vessel in a stationary manner and that does not move with fluctuations in stored liquid level.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Floating roof means a roof consisting of an external floating roof or an internal floating roof that is designed to rest upon and is supported by the stored liquid and is equipped with a continuous seal.

Flow indicator means a device that indicates whether gas flow is present in a line, or whether the valve position would allow gas flow to be present in a line.

Force majeure means, for purposes of § 65.157, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Group 1 process vent means a process vent for which the flow rate is greater than or equal to 0.011 standard cubic meter per minute (0.39 cubic feet per minute); the total concentration is greater than or equal to the appropriate value in table 1 of subpart D of this part, and the total resource effectiveness index value, calculated according to § 65.64(h) is less than or equal to 1.0.

Group 2A process vent means a process vent that is not Group 1 or Group 2B for which monitoring and recordkeeping are required to demonstrate a total resource effectiveness index value greater than 1.0.

Group 2B process vent means a process vent that is not Group 1 or Group 2A for which monitoring and recordkeeping are not required to demonstrate a total resource effectiveness index value greater than 4.0, or which is exempt from control requirements due to the vent stream's flow rate, regulated material concentration, or total resource effectiveness index value.

Halogenated vent stream or halogenated stream means, for purposes of this part, a vent stream determined to be halogenated by the procedures specified in § 65.85(c) for transfer racks and in § 65.64(g) for process vents, as applicable.

Halogens and hydrogen halides means hydrogen chloride (HCl), chlorine (Cl₂), hydrogen bromide (HBr), bromine (Br₂), and hydrogen fluoride (HF).

Hard-piping means pipe or tubing that is manufactured and installed using good engineering judgment and standards, such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007-2900).

High-throughput transfer racks means those transfer racks that transfer greater than or equal to a total of 11.8 million liters per year (3.12 million gallons per year) of liquid containing regulated material.

In food/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 that is a safety hazard;
- (3) The intended reaction to be slowed down or stopped; or
- (4) An undesired side reaction to occur.

In gas/vapor service means that a piece of equipment in regulated material service contains a gas or vapor when in operation.

In heavy liquid service means that a piece of equipment in regulated material service is not in gas/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 (0.04 pounds per square inch at 68 °F);
- (2) The total concentration of the pure organic compound constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C (0.04 pounds per square inch at 68 °F) 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 American Society for Testing and Materials (ASTM) D-2879, available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.)

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

In regulated material service means, for the purposes of the equipment leak provisions of subpart F of this part, equipment which meets the definition of "in volatile organic compound service," "in volatile hazardous air pollutant service," "in benzene service," "in vinyl chloride service," or "in organic hazardous air pollutant service" as defined in the referencing subpart.

In vacuum service means that equipment is operating at an internal pressure that is at least 5 kilopascals (0.7 pounds per square inch) below ambient pressure.

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

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. This energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Initial startup means, for new or reconstructed sources, the first time the source begins production. For additions or changes not defined as a new source by an applicable referencing 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 operation.

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 (for example, composition, pressure, flow). 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 0.5 inches and smaller in diameter and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of subpart F of this part.

Intermediate change to monitoring means a modification to federally required monitoring involving “proven technology” (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the associated emission limitation or standard. Though site-specific, an intermediate change may set a national precedent for a source category and may ultimately result in a revision to the federally required monitoring. Examples of intermediate changes to monitoring include, but are not limited to:

- (1) Use of a continuous monitoring system (CEMS) in lieu of a parameter monitoring approach;
- (2) Decreased frequency for non-continuous parameter monitoring or physical inspections;
- (3) Changes to quality control requirements for parameter monitoring; and
- (4) Use of an electronic data reduction system in lieu of manual data reduction.

Intermediate change to test method means a within-method modification to a federally enforceable test method involving “proven technology” (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the associated emission limitation or standard. Though site-specific, an intermediate change may set a national precedent for a source category and may ultimately result in a revision to the federally enforceable test method. In order to be approved, an intermediate change must be validated according to EPA Method 301 (40 CFR part 63, appendix A) to demonstrate that it provides equal or improved accuracy or precision. Examples of intermediate changes to a test method include, but are not limited to:

- (1) Modifications to a test method's sampling procedure including substitution of sampling equipment that has been demonstrated for a particular sample matrix; and use of a different impinger absorbing solution;
- (2) Changes in sample recovery procedures and analytical techniques, such as changes to sample holding times and use of a different analytical finish with proven capability for the analyte of interest; and
- (3) “Combining” a federally required method with another proven method for application to processes emitting multiple pollutants.

Internal floating roof or IFR means a pontoon-type (noncontact) or double-deck-type (contact) roof that is designed to rest or float on the stored liquid surface inside a storage vessel that has a fixed roof.

Liquid-mounted seal means a foam-or liquid-filled continuous seal mounted in contact with the stored liquid.

Liquids dripping means any visible leakage from a 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.

Loading cycle means the time period from the beginning of filling a tank truck or railcar until flow to the control device ceases as determined by the flow indicator.

Low-throughput transfer racks means those transfer racks that transfer less than a total of 11.8 million liters per year (3.12 million gallons per year) of liquid containing regulated material.

Major change to monitoring means a modification to federally required monitoring that uses “unproven technology or procedures” (not generally accepted by the scientific community) or is an entirely new method (sometimes necessary when the required monitoring is unsuitable). A major change to monitoring may be site-specific or may apply to one or more source categories and will almost always set a national precedent. Examples of major changes to monitoring include, but are not limited to:

- (1) Use of a new monitoring approach developed to apply to a control technology not contemplated in the applicable regulation in this part;
- (2) Use of a predictive emission monitoring system (PEMS) in place of a required continuous emission monitoring system (CEMS);
- (3) Use of alternative calibration procedures that do not involve calibration gases or test cells;
- (4) Use of an analytical technology that differs from that specified by a performance specification;
- (5) Decreased monitoring frequency for a continuous emission monitoring system, continuous opacity monitoring system, predictive emission monitoring system, or continuous parameter monitoring system;
- (6) Decreased monitoring frequency for a leak detection and repair program; and
- (7) Use of alternative averaging times for reporting purposes.

Major change to test method means a modification to a federally enforceable test method that uses “unproven technology or procedures” (not generally accepted by the scientific community) or is an entirely new method (sometimes necessary when the required test method is unsuitable). A major change to a test method may be site-specific or may apply to one or more source categories and will almost always set a national precedent. In order to be approved, a major change must be validated according to EPA Method 301 (40 CFR part 63, appendix A). Examples of major changes to a test method include, but are not limited to:

- (1) Use of an unproven analytical finish;
- (2) Use of a method developed to fill a test method gap;
- (3) Use of a new test method developed to apply to a control technology not contemplated in the applicable regulation in this part; and
- (4) Combining two or more sampling/analytical methods (at least one unproven) into one for application to processes emitting multiple pollutants.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. Malfunctions that do not affect a regulated source or compliance with this part are not malfunctions for purposes of this part.

Metallic shoe seal or mechanical shoe seal means metal sheets that are held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Minor change to monitoring means:

- (1) A modification to federally required monitoring that:
 - (i) Does not decrease the stringency of the compliance and enforcement measures of the relevant standard;
 - (ii) Has no national significance (e.g., does not affect implementation of the applicable regulation in this part for other affected sources, does not set a national precedent, and individually does not result in a revision to the monitoring requirements); and
 - (iii) Is site-specific, made to reflect or accommodate the operational characteristics, physical constraints, or safety concerns of an affected source.
- (2) Examples of minor changes to monitoring include, but are not limited to:
 - (i) Modifications to a sampling procedure, such as use of an improved sample conditioning system to reduce maintenance requirements;
 - (ii) Increased monitoring frequency; and
 - (iii) Modification of the environmental shelter to moderate temperature fluctuation and thus protect the analytical instrumentation.

Minor change to test method means:

- (1) A modification to a federally enforceable test method that:
 - (i) Does not decrease the stringency of the emission limitation or standard;
 - (ii) Has no national significance (e.g., does not affect implementation of the applicable regulation in this part for other affected sources, does not set a national precedent, and individually does not result in a revision to the test method); and
 - (iii) Is site-specific, made to reflect or accommodate the operational characteristics, physical constraints, or safety concerns of an affected source.
- (2) Examples of minor changes to a test method include, but are not limited to:
 - (i) Field adjustments in a test method's sampling procedure, such as a modified sampling traverse or location to avoid interference from an obstruction in the stack, increasing the sampling time or volume, use of additional impingers for a high moisture situation, accepting particulate emission results for a test run that was conducted with a lower than specified temperature, substitution of a material in the sampling train that has been demonstrated to be more inert for the sample matrix; and
 - (ii) Changes in recovery and analytical techniques such as a change in quality control/quality assurance requirements needed to adjust for analysis of a certain sample matrix.

Nonautomated monitoring and recording system means manual reading of values measured by monitoring instruments and manual transcription of those values to create a record. Nonautomated systems do not include strip charts nor circular charts.

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

One-hour period means the 60-minute period commencing on the hour.

Onsite or on-site means, with respect to records required to be maintained by this part, that the records are stored at a location within a plant site that encompasses the regulated source. Onsite includes, but is not limited to, storage at the regulated source to which the records pertain, or storage in central files elsewhere at the plant site.

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 the atmosphere, either directly or through open piping.

Organic monitoring device means a device used to indicate the concentration level of organic compounds based on a detection principle such as infrared, photo ionization, or thermal conductivity.

Owner or operator means any person who owns, leases, operates, controls, or supervises a regulated source or a stationary source of which a regulated source is a part.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Performance test means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission standard as specified in the performance test section of the relevant standard.

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in part 71 of this chapter.

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.

Polymerizing monomer means, for the purposes of this part, a compound which may form polymer buildup in pump mechanical seals resulting in rapid mechanical seal failure.

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.

Pressure relief device or valve means a 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.

Primary fuel means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means an enclosed combustion device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water. A process heater may, as a secondary function, heat water in unfired heat recovery sections.

Process unit means the equipment specified in the definitions of process unit or chemical manufacturing process unit in the applicable referencing subpart. If the referencing subpart does not define process unit, then, for the purposes of this part, process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product.

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. 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 is not a process unit shutdown. 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 is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Process vent means a process vent or vent stream as they are defined in the referencing subpart.

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, use, or reuse. Equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse or sale, are not recovery devices but are control devices. 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.

Reference method means any method of sampling and analyzing for an air pollutant as specified in an applicable subpart, the appendices to 40 CFR part 60 or 63, or in appendix B of 40 CFR part 61.

Referencing subpart means 40 CFR part 60, subparts Ka, Kb, VV, DDD, III, NNN, and RRR; 40 CFR part 61, subparts V, Y, and BB; and 40 CFR part 63, subparts G and H.

Regulated material means, for the purposes of this part, the material regulated by the specific referencing subpart, including volatile organic liquids (VOL), volatile organic compounds (VOC), organic hazardous air pollutants (HAP's), benzene, vinyl chloride, or other chemicals or groups of chemicals.

Regulated source means, for the purposes of this part, the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a relevant standard or other requirement established pursuant to this part, or 40 CFR part 60, 61, or 63.

Relief device or valve means a device or valve used only to release an unplanned, nonroutine discharge. A relief device or 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 means, for the purposes of subparts F and G of this part, that equipment meets the following conditions:

- (1) Is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable section of this part; and

- (2) Unless otherwise specified in applicable provisions of this part, is monitored as specified in §§ 65.104(b) and 65.143(c) to verify that emissions from the equipment are below the applicable leak definition.

Routed to a process or route to a process means the emissions are conveyed to any enclosed portion of a process unit where the emissions are predominantly recycled and/or consumed in the same manner as a material that fulfills the same function in the process and/or transformed by chemical reaction into materials that are not regulated materials and/or incorporated into a product; and/or recovered.

Run means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this part. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Sampling connection system means an assembly of equipment within a process unit 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.

Secondary fuel means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

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.

Shutdown means the cessation of operation of a regulated source (for example, chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit) and equipment required or used to comply with this part, or the emptying and degassing of a storage vessel. Shutdown is defined here for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair. Shutdown does not include the routine rinsing or washing of equipment in batch operation between batches.

Simultaneous loading means, for a shared control device, loading of regulated materials from more than one transfer arm at the same time so that the beginning and ending times of loading cycles coincide or overlap and there is no interruption in vapor flow to the shared control device.

Single-seal system means, for the purposes of subpart C of this part, a floating roof having one continuous seal. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of ± 0.02 specific gravity units.

Startup means the setting into operation of a regulated source (for example, chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, a storage vessel after emptying and degassing) and/or equipment required or used to comply with this part. Startup includes initial startup, operation solely for testing equipment, the recharging of equipment in batch operation, and transitional conditions due to changes in product for flexible operation units.

State means all non-Federal authorities, including local agencies, interstate associations, and statewide programs, that have delegated authority to implement the provisions of this part; the referencing subparts; and/or the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Steam jet ejector means a steam nozzle that discharges a high-velocity jet across a suction chamber that is connected to the equipment to be evacuated.

Stuffing box pressure means the fluid (liquid or gas) pressure inside the casing or housing of a piece of equipment, on the process side of the inboard seal.

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

Temperature monitoring device means a unit of equipment used to monitor temperature and having a minimum accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius or ± 1.2 degrees Celsius ($^{\circ}\text{C}$), whichever is greater.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established under 40 CFR part 70 or 71 to implement title V of the Act (42 U.S.C. 7661).

Total organic compounds or TOC means those compounds measured according to the procedures specified in §§ 65.64(c) and 65.158(b)(3)(ii)(A), as applicable. Those compounds that the Administrator has determined do not contribute appreciably to the formation of ozone and that are specifically excluded from the definition of volatile organic compound at 40 CFR 51.100(s), as amended, are to be excluded for the purposes of measuring the hourly emission rate as required in § 65.64(f) for process vents subject to subpart III, NNN, or RRR of part 60 of this chapter.

Total resource effectiveness index value or TRE index value means a calculated value used to determine whether control is required for a process vent. It is based on process vent flow rate, emission rate of regulated material, net heating value, and corrosion properties (halogenated compound content), as quantified by the equations given under § 65.64(h).

Vapor balancing system means a piping system that is designed to collect regulated material vapors displaced from tank trucks or railcars during loading and to route the collected regulated material vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected by a common header; or to compress and route to a process or a fuel gas system the collected regulated material vapors.

Vapor-mounted seal means a continuous seal that is mounted so that there is a vapor space between the stored liquid and the bottom of the seal.

Visible emission means the observation of an emission of opacity or optical density above the threshold of vision.

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20471, Apr. 20, 2006; 72 FR 48942, Aug. 27, 2007]

§ 65.3 Compliance with standards and operation and maintenance requirements.

(a) Requirements.

- (1) Except as provided in paragraph (a)(2) of this section, the emission standards and established parameter ranges of this part shall apply at all times except during periods of startup, shutdown (as defined in § 65.2), malfunction, or nonoperation of the regulated source (or specific portion thereof) resulting in cessation of the emissions to which this part applies. However, if a startup, shutdown, malfunction, or period of nonoperation of one portion of a regulated source does not affect the ability of a particular emission point to comply with the specific provisions to which it is subject, then

that emission point shall still be required to comply with the applicable provisions of this part during the startup, shutdown, malfunction, or period of nonoperation. For example, if there is an over pressure in the reactor area, a storage vessel in a chemical manufacturing process unit would still be required to be controlled in accordance with subpart C of this part. Similarly, the degassing of a storage vessel would not affect the ability of a process vent to meet the requirements of subpart D or G of this part.

- (2) Sections 65.106 through 65.118 shall apply at all times except during periods of startup or shutdown (as defined in § 65.2), malfunction, process unit shutdown (as defined in § 65.2), or nonoperation of the regulated source (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which subpart F of this part applies.
- (3) During startups, shutdowns, and malfunctions when the emission standards of this part do not apply pursuant to paragraphs (a)(1) and (2) of this section, the owner or operator shall implement, to the extent reasonably available, measures to prevent or minimize emissions in excess of those that would have occurred if there were no startup, shutdown, or malfunction and the owner or operator complied with the relevant provisions of this part. The measures to be taken may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the regulated source. Backup control devices are not required but may be used if available. This paragraph (a)(3) does not apply to Group 2A or Group 2B process vents.
- (4) Malfunctions shall be corrected as soon as practical after their occurrence. This paragraph (a)(4) does not apply to Group 2A or Group 2B process vents.
- (5) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(b) **Compliance determination procedures —**

- (1) **Parameter monitoring: Compliance with operating conditions.** The parameter monitoring data for emission points that are required to perform continuous monitoring shall be used to determine compliance with the required operating conditions for the monitored control devices or recovery devices. For each excursion, except for excused excursions and as provided for in paragraph (b)(2) of this section, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions. Excused excursions are provided for in § 65.156(d)(2).
- (2) **Parameter monitoring: Excursions.** If the conditions of paragraph (b)(2)(i) or (ii) of this section are met, an excursion is not a violation and, in cases where continuous monitoring is required, the excursion does not count toward the number of excused excursions. Nothing in this paragraph (b)(2) shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of this part.
 - (i) During periods of startup, shutdown, or malfunction (and the source is operated during such periods in accordance with § 65.3(a)(3)), a monitoring parameter is outside its established range or monitoring data cannot be collected; or
 - (ii) During periods of nonoperation of the regulated source or portion thereof (resulting in cessation of the emissions to which the monitoring applies).

- (3) **Operation and maintenance procedures.** Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan, if applicable, required in § 65.6(a), as applicable), review of operation and maintenance records, inspection of the regulated source, and alternatives approved as specified in § 65.7.
- (4) **Emissions standards.** Paragraphs (b)(4)(i) and (ii) of this section shall govern the use of data, tests, and requirements to determine compliance with emissions standards. Paragraphs (b)(4)(i) and (ii) do not apply to Group 2A or Group 2B process vents. Compliance with design, equipment, work practice, and operational standards, including those for equipment leaks, shall be determined according to paragraph (b)(5) of this section.
 - (i) **Performance test.** The Administrator will determine compliance with emission standards of this part based on the results of performance tests conducted according to the procedures specified in subpart G of this part, unless otherwise specified in a subpart of this part.
 - (ii) **Operation and maintenance requirements.** The Administrator will determine compliance with emission standards of this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in subparts of this part.
- (5) **Design, equipment, work practice, or operational standards.** Paragraphs (b)(5)(i) and (ii) do not apply to Group 2A or Group 2B process vents.
 - (i) **Records and inspection.** The Administrator will determine compliance with design, equipment, work practice, or operational standards by review of records, inspection of the regulated source, and other procedures specified in this part.
 - (ii) **Operation and maintenance.** The Administrator will determine compliance with design, equipment, work practice, or operational standards by evaluation of an owner or operator's conformance with operation and maintenance requirements as specified in paragraph (a) of this section, in other subparts of this part, and in applicable provisions of § 65.6(b).
- (c) **Finding of compliance.** The Administrator will make a finding concerning a regulated source's compliance with an emission standard, design standard, work practice, operational standard or operating and maintenance requirement as specified in paragraphs (a) and (b) of this section upon obtaining all the compliance information required by the relevant standard (including the written reports of performance test results, monitoring results, and other information, if applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used. Standards in this part and methods of determining compliance are given in metric units followed by the equivalents in English units. The Administrator will make findings of compliance with the standards of this part using metric units.
- (d) **Compliance times.** All terms that define a period of time for completion of required tasks (for example, weekly, monthly, quarterly, annually) unless specified otherwise in the section or paragraph that imposes the requirement refer to the standard calendar periods.

- (1) Notwithstanding time periods specified for completion of required tasks, time periods may be changed by mutual agreement between the owner or operator and the Administrator as specified in § 65.5(h)(3) (for example, a period could begin on the compliance date or another date, rather than on the first day of the standard calendar period). For each time period that is changed by agreement, the revised period applies until it is changed. A new request is not necessary for each recurring period.
- (2) When the period specified for compliance is a standard calendar period, if the initial compliance date occurs after the beginning of the period, compliance shall be required according to the schedule specified in the following paragraphs, as appropriate:
 - (i) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or
 - (ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.
- (3) In all instances where a provision requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during the specified period provided the task is conducted at a reasonable interval after completion of the task during the previous period.

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20471, Apr. 20, 2006]

§ 65.4 Recordkeeping.

- (a) **Maintaining notifications, records, and reports.** Except as provided in paragraph (b) of this section, the owner or operator of each regulated source subject to this part shall keep copies of notifications, reports, and records required by this part for the length of time specified in the following, as applicable:
 - (1) If an owner or operator is required to obtain or operate a regulated source under a title V permit, then all applicable notifications, reports, and records for that regulated source shall be maintained for at least 5 years, except for the records required in § 65.47(b) for storage vessel capacity, § 65.104(e)(2) for valve and connector monitoring, and § 65.163(d)(1) for closed vent system design specifications.
 - (2) If an owner or operator is not required to obtain or operate a regulated source under a title V permit, then all notifications, reports, and records for that regulated source required by this part shall be maintained for at least 2 years, except for the records required in § 65.47(b) for storage vessel capacity, § 65.104(e)(2) for valve and connector monitoring, and § 65.163(d)(1) for closed vent system design specifications.
- (b) **Copies of reports.** If an owner or operator submits reports to the applicable EPA Regional Office, the owner or operator is not required to maintain copies of those reports. If the EPA Regional Office has waived the requirement of § 65.5(g)(1) for submittal of copies of reports, the owner or operator is not required to maintain copies of the waived reports. Paragraph (b) of this section applies only to reports and not the underlying records which must be maintained as specified throughout this part.
- (c) **Availability of records.** All applicable records shall be maintained in such a manner that they can be readily accessed and are suitable for inspection as specified in the following:

- (1) Except as specified in paragraph (c)(2) of this section, records of the most recent 2 years shall be retained onsite or shall be accessible to an inspector while onsite. The records of the remaining 3 years, where required, may be retained offsite.
- (2) For sources referenced to this part from 40 CFR part 63, subpart G or H, the most recent 6 months of records shall be retained on site or shall be accessible to an inspector while onsite from a central location by computer or other means that provides access within 2 hours after a request. The remaining 4 and one-half years of records, where required, may be retained offsite.
- (3) Records specified in paragraph (c)(1) or (2) of this section may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, computer disk, magnetic tape, or microfiche.

§ 65.5 Reporting requirements.

- (a) **Required reports.** Each owner or operator of a regulated source subject to this subpart shall submit the following reports, as applicable:
 - (1) A Notification of Initial Startup described in paragraph (b) of this section.
 - (2) An Initial Notification for Part 65 Applicability described in paragraph (c) of this section.
 - (3) An Initial Compliance Status Report described in paragraph (d) of this section.
 - (4) Periodic reports described in paragraph (e) of this section.
 - (5) Other reports shall be submitted as specified elsewhere in this part.
 - (6) Startup, Shutdown, and Malfunction Reports described in § 65.6(c).
- (b) **Notification of Initial Startup —**
 - (1) **Contents.** Any owner or operator of a regulated source which elects to comply with this part at initial startup shall send the Administrator written notification of the actual date of initial startup of a regulated source.
 - (2) **Due date.** The notification of the actual date of initial startup shall be postmarked within 15 days after such date.
- (c) **Initial Notification for Part 65 Applicability.** Owners or operators of regulated sources that have been subject to a 40 CFR part 60, 61, or 63 standard, and who wish to comply with this part, and who are not operating the regulated source under an approved title V permit shall notify the Administrator of their intent. The notice shall include the information specified in paragraphs (c)(1) through (7) of this section, as applicable, and may accompany the application for a construction permit for the regulated source. This notification may be waived by the Administrator.
 - (1) Identification of the storage vessels subject to subpart C of this part.
 - (2) Identification of the process vents subject to subpart D of this part, including process vent group status as specified in § 65.62(a).
 - (3) Identification of the process vents subject to 40 CFR part 60, subpart DDD, complying with requirements of subpart G of this part.
 - (4) Identification of the transfer racks subject to subpart E of this part.
 - (5) For equipment leaks, identification of the process units subject to subpart F of this part.

- (6) The proposed implementation schedule specified in § 65.1(f)(1) for sources identified in paragraphs (c)(1) through (5) of this section.
- (7) **Process unit identification.** As an alternative to requirements specified in paragraphs (c)(1) through (4) of this section, the process units can be identified instead of the individual pieces of equipment. For this alternative, the kind of emission point in the process unit that will comply must also be identified.

(d) **Initial Compliance Status Report —**

- (1) **Contents.** The owner or operator shall submit an Initial Compliance Status Report for each regulated source subject to this part containing the information specified in the subparts of this part. Unless the required information has already been submitted under requirements of the applicable referencing subpart, this information can be submitted as part of a title V permit application or amendment.
- (2) **Due date.** The owner or operator shall submit the Initial Compliance Status Report for each regulated source within 240 days after the applicable compliance date specified in the referencing subparts, or within 60 days after the completion of the initial performance test or initial compliance determination, whichever is earlier. Initial compliance Status Reports may be combined for multiple regulated sources as long as the due date requirements for all sources covered in the combined report are met.

(e) **Periodic reports.** The owner or operator of a source subject to monitoring requirements of this part or to other requirements of this part where periodic reporting is specified, shall submit a periodic report.

- (1) **Contents.** Periodic reports shall include all information specified in subparts of this part.
- (2) **Due date.** The periodic report shall be submitted semiannually no later than 60 calendar days after the end of each 6-month period. The first report shall be submitted as specified in the following, as applicable:
 - (i) The first report shall be submitted no later than the last day of the month that includes the date 8 months after the date the source became subject to this part or since the last part 60, 61, or 63 periodic report was submitted for the applicable requirement, whichever is earlier.
 - (ii) For sources electing to comply with the CAR at initial startup, the first report shall cover the 6 months after the Initial Compliance Status Report is due. The first report shall be submitted no later than the last day of the month that includes the date 8 months after the Initial Compliance Status Report is due.
- (3) **Overlap with title V reports.** Information required by this part, which is submitted with a title V periodic report, need not also be included in a subsequent periodic report required by this part. The title V report shall be referenced in the periodic report required by this part.

(f) **General report content.** All reports and notifications submitted pursuant to this part, including reports that combine information from this part and a referencing subpart, shall include the following information:

- (1) The name, address, and telephone number (fax number may also be provided) of the owner or operator.
- (2) The name, address and telephone number of the person to whom inquiries should be addressed, if different than the owner/operator.

- (3) The address (physical location) of the reporting facility.
- (4) Identification of each regulated source covered in the submission and identification of which subparts (referencing subparts and this part 65) options from this part are applicable to that regulated source. Summaries and groupings of this information are permitted.

(g) **Report and notification submission —**

- (1) **Submission.** All reports and notifications required under this part shall be sent to the Administrator at the appropriate EPA Regional Office and to the delegated State authority, except that requests for permission to use an alternative means of emission limitation as provided for in § 65.8(a) shall be submitted to the Director of the EPA Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, MD-10, Research Triangle Park, North Carolina, 27711. The EPA Regional Office may waive the requirement to receive a copy of any reports or notifications at its discretion.
- (2) **Submission of copies.** If any State requires a notice that contains all the information required in a report or notification listed in this part, an owner or operator may send the appropriate EPA Regional Office a copy of the report or notification sent to the State to satisfy the requirements of this part for that report or notification.
- (3) **Method of submission.** Wherever this subpart specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (for example, by fax or courier). Submittals shall be sent on or before the specified date.
- (4) **Submission by electronic media.** If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(h) **Adjustment to timing of submittals and review of required communications —**

- (1) **Alignment with title V submission.** An owner or operator may submit periodic reports required by this part on the same schedule as the title V periodic report for the facility. The owner or operator using this option need not obtain prior approval, but must assure no reporting gaps from the last periodic report for the relevant standards. The owner or operator shall clearly identify the change in reporting schedule in the first report filed under paragraph (h) of this section. The requirements of paragraph (e) of this section are not waived when implementing this change.
- (2) **Request for adjustment.** An owner or operator may arrange by mutual agreement (which may be a standing agreement) with the Administrator a common schedule on which periodic reports required by this part shall be submitted throughout the year as long as the reporting period is not extended. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practical before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted. A request for a change to the periodic reporting schedule need only be made once for every schedule change and not once for every semiannual report submitted.
- (3) **Approval of request for adjustment.** If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

- (4) **Notification of delay.** If the Administrator is unable to meet a specified deadline, the owner or operator will be notified of any significant delay and informed of the amended schedule.
- (i) Unless already submitted in a previous report, an owner or operator shall report in a title V permit application or as otherwise specified by the permitting authority, the information listed in paragraphs (i)(1) through (5) of this section. This information shall be submitted to the Administrator if the regulated source is not a title V source.
 - (1) A list designating each emission point complying with subparts C through G of this part and whether each process vent is Group 1, Group 2A, or Group 2B.
 - (2) The control technology or method of compliance that will be applied to each emission point.
 - (3) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in subparts C through G of this part that are applicable to each emission point will be implemented beginning on the date of compliance as specified in the referencing subpart.
 - (4) The monitoring information in § 65.162(e) if, for any emission point, the owner or operator of a source seeks to comply through use of a control technique other than those for which monitoring parameters are specified in §§ 65.148 through 65.154.
 - (5) Any requests for alternatives to the continuous operating parameter monitoring and recordkeeping provisions, as specified in § 65.162(d).

§ 65.6 Startup, shutdown, and malfunction plan and procedures.

- (a) Paragraphs (b) and (c) of this section do not apply to Group 2A or Group 2B process vents.
- (b) **Startup, shutdown, and malfunction plan —**
 - (1) **Description and purpose of plan.** The owner or operator of a regulated source shall develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the regulated source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The plan shall also address routine or otherwise predictable CPMS malfunctions. This plan shall be developed by the owner or operator by the regulated source's implementation date as specified in § 65.1(f), or for sources referenced from 40 CFR part 63, subpart F, by the compliance date specified in that subpart. The requirement to develop this plan shall be incorporated into the source's title V permit. This requirement is optional for equipment that must comply with subpart F of this part. It is not optional for equipment equipped with a closed vent system and control device subject to subpart G of this part. The purposes of the startup, shutdown, and malfunction plan are described in the following:
 - (i) To ensure that owners or operators are prepared to correct malfunctions as soon as practical after their occurrence in order to minimize excess emissions of regulated material (excess emissions are defined in § 65.3(a)(4)); and
 - (ii) To reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).
 - (2) **Operation of source.** During periods of startup, shutdown, and malfunction, the owner or operator of a regulated source shall operate and maintain such source (including associated air pollution control equipment and CPMS) in accordance with § 65.3(a). The general duty to minimize emissions during

a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (b)(1) of this section), review of operation and maintenance records, and inspection of the source.

- (3) **Use of additional procedures.** To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the regulated source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection when requested by the Administrator.
- (4) **Revisions to the plan.** Based on the results of a determination made under § 65.3(b)(3), the Administrator may require that an owner or operator of a regulated source make changes to the startup, shutdown, and malfunction plan for that source. The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan is inadequate as specified in the following:
 - (i) Does not address a startup, shutdown, and malfunction event of the CPMS, the air pollution control equipment, or the regulated source that has occurred; or
 - (ii) Fails to provide for the operation of the regulated source (including associated air pollution control equipment and CPMS) during a startup, shutdown, and malfunction event in a manner consistent with good air pollution control practices for minimizing emissions to the extent practical; or
 - (iii) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable; or
 - (iv) Does not provide adequate measures to prevent or minimize excess emissions to the extent practical as specified and defined in § 65.3(a)(4).
- (5) **Additional malfunction plan requirements.** If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the owner or operator developed the plan, the owner or operator shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the regulated source during similar malfunction events, and a program of corrective action for similar malfunctions of process or air pollution control equipment or CPMS.
- (6) **Retain plan on site.** The current plan must be kept on site at all times.
- (c) **Periodic startup, shutdown, and malfunction reports.** During the reporting period, reports shall only be required for startup, shutdown, and malfunction during which excess emissions as defined in § 65.3(a)(4) occur. A startup, shutdown, and malfunction report can be submitted as part of a periodic report required under § 65.5(e), or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit. The startup, shutdown, and

malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate), unless the information is submitted with the periodic report. The report shall include the following information, as appropriate:

- (1) The name, title, and signature of the owner or operator or other responsible official certifying its accuracy.
- (2) The number of startup, shutdown, malfunction events and the total duration of all periods of startup, shutdown, and malfunction for the reporting period.
- (3) If actions taken by an owner or operator during a startup, shutdown, and malfunction of a regulated source, or of a control device or monitoring system required for compliance (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan, then the owner or operator shall state such information in a startup, shutdown, and malfunction report, and describe the actions taken. Such description can take the form of a checklist; only one checklist is necessary if actions taken are the same for multiple events during the reporting period.
- (4) If at any time an action taken by an owner or operator, during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) during which excess emissions occur, as defined in § 65.3(a)(4), is not consistent with the procedures specified in the regulated source's startup, shutdown, and malfunction plan, the owner or operator shall report the actions taken for that event as part of the periodic report. The report shall explain the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20471, Apr. 20, 2006]

§ 65.7 Monitoring, recordkeeping, and reporting waivers and alternatives, and alternative work practice for equipment leaks.

(a) *Waiver of recordkeeping or reporting requirements* —

- (1) **Waiver application.** The owner or operator may apply for a waiver from recordkeeping or reporting requirements if the regulated source is achieving the relevant standard(s), or the source is operating under an extension of compliance under 40 CFR 63.6(i), or a waiver of compliance under 40 CFR 61.10(b), or the owner or operator has requested an extension or waiver of compliance and the Administrator is still considering that request. The waiver application shall be submitted in writing to the Administrator.
- (2) **Extension of compliance request.** If an application for a waiver of recordkeeping or reporting is made, the application shall accompany the request for an extension of compliance under 40 CFR 63.6(i) or the request for a waiver of compliance under 40 CFR 61.10(b), any required compliance progress report or compliance status report required in the source's title V permit application or a permit modification application, or a periodic report required under this part, whichever is applicable. The application shall include whatever information the owner or operator considers useful to convince the Administrator that a waiver of recordkeeping or reporting is warranted.
- (3) **Approval or denial of waiver.** The Administrator will approve or deny a request for a waiver of recordkeeping or reporting requirements when performing one of the following actions:

- (i) Approves or denies an extension of compliance under 40 CFR 63.6(i) or a waiver of compliance under 40 CFR 61.10(b); or
- (ii) Makes a determination of compliance following the submission of a required compliance status report or periodic report; or
- (iii) Makes a determination of suitable progress toward compliance following the submission of a compliance progress report, whichever is applicable.

(4) **Waiver conditions.** A waiver of any recordkeeping or reporting requirement granted under this paragraph (a) may be conditioned on other recordkeeping or reporting requirements deemed necessary by the Administrator.

(5) **Waiver cancellation.** Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the regulated source.

(b) **Requests for approval of alternative monitoring or recordkeeping.** An owner or operator may submit a written request for approval to use alternatives to the monitoring or recordkeeping provisions of this part. For process vents and transfer racks, except low-throughput transfer racks, the provisions in paragraph (c) of this section shall govern the review and approval of requests. In addition, the application shall include information justifying the owner or operator's request for an alternative monitoring or recordkeeping method, such as the technical or economic infeasibility, or the impracticality, of the regulated source using the required method. For storage vessels and low throughput transfer racks, owners and operators shall comply with the requirements of § 65.145(b) for preparing and submitting a design evaluation. For equipment leaks, owners and operators shall comply with the recordkeeping requirements of § 65.163(d). Owners and operators are also provided the option of complying with an alternative work practice for monitoring leaking equipment in § 65.7 (e), (f), and (g) rather than monitoring equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(c) **Approval or denial of request to use alternative monitoring or recordkeeping.** The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring or recordkeeping method within 90 calendar days after receipt of the original request and within 30 calendar days after receipt of any supplementary information that is submitted. Before disapproving any request to use an alternative method, the Administrator will notify the applicant of the Administrator's intention to disapprove the request together with the following:

- (1) Notice of the information and findings on which the intended disapproval is based; and
- (2) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of the intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(d) **Use of an alternative monitoring or recordkeeping method.**

- (1) The owner or operator of a regulated source is subject to the monitoring and recordkeeping requirements of the relevant standard unless permission to use an alternative monitoring or recordkeeping method requested under paragraph (b) of this section or § 65.162(d) has been granted by the Administrator. Once an alternative is approved, the owner or operator shall use the

alternative for the emission points or regulated sources cited in the approval and shall meet the monitoring and recordkeeping requirements of the relevant standard for all other emission points or regulated sources.

- (2) If the Administrator approves the use of an alternative monitoring or recordkeeping method for a regulated source under paragraph (c) of this section, the owner or operator of such source shall continue to use the alternative monitoring or recordkeeping method unless he or she receives approval from the Administrator to use another method.
- (3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring or recordkeeping method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in the relevant standard. If the results of the specified and alternative methods, requirements, or procedures do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(e) **Alternative work practice for monitoring equipment for leaks.** This section contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor. Paragraphs (e), (f), and (g) of this section apply to all equipment for which the applicable subpart requires monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, appendix A-7, Method 21 monitor. Requirements in the existing subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable subpart that are not addressed in paragraphs (e), (f), and (g) of this section continue to apply. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable subpart continue to apply. The terms defined in paragraphs (e)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (e), (f), and (g) of this section.

- (1) **Applicable subpart** means the subpart in 40 CFR parts 60, 61, 63, and 65 that requires monitoring of each piece of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.
- (2) **Equipment** means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable subpart that require monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor.
- (3) **Imaging** means making visible emissions that may otherwise be invisible to the naked eye.
- (4) **Optical gas imaging instrument** means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.
- (5) **Repair** means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.
- (6) **Leak** means:
 - (i) Any emissions imaged by the optical gas instrument;
 - (ii) Indications of liquids dripping;
 - (iii) Indications by a sensor that a seal or barrier fluid system has failed; or

- (iv) Screening results using a 40 CFR part 60, appendix A-7, Method 21 monitor that exceed the leak definition in the applicable subpart to which the equipment is subject.
- (f) The alternative work practice standard for monitoring equipment for leaks is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.
 - (1) An owner or operator of an affected source subject to 40 CFR parts 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (g) of this section instead of using the 40 CFR part 60, appendix A-7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.
 - (2) Any leak detected when following the leak survey procedure in paragraph (g)(3) of this section must be identified for repair as required in the applicable subpart.
 - (3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR part 60, appendix A-7, Method 21 monitor at the leak definition required in the applicable subparts to which the equipment is subject.
 - (4) The schedule for repair is as required in the applicable subpart.
 - (5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 3 to subpart A of this part, in lieu of the monitoring frequency specified for regulated equipment in the applicable subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.
 - (6) When this alternative work practice is used for detecting leaking equipment, the following are not applicable for the equipment being monitored:
 - (i) Skip period leak detection and repair;
 - (ii) Quality improvement plans; or
 - (iii) Complying with standards for allowable percentage of valves and pumps to leak.
 - (7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (f)(1)(i) of this section must also be monitored annually using a 40 CFR part 60, appendix A-7, Method 21 monitor at the leak definition required in the applicable subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.
- (g) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (g)(1) through (g)(5) of this section.
 - (1) **Instrument specifications.** The optical gas imaging instrument must comply with the requirements specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this section.

- (i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (g)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.
 - (ii) Provide a date and time stamp for video records of every monitoring event.
- (2) **Daily instrument check.** On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (g)(2)(i) of this section in accordance with the procedure specified in paragraphs (g)(2)(ii) through (g)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (g)(2)(v) of this section.
- (i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (g)(2)(i)(A) and (g)(2)(i)(B) of this section.
 - (A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (g)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.
 - (B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 3 of subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (g)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = (E_{sds}) \sum_{i=1}^k x_i$$

Where:

E_{dic} = Mass flow rate for the daily instrument check, grams per hour

x_i = Mass fraction of detectable chemical(s) i seen by the optical gas imaging instrument, within the distance to be used in paragraph (g)(2)(iv)(B) of this section, at or below the standard detection sensitivity level, E_{sds} .

E_{sds} = Standard detection sensitivity level from Table 3 to subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

- (ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.
- (iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.
- (iv) Establish a mass flow rate by using the following procedures:

- (A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.
 - (B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.
 - (C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate calculated in paragraph (g)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.
 - (v) Repeat the procedures specified in paragraphs (g)(2)(ii) through (g)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.
 - (vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under § 65.7(b).
- (3) **Leak survey procedure.** Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.
- (4) **Recordkeeping.** Keep the records described in paragraphs (g)(4)(i) through (g)(4)(vii) of this section:
- (i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.
 - (ii) The detection sensitivity level selected from Table 3 to subpart A of this part for the optical gas imaging instrument.
 - (iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (g)(2)(i)(A) of this section.
 - (iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (g)(2)(i)(B) of this section.
 - (v) **The daily instrument check.** Record the distance, per paragraph (g)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (g)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.
 - (vi) **Recordkeeping requirements in the applicable subpart.** A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.

(vii) *The results of the annual Method 21 screening required in paragraph (f)(7) of this section.*

Records must be kept for all regulated equipment specified in paragraph (f)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable subparts.

- (5) **Reporting.** Submit the reports required in the applicable subpart. Submit the records of the annual Method 21 screening required in paragraph (f)(7) of this section to the Administrator via e-mail to CCG-AWP@EPA.GOV.

[65 FR 78285, Dec. 14, 2000, as amended at 73 FR 78217, Dec. 22, 2008]

§ 65.8 Procedures for approval of alternative means of emission limitation.

- (a) **Alternative means of emission limitation.** An owner or operator may request a determination of equivalence for an alternative means of emission limitation to the requirements of design, equipment, work practice, or operational standards of this part. If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduction in regulated material emissions at least equivalent to the reduction in emissions from that source achieved under any design, equipment, work practice, or operational standards (but not performance standards) in this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

- (1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.
- (2) Any such notice shall be published only after public notice and an opportunity for a hearing.

(b) **Content of submittal.**

- (1) In order to obtain approval, any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions. An owner or operator seeking permission to use an alternative means of compliance who has not previously performed testing shall also submit a proposed test plan. If the owner or operator seeks permission to use an alternative means of compliance based on previously performed testing, they shall submit the results of that testing, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring.
- (2) The owner or operator who requests an alternative means of emission limitation shall submit a description of the proposed testing, monitoring, recordkeeping, and reporting that will be used and the proposed basis for demonstrating compliance.
- (3) For storage vessels, the owner or operator shall include the results of actual emissions tests using full-size or scale-model storage vessels that accurately collect and measure all regulated material emissions using a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or an engineering analysis that the Administrator determines is an accurate method of determining equivalence.
- (4) For proposed alternatives to equipment leak requirements, the owner or operator shall also submit the information and meet the requirements for alternative means of emission limitation specified in § 65.102(b) (alternative means of emission limitation).

- (c) Manufacturers of equipment used to control equipment leaks of a regulated material may request a determination of equivalence for an alternative means of emission limitation for equipment leaks, as specified in § 65.102(c).
- (d) **Compliance.** If the Administrator makes a determination that a means of emission limitation is a permissible alternative to the requirements of design, equipment, work practice, or operational standards of this part, the owner or operator shall either comply with the alternative or comply with the requirements of this part.

§ 65.9 Availability of information and confidentiality.

- (a) **Availability of information.** The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter. With the exception of information protected under part 2 of this chapter, all reports, records, and other information collected by the Administrator under this part are available to the public. In addition, a copy of each permit application, compliance plan (including the schedule of compliance), initial compliance status report, periodic report, and title V permit is available to the public, consistent with protections recognized in section 503(e) of the Act.
- (b) **Confidentiality.**
 - (1) If an owner or operator is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the owner or operator may submit such information separately. The requirements of section 114(c) shall apply to such information.
 - (2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.

§ 65.10 State authority.

- (a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from adopting and enforcing any emission standard or limitation applicable to a regulated source, provided that such standard, limitation, prohibition, or other regulation is not less stringent than the standard applicable to such a regulated source.
- (b) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from requiring the owner or operator of a regulated source to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such a regulated source.

§ 65.11 Circumvention and prohibited activities.

- (a) **Circumvention.**
 - (1) No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to, the following:
 - (1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere; and
 - (2) The fragmentation of an operation for the purpose of avoiding regulation by a relevant standard.

(b) **Prohibited activities.**

- (1) No owner or operator subject to the provisions of this part shall operate any regulated source in violation of the requirements of this part except under the following provisions:
 - (i) An extension or waiver of compliance granted by the Administrator under an applicable part; or
 - (ii) An extension of compliance granted under an applicable part by a State with an approved permit program; or
 - (iii) An exemption from compliance granted by the President under section 112(i)(4) of the Act.
- (2) After the effective date of an approved permit program in a State, no owner or operator of a regulated source in that State who is required under an applicable part to obtain a title V permit shall operate such source except in compliance with the provisions of this part and the applicable requirements of the permit program in that State.
- (3) An owner or operator of a regulated source who is subject to an emission standard promulgated under this part or a referencing part shall comply with the requirements of that standard by the date(s) established in the applicable subpart(s) (including this subpart) regardless of whether the following criteria are met:
 - (i) A title V permit has been issued to that source; or
 - (ii) If a title V permit has been issued to that source, whether such permit has been revised or modified to incorporate the emission standard.

- (c) **Severability.** Notwithstanding any requirement incorporated into a title V permit obtained by an owner or operator subject to the provisions of this part, the provisions of this part are federally enforceable.

§ 65.12 Delegation of authority.

- (a) In delegating implementation and enforcement authority to a State under sections 111(c) and 112(l) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Authorities that will not be delegated to States: §§ 65.8, 65.46, 65.102, 65.156(b)(l)(ii), and 65.158(a)(2)(ii).

§ 65.13 Incorporation by reference.

- (a) The materials listed in this section are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding addresses noted in paragraph (b) of this section, and all are available for inspection or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html; at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M Street, SW., Washington, DC; and at the EPA Library (MD-35), U.S. EPA, Research Triangle Park, North Carolina.

- (b) The materials listed in this paragraph (b) are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.
- (1) ASTM D1946-77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved December 14, 2000 for §§ 65.64(e)(2) and 65.147(a)(4)(i) and (b)(3)(ii).
- (2) ASTM D2382-76, Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method). IBR approved December 14, 2000 for §§ 65.64(e)(1) and 65.147(b)(3)(ii).

[65 FR 78285, Dec. 14, 2000, as amended at 69 FR 18803, Apr. 9, 2004]

§ 65.14 Addresses.

- (a) All requests, reports, applications, notifications, and other communications submitted pursuant to this part, except as specified under § 65.5(g)(1), shall be sent to the Administrator at the appropriate EPA Regional Office indicated in the following list:

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont) Director, Enforcement and Compliance Assurance Division, U.S. EPA Region I, 5 Post Office Square—Suite 100 (04-2), Boston, MA 02109-3912, Attn: Air Compliance Clerk.

Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 290 Broadway, New York, New York 10007.

Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 841 Chestnut Building, Philadelphia, Pennsylvania 19107.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 61 Forsyth Street, Atlanta, Georgia 30303.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air Management Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Compliance Assurance and Enforcement Division; U.S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Mail Code 6ECD, Dallas, Texas 75270-2102.

Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 999 18th Street, Suite 500, Denver, Colorado 80295.

Region IX (Arizona, California, Hawaii, Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau), Director, Air Division, U.S. Environmental Protection Agency, 75 Hawthorne Street, San Francisco, CA 94105.

Region X (Alaska, Oregon, Idaho, Washington), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle, Washington 98101.

(b) All information required to be submitted to the Administrator under this part shall also be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act. The mailing addresses for State agencies are listed as follows:

- (1) **Alabama.** Air Pollution Control Division, Air Pollution Control Commission, 645 S. McDonough Street, Montgomery, Alabama 36104.
- (2) **Alaska.** Department of Environmental Conservation, 3220 Hospital Drive, Juneau, Alaska 99811.
- (3) **Arizona.** Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, AZ 85007.
- (4) **Arkansas.** Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, Arkansas 72209.
- (5) **California.**
 - (i) Amador County Air Pollution Control District, 12200-B Airport Road, Jackson, CA 95642.
 - (ii) Antelope Valley Air Quality Management District, 43301 Division Street, Suite 206, Lancaster, CA 93535.
 - (iii) Bay Area Air Quality Management District, 939 Ellis Street, San Francisco, CA 94109.
 - (iv) Butte County Air Quality Management District, 2525 Dominic Drive, Suite J, Chico, CA 95928.
 - (v) Calaveras County Air Pollution Control District, 891 Mountain Ranch Road, San Andreas, CA 95249.
 - (vi) Colusa County Air Pollution Control District, 100 Sunrise Blvd., Suite A-3, Colusa, CA 95932-3246.
 - (vii) El Dorado County Air Quality Management District, 2850 Fairlane Court, Bldg. C, Placerville, CA 95667-4100.
 - (viii) Eastern Kern Air Pollution Control District, 2700 "M" Street, Suite 302, Bakersfield, CA 93301-2370.
 - (ix) Feather River Air Quality Management District, 1007 Live Oak Blvd., Suite B-3, Yuba City, CA 95991.
 - (x) Glenn County Air Pollution Control District, 720 N. Colusa Street, P.O. Box 351, Willows, CA 95988-0351.

- (xi) Great Basin Unified Air Pollution Control District, 157 Short Street, Suite 6, Bishop, CA 93514-3537.
- (xii) Imperial County Air Pollution Control District, 150 South Ninth Street, El Centro, CA 92243-2801.
- (xiii) Lake County Air Quality Management District, 885 Lakeport Blvd., Lakeport, CA 95453-5405.
- (xiv) Lassen County Air Pollution Control District, 707 Nevada Street, Suite 1, Susanville, CA 96130.
- (xv) Mariposa County Air Pollution Control District, P.O. Box 5, Mariposa, CA 95338.
- (xvi) Mendocino County Air Quality Management District, 306 E. Gobbi Street, Ukiah, CA 95482-5511.
- (xvii) Modoc County Air Pollution Control District, 619 North Main Street, Alturas, CA 96101.
- (xviii) Mojave Desert Air Quality Management District, 14306 Park Avenue, Victorville, CA 92392-2310.
- (xix) Monterey Bay Unified Air Pollution Control District, 24580 Silver Cloud Court, Monterey, CA 93940.
- (xx) North Coast Unified Air Quality Management District, 2300 Myrtle Avenue, Eureka, CA 95501-3327.
- (xxi) Northern Sierra Air Quality Management District, 200 Litton Drive, Suite 320, P.O. Box 2509, Grass Valley, CA 95945-2509.
- (xxii) Northern Sonoma County Air Pollution Control District, 150 Matheson Street, Healdsburg, CA 95448-4908.
- (xxiii) Placer County Air Pollution Control District, 3091 County Center Drive, Suite 240, Auburn, CA 95603.
- (xxiv) Sacramento Metropolitan Air Quality Management District, 777 12th Street, Third Floor, Sacramento, CA 95814-1908.
- (xxv) San Diego County Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131-1649.
- (xxvi) San Joaquin Valley Air Pollution Control District, 1990 E. Gettysburg, Fresno, CA 93726.
- (xxvii) San Luis Obispo County Air Pollution Control District, 3433 Roberto Court, San Luis Obispo, CA 93401-7126.
- (xxviii) Santa Barbara County Air Pollution Control District, 260 North San Antonio Road, Suite A, Santa Barbara, CA 93110-1315.
- (xxix) Shasta County Air Quality Management District, 1855 Placer Street, Suite 101, Redding, CA 96001-1759.
- (xxx) Siskiyou County Air Pollution Control District, 525 So. Foothill Drive, Yreka, CA 96097-3036.
- (xxxi) South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4182.
- (xxxii) Tehama County Air Pollution Control District, P.O. Box 8069 (1750 Walnut Street), Red Bluff, CA 96080-0038.
- (xxxiii) Tuolumne County Air Pollution Control District, 22365 Airport, Columbia, CA 95310.

- (xxxiv) Ventura County Air Pollution Control District, 669 County Square Drive, 2nd Floor, Ventura, CA 93003-5417.
- (xxxv) Yolo-Solano Air Quality Management District, 1947 Galileo Court, Suite 103, Davis, CA 95616-4882.
- (6) **Colorado.** Department of Health, Air Pollution Control Division, 4210 East 11th Avenue, Denver, Colorado 80220.
- (7) **Connecticut.** Compliance Analysis and Coordination Unit, Bureau of Air Management, Department of Energy and Environmental Protection, 79 Elm Street, 5th Floor, Hartford, CT 06106-5127.
- (8) **Delaware.** Delaware Department of Natural Resources and Environmental Control, Tatnall Building, P.O. Box 1401, Dover, Delaware 19901.
- (9) **Florida.** Florida Bureau of Air Quality Management, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32301.
- (10) **Georgia.** Environmental Protection Division, Department of Natural Resources, 270 Washington Street, SW., Atlanta, Georgia 30334.
- (11) **Hawaii.** Clean Air Branch, Hawaii Department of Health, 919 Ala Moana Blvd., Suite 203, Honolulu, HI 96814.
- (12) **Idaho.** Idaho Division of Environmental Quality 601 Pole Line Rd. Ste. # 2 Twin Falls, Idaho 83301.
- (13) **Illinois.** Illinois Environmental Protection Agency—Bureau of Air 1340 North Ninth St., Springfield Illinois 62702 1021 North Grand Avenue East (mailing address) P.O. Box 19276 62794-9276.
- (14) **Indiana.** Indiana Department of Environmental Management, 105 South Meridian Street, P.O. Box 6015, Indianapolis, Indiana 46206.
- (15) **Iowa.** Iowa Department of Natural Resources, Environmental Protection Division, Henry A. Wallace Building, 900 East Grand, Des Moines, Iowa 50319.
- (16) **Kansas.** Kansas Department of Health and Environment, Bureau of Air Quality and Radiation Control, Forbes Field, Topeka, Kansas 66620.
- (17) **Kentucky.** Kentucky Division of Air Pollution Control, Department for Natural Resources and Environmental Protection, U.S. 127, Frankfort, Kentucky 40601.
- (18) **Louisiana.** Program Administrator, Air Quality Division, Louisiana Department of Environmental Quality, P.O. Box 44096, Baton Rouge, Louisiana 70804.
- (19) **Maine.** Maine Department of Environmental Protection, Bureau of Air Quality, 17 State House Station, Augusta, ME 04333-0017.
- (20) **Maryland.** Bureau of Air Quality and Noise Control, Maryland State Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, Maryland 21201.
- (21) **Massachusetts.** Massachusetts Department of Environmental Protection, Division of Air and Climate Programs, One Winter Street, Boston, MA 02108.
- (22) **Michigan.** Air Pollution Control Division, Michigan Department of Natural Resources, Stevens T. Mason Building, 8th Floor, Lansing, Michigan 48926.

- (23) **Minnesota.** Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road, St. Paul, Minnesota 55155.
- (24) **Mississippi.** Bureau of Pollution Control, Department of Natural Resources, P.O. Box 10385, Jackson, Mississippi 39209.
- (25) **Missouri.** Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, Missouri 65102.
- (26) **Montana.** Department of Health and Environmental Services, Air Quality Bureau, Cogswell Building, Helena, Montana 59601.
- (27) **Nebraska.** Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, Nebraska 68509.
- (28) **Nevada.** Nevada Division of Environmental Protection, 901 South Stewart Street, Suite 4001, Carson City, NV 89701-5249.
- (29) **New Hampshire.** New Hampshire Department of Environmental Services, Air Resources Division, 29 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095.
- (30) **New Jersey.** New Jersey Department of Environmental Protection, John Fitch Plaza, P.O. Box 2807, Trenton, New Jersey 08625.
- (31) **New Mexico.** Director, New Mexico Environmental Improvement Division, Health and Environment Department, 1190 St. Francis Drive, Santa Fe, New Mexico 87503.
- (32) **New York.** New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233, Attention: Division of Air Resources.
- (33) **North Carolina.** North Carolina Environmental Management Commission, Department of Environment and Natural Resources, Division of Air Quality, P.O. Box 29580, Raleigh, North Carolina 27626-0580.
- (34) **North Dakota.** State Department of Health and Consolidated Laboratories, Division of Environmental Engineering, State Capitol, Bismarck, North Dakota 58505.
- (35) **Ohio.** Ohio Environmental Protection Agency, Central District Office, Air Pollution Unit, P.O. Box 1049, Columbus, Ohio 43266-0149.
- (36) **Oklahoma.** Oklahoma State Department of Health, Air Quality Service, P.O. Box 53551, Oklahoma City, Oklahoma 73152.
- (37) **Oregon.** Department of Environmental Quality, Yeon Building, 522 SW. Fifth, Portland, Oregon 97204.
- (38) **Pennsylvania.** Department of Environmental Resources, Post Office Box 2063, Harrisburg, Pennsylvania 17120.
- (39) **Rhode Island.** Rhode Island Department of Environmental Management, Office of Air Resources, 235 Promenade Street, Providence, RI 02908.
- (40) **South Carolina.** Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201.
- (41) **South Dakota.** Department of Water and Natural Resources, Office of Air Quality and Solid Waste, Joe Foss Building, 523 East Capitol, Pierre, South Dakota 57501-3181.

- (42) **Tennessee.** Division of Air Pollution Control, Tennessee Department of Public Health, 256 Capitol Hill Building, Nashville, Tennessee 37219.
- (43) **Texas.** Texas Natural Resource Conservation Commission, P.O. Box 13087, Austin, Texas 78711-3087.
- (44) **Utah.** Department of Health, Bureau of Air Quality, 288 North 1460 West, P.O. Box 16690, Salt Lake City, Utah 84116-0690.
- (45) **Vermont.** Agency of Natural Resources, Department of Environmental Conservation, Air Quality and Climate Division, Davis 2, One National Life Drive, Montpelier, VT 05620-3802.
- (46) **Virginia.** Virginia State Air Pollution Control Board, Room 1106, Ninth Street Office Building, Richmond, Virginia 23219.
- (47) **Washington.** Department of Ecology, Olympia, Washington 98504.
- (48) **West Virginia.** Air Pollution Control Commission, 1558 Washington Street, East, Charleston, West Virginia 25311.
- (49) **Wisconsin.** Wisconsin Department of Natural Resources, P.O. Box 7921, Madison, Wisconsin 53707.
- (50) **Wyoming.** Wyoming Department of Environmental Quality Air Division, 122 West 25th St.—4th Floor, Cheyenne, Wyoming 82002.

[65 FR 78285, Dec. 14, 2000, as amended at 75 FR 69353, Nov. 12, 2010; 76 FR 49673, Aug. 11, 2011; 78 FR 37977, June 25, 2013; 84 FR 34069, July 17, 2019; 84 FR 44230, Aug. 23, 2019]

§§ 65.15-65.19 [Reserved]

Table 1 to Subpart A of Part 65—Applicable 40 CFR Parts 60, 61, and 63 General Provisions

A. 40 CFR part 60, subpart A provisions for referencing subparts Ka, Kb, VV, DDD, III, NNN, and RRR	
	§ 60.1,
	§ 60.2,
	§ 60.5,
	§ 60.6,
	§ 60.7(a)(1), and (a)(4),
	§ 60.14,
	§ 60.15,
	§ 60.16
B. 40 CFR part 61, subpart A provisions for referencing subparts Y, V, and BB	
	§ 61.01,
^a These provisions do not apply to equipment leaks.	
^b The notifications specified in 40 CFR 63.9(b)(4)(i) and 63.9(b)(5) shall be submitted at the times specified in this part 65.	

§ 61.02,
§ 61.05,
§ 61.06,
§ 61.07,
§ 61.08,
§ 61.10(b), and (c),
§ 61.11, § 61.15
C. 40 CFR part 63, subpart A provisions for referencing subparts G and H
§ 63.1(a)(1), (a)(2), (a)(3), (a)(13), (a)(14), (b)(2) and (c)(4)
§ 63.2
§ 63.5 (a)(1), (a)(2), (b), (d)(1)(ii), (d)(3)(i), ^a (d)(3)(iii), ^a (d)(3)(iv), ^a (d)(3)(v), ^a (d)(3)(vi), ^a (d)(4), (e), (f)(1), and (f)(2)
§ 63.6 (a), (b)(3), (c)(5), (i)(1), (i)(2), (i)(4)(i)(A), (i)(5) through (i)(14), (i)(16) and (j)
§ 63.9(a)(2), (b)(4)(i), ^b (b)(4)(ii), (b)(4)(iii), (b)(5), ^b (c) and (d)
§ 63.10(d)(4)
§ 63.12(b)

^a These provisions do not apply to equipment leaks.

^b The notifications specified in 40 CFR 63.9(b)(4)(i) and 63.9(b)(5) shall be submitted at the times specified in this part 65.

Table 2 to Subpart A of Part 65—Applicable Referencing Subpart Provisions

If you have been referenced from * * *	You must comply with * * *
40 CFR part 60, subpart Ka	60.110a, 60.111a, and 60.115a
40 CFR part 60, subpart Kb	60.110b, 60.111b, 60.116b(c), (e), (f)(1), and (g)
40 CFR part 60, subpart VV	60.480, 60.481, 60.482-1(a), 60.485(d), (e), and (f), and 60.486(i) and (j), 60.488, and 60.489
40 CFR part 60, subpart DDD	60.560(a), (b) and (d) through (j), 60.561, 60.562-1, 60.562-2, and 60.565(g)(1)
40 CFR part 60, subpart III	60.610(a), (b) and (d), 60.611, 60.616, 60.617
40 CFR part 60, subpart NNN	60.660(a), (b), (c)(1) through (c)(3), (c)(5), (d), 60.661, 60.666, and 60.667
40 CFR part 60, subpart RRR	60.700(a), (b), (c)(1), (c)(3), (c)(5), (c)(6), (c)(7), (d), 60.701, 60.706, 60.707
40 CFR part 61, subpart V	61.240, 61.241, 61.245(d), 61.246(i) and (j), and 61.247(a) and (f)

If you have been referenced from * * *	You must comply with * * *
40 CFR part 61, subpart Y	61.270, 61.271(d)(2), and 61.274(a)
40 CFR part 61, subpart BB	61.300 and 61.301
40 CFR part 63, subpart G For process vents, group 1 storage vessels, and group 1 transfer racks	63.100, 63.101, 63.104 and 63.105 of subpart F and 63.110 and 63.111 of subpart G
40 CFR part 63, subpart H	63.100, 63.101, 63.104 and 63.105 of subpart F, and 63.160, 63.161, 63.180(d) of subpart H

Table 3 to Subpart A of Part 65—Detection Sensitivity Levels (grams per hour)

Monitoring Frequency per Subpart ^a	Detection Sensitivity Level
Bi-Monthly	60
Semi-Quarterly	85
Monthly	100

^a When this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table, in lieu of the monitoring frequency specified in the applicable subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

[73 FR 78219, Dec. 22, 2008]

Subpart B [Reserved]

Subpart C—Storage Vessels

§ 65.40 Applicability.

- (a) The provisions of this subpart and of subpart A of this part apply to control of regulated material emissions from surge control vessels, bottoms receivers, and other storage vessels where a referencing subpart references the use of this subpart for such emissions control.
- (b) If a physical or 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 no longer comply with the provisions of this subpart. Instead, the owner or operator shall comply with any applicable provisions of the referencing subpart.

§ 65.41 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart A of this part. If a term is defined in both subpart A of this part and in other subparts that reference the use of this subpart, the term shall have the meaning given in subpart A of this part for purposes of this subpart.

§ 65.42 Control requirements.

- (a) For each storage vessel to which this subpart applies, the owner or operator shall comply with the requirements of paragraph (b) or (c) of this section.
- (b) For each storage vessel storing a liquid for which the maximum true vapor pressure of the total regulated material in the liquid is less than 76.6 kilopascals (10.9 pounds per square inch), the owner or operator shall reduce regulated material emissions to the atmosphere as provided in any one of the paragraphs (b)(1) through (7) of this section.
 - (1) **Internal floating roof (IFR).** Operate and maintain a fixed roof and internal floating roof meeting the requirements of § 65.43.
 - (2) **External floating roof (EFR).** Operate and maintain an external floating roof meeting the requirements of § 65.44.
 - (3) **EFR converted to IFR.** Operate and maintain an external floating roof converted to an internal floating roof meeting the requirements of § 65.45.
 - (4) **Closed vent system and flare.** Operate and maintain a closed vent system and flare as specified in § 65.142(a)(1). Periods of planned routine maintenance of the flare during which the flare does not meet the specifications of § 65.147 shall not exceed 240 hours per year. The specifications and requirements in § 65.147 for flares do not apply during periods of planned routine maintenance or during a control system malfunction. The owner or operator shall report the periods of planned routine maintenance as specified in § 65.166(d).
 - (5) **Closed vent system and control device.** Operate and maintain a closed vent system and control device as specified in the following and § 65.142(a)(2):
 - (i) Except as provided in paragraph (b)(5)(ii) of this section, the control device shall be designed and operated to reduce inlet emissions of regulated material by 95 percent or greater.
 - (ii) For owners or operators referenced to this part from 40 CFR part 63, subpart G, and if the owner or operator of a storage vessel can demonstrate that a control device installed on the storage vessel on or before December 31, 1992 is designed to reduce inlet emissions of total organic HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total organic HAP by 90 percent or greater.
 - (iii) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph (b)(5)(i) or (ii) of this section, shall not exceed 240 hours per year. The owner or operator shall report the periods of planned routine maintenance as specified in § 65.166(d).
 - (iv) The requirements in paragraph (b)(5)(i) of this section for control devices do not apply during periods of planned routine maintenance or during a control system malfunction.

- (6) **Route to process or fuel gas system.** Route the emissions to a process or a fuel gas system as specified in § 65.142(a)(3). Whenever the owner or operator bypasses the fuel gas system or process, the owner or operator shall comply with the recordkeeping requirement in § 65.163(b)(3). Bypassing is permitted if the owner or operator complies with one or more of the following conditions:
 - (i) The liquid level in the storage vessel is not increased;
 - (ii) The emissions are routed through a closed vent system to a control device complying with paragraph (b)(4) or (5) of this section; or
 - (iii) The total aggregate amount of time during which the emissions bypass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except startups/shutdowns/malfunctions or product changeovers of flexible operation units and periods when the storage vessel has been emptied and degassed), does not exceed 240 hours.
- (7) **Equivalent requirements.** Comply with an equivalent to the requirements in any one of the paragraphs (b)(1) through (6) of this section, as provided in § 65.46.
- (c) For each storage vessel storing a liquid for which the maximum true vapor pressure of the total regulated material in the liquid is greater than or equal to 76.6 kilopascals (10.9 pounds per square inch), the owner or operator shall meet the requirements in paragraph (b)(4), (5), or (6) of this section, or equivalent as provided in § 65.46.

§ 65.43 Fixed roof with an internal floating roof (IFR).

- (a) **IFR design requirements.** The owner or operator who elects to control storage vessel regulated material emissions by using a fixed roof and an internal floating roof shall comply with the design requirements in paragraphs (a)(1) through (4) of this section.
 - (1) The internal floating roof shall be designed to float on the stored liquid surface except when the floating roof must be supported by the leg supports.
 - (2) Except as provided in paragraph (a)(3) of this section, the internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the floating roof edge and shall consist of one of the following devices:
 - (i) A liquid-mounted seal.
 - (ii) A metallic shoe seal.
 - (iii) Two continuous seals mounted one above the other. The lower seal may be vapor-mounted.
 - (3) If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, paragraph (a)(2) of this section does not apply until the next time the storage vessel is emptied and degassed, or by April 22, 2004, whichever occurs first.
 - (4) Except as provided in paragraph (a)(4)(viii) of this section, each internal floating roof shall meet the following specifications:
 - (i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the stored liquid surface.

- (ii) Except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains, each opening shall be equipped with a gasketed cover or gasketed lid.
- (iii) Each penetration of the internal floating roof shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
- (iv) Each automatic bleeder vent and rim space vent shall be gasketed.
- (v) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
- (vi) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (vii) Covers on each access hatch and each gauge float well shall be designed to be bolted or fastened when they are closed.
- (viii) If the internal floating roof does not meet any one of the specifications listed in paragraphs (a)(4)(i) through (vii) of this section as of December 31, 1992, the requirement for meeting those specifications does not apply until the next time the storage vessel is emptied and degassed, or by April 22, 2004, whichever occurs first.

(b) **IFR operational requirements.** The owner or operator using a fixed roof and an internal floating roof shall comply with the following operational requirements:

- (1) The internal floating roof shall float on the stored liquid surface at all times except when the floating roof must be supported by the leg supports.
- (2) When the floating roof is resting on the leg supports, the process of filling or refilling shall be continuous and shall be accomplished as soon as practical and the owner or operator shall maintain the record specified in § 65.47(e).
- (3) Automatic bleeder vents are to be set to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (4) Each cover, access hatch, gauge float well, or lid on any opening in the internal floating roof shall be maintained in a closed position at all times (i.e., no visible gaps) except when the device is in actual use. Prior to filling the storage vessel, rim space vents are to be set to open only when the internal floating roof is not floating, or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(c) **IFR inspection requirements.** To demonstrate compliance, the owner or operator shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) according to paragraphs (c)(1) through (4) of this section and maintain records of the IFR inspection results as specified in § 65.47(c)(1).

- (1) **Single seal.** For vessels equipped with a single-seal system, the owner or operator shall perform the following inspections:
 - (i) Visually inspect for IFR type A failures, the internal floating roof, and the seal through manholes and roof hatches on the fixed roof no less frequently than once every 12 months.

- (ii) Visually inspect for IFR type B failures, the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied, but no less frequently than once every 10 years.
- (2) **Double seal.** For vessels equipped with two continuous seals mounted one above the other, the owner or operator shall perform either the inspection required in paragraph (c)(2)(i) of this section or the inspections required in paragraph (c)(2)(ii) of this section:
 - (i) Visually inspect for IFR type B failures, the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied, but no less frequently than once every 5 years; or
 - (ii) Visually inspect the internal floating roof and the other components as specified in the following:
 - (A) For IFR type A failures, inspect the secondary seal through manholes and roof hatches on the fixed roof no less frequently than once every 12 months; and
 - (B) For IFR type B failures, inspect the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied, but no less frequently than once every 10 years.
- (3) For inspections to determine if any IFR type B failures are present as required by paragraphs (c)(1)(ii), (c)(2)(i), and (c)(2)(ii)(B) of this section, the owner or operator shall comply with the refilling notification requirements specified in § 65.48(c)(1).
- (4) After installing the control equipment required to comply with § 65.42(b)(1) or (3), visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) prior to filling the storage vessel with regulated material. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric, or defects in the internal floating roof, the owner or operator shall repair the items before filling the storage vessel.
- (d) **IFR repair requirements.** The owner or operator shall repair any observed or determined failures according to paragraphs (d)(1) and (2) of this section:
 - (1) If an IFR type A failure is observed, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If the failure cannot be repaired within 45 calendar days or if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each and keep the records specified in § 65.47(d).
 - (2) If an IFR type B failure is determined, the owner or operator shall repair the items and comply with the refilling notification requirements of § 65.48(c)(1) before refilling the storage vessel with regulated material.

§ 65.44 External floating roof (EFR).

- (a) **EFR design requirements.** The owner or operator who elects to control storage vessel regulated material emissions by using an external floating roof shall comply with the design requirements listed in paragraphs (a)(1) through (3) of this section.
 - (1) The external floating roof shall be designed to float on the stored liquid surface except when the floating roof must be supported by the leg supports.

- (2) The external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge.
 - (i) Except as provided in paragraph (a)(2)(iii) of this section, the closure device is to consist of two continuous seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.
 - (ii) Except as provided in paragraph (a)(2)(iv) of this section, the primary seal shall be either a metallic shoe seal or a liquid-mounted seal.
 - (iii) If the external floating roof is equipped with a liquid-mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal in paragraph (a)(2)(i) of this section does not apply until the next time the storage vessel is emptied and degassed, or by April 22, 2004, whichever occurs first.
 - (iv) If the external floating roof is equipped with a vapor-mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid-mounted or metallic shoe primary seal in paragraph (a)(2)(ii) of this section does not apply until the next time the storage vessel is emptied and degassed, or by April 22, 2004, whichever occurs first.
- (3) The external floating roof shall meet the following specifications:
 - (i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the noncontact external floating roof shall provide a projection below the stored liquid surface except as provided in paragraph (a)(3)(xiii) of this section.
 - (ii) Covers on each access hatch and each gauge float well shall be designed to be bolted or fastened when they are closed.
 - (iii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening shall be equipped with a gasketed cover, seal, or lid.
 - (iv) Automatic bleeder vents and rim space vents shall be equipped with a gasket.
 - (v) Each roof drain that empties into the stored liquid shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.
 - (vi) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.
 - (vii) Except for antirotational devices equipped with a welded cap, each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.
 - (viii) Each slotted guide pole shall be equipped with a gasketed float or other device that closes off the stored liquid surface from the atmosphere.
 - (ix) Each gauge hatch/sample well shall be equipped with a gasketed cover.
 - (x) Where a metallic shoe seal is in use as the primary seal, one end of the metallic shoe shall be designed to extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters (24 inches) above the stored liquid surface.
 - (xi) The secondary seal shall be designed to be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall.

- (xii) For the primary and secondary seals, there shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
- (xiii) If each opening in a noncontact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the next time the storage vessel is emptied and degassed, or by April 22, 2004, whichever occurs first.

(b) **EFR operational requirements.** The owner or operator using an external floating roof shall comply with the following operational requirements:

- (1) The external floating roof shall float on the stored liquid surface at all times except when the floating roof must be supported by the leg supports.
- (2) When the floating roof is resting on the leg supports, the process of filling or refilling shall be continuous and shall be accomplished as soon as practical, and the owner or operator shall maintain the record specified in § 65.47(e).
- (3) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening shall be maintained in a closed position (*i.e.*, no visible gap) at all times except when the device is in actual use.
- (4) Covers on each access hatch and each gauge float well shall be bolted or fastened when they are closed.
- (5) Automatic bleeder vents are to be set to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (6) Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
- (7) The cap on the end of each unslotted guide pole shall be closed at all times except when gauging the stored liquid level or taking samples of the stored liquid.
- (8) The cover on each gauge hatch/sample well shall be closed at all times except when the hatch or well must be open for access.
- (9) Except during the inspections required by paragraph (c) of this section, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.

(c) **EFR inspection requirements.** To demonstrate compliance for an external floating roof vessel, the owner or operator shall use the procedures in paragraphs (c)(4) through (9) of this section for seal gaps according to the frequency specified in paragraphs (c)(1) through (3) of this section and meet the requirements of paragraph (c)(10) of this section.

- (1) Measurements of gaps between the vessel wall and the primary seal shall be performed no less frequently than once every 5 years and at the times specified in paragraphs (c)(1)(i) and (ii) of this section. The owner or operator shall maintain records of the EFR seal gap measurements as specified in § 65.47(c)(2).
 - (i) During the hydrostatic testing of the vessel, by initial startup, or within 90 days of the initial fill with regulated material.

- (ii) For an external floating roof vessel equipped with a liquid-mounted or metallic shoe primary seal and without a secondary seal as provided for in paragraph (a)(2)(iii) of this section, measurements of gaps between the vessel wall and the primary seal shall be performed at least once per year until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal and according to the frequency specified in paragraphs (c)(1) through (3) of this section thereafter.
- (2) Measurements of gaps between the vessel wall and the secondary seal shall be performed no less frequently than once per year and within 90 days of the initial fill with regulated material, within 90 days of installation of the secondary seal, or by initial startup. The owner or operator shall maintain records of the EFR seal gap measurements as specified in § 65.47(c)(2).
- (3) If any storage vessel ceases to store regulated material for a period of 1 year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 days of the vessel being refilled with regulated material. The owner or operator shall maintain records of the EFR seal gap measurements as specified in § 65.47(c)(2).
- (4) If the tank contains regulated material, all primary seal inspections or gap measurements that require the removal or dislodging of the secondary seal shall be accomplished as soon as possible, and the secondary seal shall be replaced as soon as possible.
- (5) The owner or operator shall notify the Administrator 30 days before any EFR seal gap measurement as specified in § 65.48(c)(2).
- (6) Except as provided in paragraph (d) of this section, the owner or operator shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the following procedures:
 - (i) Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.
 - (ii) Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where a 0.32 centimeter ($\frac{1}{8}$ inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.
 - (iii) The total surface area of each gap described in paragraph (c)(6)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.
- (7) The owner or operator shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The owner or operator shall include the calculations in the record of the seal gap measurement as specified in § 65.47(c)(2). For metallic shoe primary seals or liquid-mounted primary seals, the accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter (10.0 square inches per foot of vessel diameter) and the width of any portion of any gap shall not exceed 3.81 centimeters (1.50 inches).

- (8) The owner or operator shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The owner or operator shall include the calculations in the record of the seal gap measurement as specified in § 65.47(c)(2). The accumulated area of gaps between the vessel wall and the secondary seal used in combination with a metallic shoe seal or liquid-mounted primary seal shall not exceed 21.2 square centimeters per meter of vessel diameter (1.00 square inch per foot of vessel diameter) and the width of any portion of any gap shall not exceed 1.27 centimeters (0.50 inch). The secondary seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (c)(1) of this section.
- (9) If the owner or operator determines that it is unsafe to perform the seal gap measurements or to inspect the vessel to determine compliance because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with one of the following requirements:
 - (i) The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe; or
 - (ii) The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each and comply with the recordkeeping requirements in § 65.47(d).
- (10) The owner or operator shall visually inspect for EFR failures, the external floating roof, the primary seal, secondary seal, and fittings prior to initial filling and each time the vessel is emptied (including initially before the vessel is filled with regulated material), shall maintain records of the EFR inspection results as specified in § 65.47(c)(1), and shall comply with the refilling notification requirements specified in § 65.48(c)(1).

(d) *EFR repair requirements.*

- (1) The owner or operator shall repair conditions that do not meet seal gap specifications listed in paragraphs (c)(7) and (8) of this section or any EFR failure observed by the inspection required by paragraph (c)(10) of this section no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If the vessel cannot be repaired or emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each and comply with the recordkeeping requirements in § 65.47(d).
- (2) If an EFR failure is observed by the inspection required by paragraph (c)(10) of this section, the owner or operator shall repair the items as necessary so that none of the conditions specified in paragraph (c)(10) of this section exist before filling or refilling the storage vessel with regulated material.

§ 65.45 External floating roof converted into an internal floating roof.

The owner or operator who elects to control storage vessel regulated material emissions by using an external floating roof converted into an internal floating roof shall comply with the internal floating roof requirements of § 65.43 except § 65.43(a)(3), (b)(2), and (b)(3) and the external floating roof deck fitting requirements of § 65.44 except § 65.44(a)(1), (a)(2), (b)(1), (b)(8), (b)(9), (c), and (d), including the recordkeeping and reporting provisions referenced therein.

§ 65.46 Alternative means of emission limitation.

Any person seeking permission to use an alternative means of compliance under this section shall use the procedures of § 65.8.

§ 65.47 Recordkeeping provisions.

- (a) **Retention time.** Each owner or operator of a storage vessel subject to this subpart shall meet the requirements of § 65.4, except the record specified in paragraph (b) of this section shall be kept as long as the storage vessel is in operation.
- (b) **Vessel dimensions and capacity.** Each owner or operator of a storage vessel subject to this subpart shall keep readily accessible records showing the dimensions of the storage vessel and an analysis of the capacity of the storage vessel.
- (c) **Inspection results.** The owner or operator shall keep the records specified in paragraphs (c)(1) and (2) of this section.
 - (1) For each IFR or EFR inspection required by § 65.43(c)(1) and (2), or § 65.44(c)(10), respectively, a record containing the following information, as appropriate:
 - (i) In the event that no IFR type A failure, IFR type B failure, or EFR failure is observed, a record showing that the inspection was performed. The record shall identify the storage vessel on which the inspection was performed, the date the storage vessel was inspected, and references indicating which items were inspected.
 - (ii) In the event that an IFR type A failure, IFR type B failure, or EFR failure is observed, a record that identifies the storage vessel on which the inspection was performed, the date the storage vessel was inspected, a description of the failure and of the repair made, the date the vessel was emptied (if applicable), and the date that the repair was made. As specified in § 65.48(b)(1), the owner or operator shall include this record in the periodic report.
 - (2) For each EFR seal gap measurement required by § 65.44(c)(1), (2), or (3), a record describing the results of the measurement. The record shall identify the vessel on which the measurement was performed, shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 65.44(c)(7) and (8), and shall meet the following two additional requirements, as appropriate:
 - (i) In the event that the seal gap measurements do conform to the specifications in § 65.44(c)(7) and (8), the owner or operator shall submit the information specified in § 65.48(b)(2)(i) in the periodic report.
 - (ii) In the event that the seal gap measurements do not conform to the specifications in § 65.44(c)(7) and (8), the owner or operator shall also keep a description of the repairs that were made, the date the repairs were made, and the date the storage vessel was emptied and shall include a report of the seal gap measurement results in the periodic report as specified in § 65.48(b)(2)(ii).
- (d) **Emptying and repairing extension.** The owner or operator who elects to utilize an extension in emptying a storage vessel for purposes of repair shall prepare by the initiation of the extension the following documentation, as appropriate, of the decision to utilize an extension:

- (1) For an extension pursuant to § 65.43(d)(1) or § 65.44(d)(1), a description of the failure, documentation that alternative storage capacity is unavailable, and a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical. As specified in § 65.48(b)(1)(i), the owner or operator shall include this information in the periodic report.
- (2) For an extension pursuant to § 65.44(c)(9), an explanation of why it was unsafe to perform the inspection or seal gap measurement, documentation that alternate storage capacity is unavailable, and a schedule of actions that will ensure that the vessel will be emptied as soon as practical. As specified in § 65.48(b)(3), the owner or operator shall include this information in the periodic report.
- (e) **Floating roof set on its legs.** The owner or operator shall maintain a record for each storage vessel subject to § 65.43(b)(2) and § 65.44(b)(2) 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.

§ 65.48 Reporting provisions.

- (a) **Notification of initial startup.** If § 65.5(b) requires that a notification of initial startup be filed, then the content of the notification of initial startup shall at least include the information specified in § 65.5(b) and the identification of each storage vessel, its capacity, and the types of regulated material stored in the storage vessel.
- (b) **Periodic reports.** Report the information specified in paragraphs (b)(1) through (3) of this section, as applicable, in the periodic report specified in § 65.5(e).
 - (1) **Inspection results.** Report the following information for each inspection conducted in accordance with § 65.43(c) and § 65.44(c) in which an IFR or EFR failure is detected in the control equipment:
 - (i) If an IFR type A failure or an EFR failure is observed for vessels for which inspections are required under § 65.43(c)(1)(i), § 65.43(c)(2)(ii)(A), or § 65.44(c)(10), each report shall include the inspection results record listed in § 65.47(c)(1)(ii). If an extension is utilized in accordance with § 65.43(d)(1) or § 65.44(d)(1), the report shall include the records listed in § 65.47(c)(1)(ii) plus the documentation specified in § 65.47(d)(1).
 - (ii) If an IFR type B failure is observed for vessels for which inspections are required under § 65.43(c)(1)(ii), (c)(2)(i), or (c)(2)(ii)(B), each report shall include a copy of the records listed in § 65.47(c)(1)(ii).
 - (2) **Seal gap measurement results.**
 - (i) For each vessel whose seal gaps are measured during the reporting period, identify each seal gap measurement made in accordance with § 65.44(c) in which the requirements of § 65.44(c)(7) or (8) are met.
 - (ii) For each seal gap measurement made in accordance with § 65.44(c) in which the requirements of § 65.44(c)(7) or (8) are not met, from the records kept pursuant to § 65.47(c)(2), report the date of the measurements, results of the calculations, and note which seal gap measurements did not conform to the specifications in § 65.44(c)(7) and (8).
 - (3) **Extension documentation.** If an extension is utilized in accordance with § 65.44(c)(9), the owner or operator shall include the documentation specified in § 65.47(d)(2) in the next report required by § 65.5(e).

- (c) **Special notifications.** An owner or operator who elects to comply with § 65.43, § 65.44, or § 65.45 shall submit, as applicable, the reports specified in paragraphs (c)(1) and (2) of this section except as specified in paragraph (c)(3) of this section. Each written notification or report shall also include the information specified in § 65.5(f).
- (1) **Refilling notification.** In order to afford the Administrator the opportunity to have an observer present, notify the Administrator prior to refilling of a storage vessel that has been emptied. If the storage vessel is equipped with an internal floating roof as specified in § 65.43, an external floating roof as specified in § 65.44, or an external floating roof converted to an internal floating roof as specified in § 65.45, the notification shall meet either of the following requirements, as applicable.
- (i) Notify the Administrator in writing at least 30 calendar days prior to the refilling of each storage vessel; or
- (ii) If the inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel, the owner or operator shall notify the Administrator as soon as practical, but no later than 7 calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.
- (2) **Seal gap measurement notification.** In order to afford the Administrator the opportunity to have an observer present during seal gap measurements, the owner or operator of a storage vessel equipped with an external floating roof as specified in § 65.44 shall meet either of the following notification requirements, as applicable:
- (i) Notify the Administrator in writing at least 30 calendar days in advance of any seal gap measurements; or
- (ii) If the seal gap measurements are not planned and the owner or operator could not have known about the seal gap measurements 30 calendar days in advance, the owner or operator shall notify the Administrator as soon as practical, but no later than 7 calendar days prior to the seal gap measurements. Notification may be made by telephone and immediately followed by written documentation demonstrating why the seal gap measurements were unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.
- (3) **Notification waiver.** Where a notification required by paragraphs (c)(1) or (2) of this section is sent to a delegated State or local agency, a copy of the notification to the Administrator is not required. A delegated State or local agency may waive the requirements for these notifications.
- (d) **Compliance certification.** For sources subject to the compliance certification provisions of title V, a recertification of continuous compliance with §§ 65.43(b)(1) and 65.44(b)(1) shall be based on the annual inspections required by § 65.43(c)(1)(i) and (c)(2)(ii)(A) and any observations made at other times when the roof is viewed.

§§ 65.49-65.59 [Reserved]

Subpart D—Process Vents

§ 65.60 Applicability.

The provisions of this subpart and of subpart A of this part apply to regulated material emissions from process vents where a referencing subpart references the use of this subpart.

§ 65.61 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart A of this part. If a term is defined in both subpart A of this part and in other subparts that reference the use of this subpart, the term shall have the meaning given in subpart A of this part for purposes of this subpart.

§ 65.62 Process vent group determination.

- (a) **Group status.** The owner or operator of a process vent shall determine the group status (i.e., Group 1, Group 2A, or Group 2B) for each process vent. Group 1 process vents require control, and Group 2A and 2B process vents do not. Group 2A process vents require parameter monitoring, and Group 2B process vents do not. The owner or operator shall report the group status of each process vent as specified in § 65.5(c)(2).
- (b) **Group 1.** A process vent is considered Group 1 if it meets at least one of the following specifications:
 - (1) The owner or operator designates the process vent as Group 1.
 - (2) At representative operating conditions expected to yield the lowest TRE index value for the process vent, the TRE index value is less than or equal to 1.0, the flow rate is greater than or equal to 0.011 standard cubic meter per minute (0.40 standard cubic foot per minute), and the concentration is greater than or equal to the applicable criterion in table 1 of this subpart. Procedures for determining the TRE index value, flow rate, and concentration are specified in § 65.64.
- (c) **Group 2A.** A process vent is considered Group 2A if, at representative operating conditions expected to yield the lowest TRE index value, it has a TRE index value of greater than 1.0 and less than or equal to 4.0, a flow rate of greater than or equal to 0.011 standard cubic meter per minute (0.40 standard cubic foot per minute), and a concentration greater than or equal to the applicable table 1 criterion. Procedures for determining the TRE index value, flow rate, and concentration are specified in § 65.64.
- (d) **Group 2B.** A process vent is considered Group 2B if, at representative operating conditions expected to yield the lowest TRE index value, it has a TRE index value of greater than 4.0; or a flow rate of less than 0.011 standard cubic meter per minute (0.40 standard cubic foot per minute); or a concentration less than the applicable criterion in table 1 of this subpart. Procedures for determining the TRE index value, flow rate, and concentration are specified in § 65.64.

§ 65.63 Performance and group status change requirements.

- (a) **Group 1 performance requirements.** Except for the additional requirement for halogenated vent streams as provided in paragraph (b) of this section, the owner or operator of a Group 1 process vent shall comply with the requirements of either paragraph (a)(1), (2), or (3) of this section.
 - (1) **Flare.** Reduce emissions of regulated material using a flare meeting the applicable requirements of § 65.142(b).

- (2) **98 percent or 20 parts per million standard.** Reduce emissions of regulated material or TOC by at least 98 weight-percent or to a concentration of less than 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, and corrected to 3 percent oxygen. The owner or operator shall meet the requirements in § 65.142(b) and paragraphs (a)(2)(i) and/or (a)(2)(ii) of this section.
- (i) Compliance with paragraph (a)(2) of this section may be achieved by using any combination of recovery and/or control device to meet the 20 parts per million by volume concentration standard; or by using any combination of recovery and/or control device to meet the 98 weight percent reduction standard, if the recovery device meets the conditions of paragraph (a)(2)(ii) of this section.
- (ii) An owner or operator may use a recovery device alone or in combination with one or more control devices to reduce emissions of total regulated material by 98 weight-percent if all of the following conditions are met:
- (A) For process vents referenced to this part by 40 CFR part 63, subpart G, the recovery device (and any control device that operates in combination with the recovery device to reduce emissions of total regulated material by 98 weight-percent) was installed before December 31, 1992.
- (B) The recovery device that will be used to reduce emissions of total regulated material by 98 weight-percent is the last recovery device before emission to the atmosphere.
- (C) The recovery device alone or in combination with one or more control devices is capable of reducing emissions of total regulated material by 98 weight-percent but is not capable of reliably reducing emissions of total regulated material to a concentration of 20 parts per million by volume.
- (D) If the owner or operator disposed of the recovered material, the recovery device would be considered a control device and comply with the requirements of this subpart and § 65.142(b) for control devices.
- (3) **TRE index value.** Achieve and maintain a TRE index value greater than 1.0 at the outlet of the final recovery device, or prior to release from the process vent to the atmosphere if no recovery device is present. If the TRE index value is greater than 1.0, the process vent shall meet the provisions for a Group 2A or 2B process vent specified in either paragraph (c), (d), (e), or (f) of this section, whichever is applicable.
- (b) **Halogenated Group 1 performance requirement.** Halogenated Group 1 process vents that are combusted shall be controlled according to paragraph (b)(1) or (2) of this section. The owner or operator shall either designate the Group 1 process vent as a halogenated Group 1 process vent or shall determine whether the process vent is halogenated using the procedures specified in § 65.64(g). If determined, the halogen concentration in the vent stream shall be recorded and reported in the Initial Compliance Status Report as specified in § 65.160(d). If the owner or operator designates the process vent as a halogenated Group 1 process vent, then this shall also be recorded and reported in the Initial Compliance Status Report.
- (1) **Halogen reduction device following combustion.** If a combustion device is used to comply with paragraph (a)(2) of this section for a halogenated process vent, then the process vent exiting the combustion device shall be ducted to a halogen reduction device including, but not limited to, a

scrubber before it is discharged to the atmosphere, and the halogen reduction device shall meet the requirements of paragraph (b)(1)(i) or (ii) of this section, as applicable. The halogenated process vent shall not be combusted using a flare.

- (i) Except as provided in paragraph (b)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens by 99 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour (0.99 pound per hour), whichever is less stringent. The owner or operator shall meet the requirements in § 65.142(b).
- (ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the device shall reduce overall emissions of hydrogen halides and halogens by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour (0.99 pound per hour), whichever is less stringent. The owner or operator shall meet the requirements in § 65.142(b).

(2) **Halogen reduction device prior to combustion.** A halogen reduction device, such as a scrubber, or other technique may be used to reduce the process vent halogen atom mass emission rate to less than 0.45 kilogram per hour (0.99 pound per hour) prior to any combustion control device and thus make the process vent nonhalogenated; the process vent must comply with the requirements of paragraph (a)(1) or (2) of this section. The mass emission rate of halogen atoms contained in organic compounds prior to the combustor shall be determined according to the procedures in § 65.64(g). The owner or operator shall maintain the record specified in § 65.160(d) and submit the report specified in § 65.165(d).

(c) **Performance requirements for Group 2A process vents with recovery devices.** For Group 2A process vents, where the owner or operator is using a recovery device to maintain a TRE index value greater than 1.0, the owner or operator shall maintain a TRE index value greater than 1.0 and comply with the requirements for recovery devices in § 65.142(b).

(d) **Performance requirements for Group 2A process vents without recovery devices.** For Group 2A process vents where the owner or operator is not using a recovery device to maintain a TRE index value greater than 1.0, determine the appropriate parameters to be monitored and submit the information as specified in paragraphs (d)(1), (2), and (3) of this section. Such information shall be submitted for approval to the Administrator as part of a title V permit application or by separate notice. The owner or operator shall monitor as specified in § 65.65(a), maintain the record specified in § 65.66(e), and submit reports as specified in § 65.67(c).

(1) **Parameter monitoring.** A description of the parameter(s) to be monitored to ensure the owner or operator of a process vent achieves and maintains the TRE above 1.0. and an explanation of the criteria used to select the parameter(s).

(2) **Demonstration methods and procedures.** A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the process, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter as part of the Initial Compliance Status Report required in § 65.5(d), unless this information has already been included in the operating permit application.

(3) **Monitoring, recordkeeping, and reporting frequency.** The frequency and content of monitoring, recording, and reporting if monitoring and recordkeeping are not continuous, or if reports of daily average values when the monitored parameter value is outside the range established in the

operating permit or Initial Compliance Status Report will not be included in periodic reports required under § 65.5(e). The rationale for the proposed monitoring, recording, and reporting system shall be included.

- (e) **Group 2B performance requirements.** For Group 2B process vents, the owner or operator shall maintain a TRE index greater than 4.0, a flow rate less than 0.011 scmm, or a concentration less than the applicable criteria in table 1 to this subpart.
- (f) **Group 2A or 2B process change requirements.** Whenever process changes are made that could reasonably be expected to change a Group 2A or 2B process vent to a Group 1 vent, the owner or operator shall recalculate the TRE index value, flow, or TOC or organic hazardous air pollutant (HAP) concentration according to paragraph (f)(1), (2), or (3) of this section as specified for each process vent as necessary to determine whether the process vent is Group 1, Group 2A, or Group 2B and shall maintain the applicable records specified in § 65.66(d) and submit the applicable reports specified in § 65.67(b). The owner or operator shall perform the group status determination as soon as practical after the process change and within 180 days after the process change. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of paragraph (f) of this section, process changes do not include process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE index value calculation was based.
 - (1) **Flow rate.** The flow rate shall be determined as specified in the sampling site and flow rate determination procedures in § 65.64(b) and (d) or by using best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in § 65.64(i).
 - (2) **Concentration.** The TOC or organic HAP concentration shall be determined as specified in § 65.64(b) and (c) or by using best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in § 65.64(i).
 - (3) **TRE index value.** The TRE index value shall be recalculated based on measurements of process vent flow rate, TOC, and/or organic HAP concentrations, and heating values as specified in § 65.64(b), (c), (d), (e), (f), (g), and (h) as applicable, or based on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in § 65.64(i).
 - (4) **Group status change to Group 1.** Where the process change causes the group status to change to Group 1, the owner or operator shall comply with the Group 1 process vent provisions in paragraph (a) of this section and, if they apply, the halogenated Group 1 process vent provisions in paragraph (b) of this section upon initial startup after the change and thereafter unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the process change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall comply as expeditiously as practical, but in no event later than 3 years after the emission point becomes Group 1, and shall comply with the following procedures to establish a compliance date:
 - (i) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.
 - (ii) The compliance schedule shall be submitted with the operating permit application or amendment or by other appropriate means.
 - (iii) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

- (5) **Group status change to Group 2A.** Whenever a process change causes the process vent group status to change to Group 2A, the owner or operator shall comply with the provisions of paragraph (c) or (d) of this section upon completion of the group status determination of the process vent.
- (6) **Group status change to Group 2B.** Whenever a process change causes the process vent group status to change to Group 2B, the owner or operator shall comply with the provisions of paragraph (e) of this section as soon as practical after the process change.

§ 65.64 Group determination procedures.

- (a) **General.** The provisions of this section provide calculation and measurement methods for parameters that are used to determine group status.
- (b)
 - (1) **Sampling site.** For purposes of determining TOC or HAP concentration, process vent volumetric flow rate, heating value, or TRE index value as specified under paragraph (c), (d), (e), (f), or (h) of this section, the sampling site shall be located after the last recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present, and prior to release to the atmosphere.
 - (2) **Sampling site when a halogen reduction device is used prior to a combustion device.** An owner or operator using a scrubber or other halogen reduction device to reduce the process vent halogen atom mass emission rate to less than 0.45 kilogram per hour (0.99 pound per hour) prior to a combustion control device in compliance with § 65.63(b)(2) shall determine the halogen atom mass emission rate prior to the combustor and after the scrubber or other halogen reduction device according to the procedures in paragraph (g) of this section.
 - (3) **Sampling site selection method.** Method 1 or 1A of appendix A of 40 CFR part 60, as appropriate, shall be used for selection of the sampling site. No traverse site selection method is needed for process vents smaller than 0.10 meter (4 inches) in nominal inside diameter.
- (c) **TOC or HAP concentration.** The TOC or HAP concentrations used for TRE index value calculations in paragraph (h) of this section shall be determined based on paragraph (c)(1) or (i) of this section, or any other method or data that have been validated according to the protocol in Method 301 of appendix A of 40 CFR part 63. For concentrations needed for comparison with the appropriate concentration in table 1 of this subpart, TOC or HAP concentration shall be determined based on paragraph (c)(1), (c)(2), or (i) of this section or any other method or data that have been validated according to the protocol in Method 301 of appendix A of 40 CFR part 63. The owner or operator shall record the TOC or HAP concentration as specified in § 65.66(c).
 - (1) **Method 18.** The procedures specified in paragraph (c)(1)(i) and (ii) of this section shall be used to calculate parts per million by volume concentration using Method 18 of appendix A of 40 CFR part 60.
 - (i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.
 - (ii) The concentration of either TOC (minus methane and ethane) or organic HAP emissions shall be calculated using the following two procedures, as applicable.

- (A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using Equation 64-1 of this section:

$$C_{\text{TOC}} = \frac{\sum_{i=1}^x \left(\sum_{j=1}^n C_{ji} \right)}{x} \quad (\text{Eq. 64-1})$$

Where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

x = Number of samples in the sample run.

n = Number of components in the sample.

C_{ji} = Concentration of sample component j of the sample i , dry basis, parts per million by volume.

- (B) The total organic HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (c)(1)(ii)(A) of this section except that only the organic HAP species shall be summed.

- (2) **Method 25A.** The following procedures shall be used to calculate parts per million by volume concentration using Method 25A of appendix A of 40 CFR part 60:
- (i) Method 25A of appendix A of 40 CFR part 60 shall be used only if a single organic compound of regulated material is greater than 50 percent of total organic HAP or TOC, by volume, in the process vent.
 - (ii) The process vent composition may be determined by either process knowledge, test data collected using an appropriate EPA method, or a method or data validated according to the protocol in Method 301 of appendix A of 40 CFR part 63. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current process vent conditions.
 - (iii) The organic compound used as the calibration gas for Method 25A of appendix A of 40 CFR part 60 shall be the single organic compound of regulated material present at greater than 50 percent of the total organic HAP or TOC by volume.
 - (iv) The span value for Method 25A of appendix A of 40 CFR part 60 shall be equal to the appropriate concentration value in table 1 to this subpart.
 - (v) Use of Method 25A of appendix A of 40 CFR part 60 is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A of appendix A of 40 CFR part 60 is below one-half the appropriate value in table 1 to this subpart to be considered a Group 2B vent with an organic HAP or TOC concentration below the appropriate value in table 1 to this subpart.

(d) **Volumetric flow rate.** The process vent volumetric flow rate (Q_S) in standard cubic meters per minute at 20 °C (68 °F) shall be determined as specified in paragraphs (d)(1) and (2) of this section and shall be recorded as specified in § 65.66(b):

- (1) Use Method 2, 2A, 2C, or 2D of appendix A of 40 CFR part 60, as appropriate. If the process vent tested passes through a final steam jet ejector and is not condensed, the stream volumetric flow shall be corrected to 2.3 percent moisture; or
- (2) The engineering assessment procedures in paragraph (i) of this section can be used for determining volumetric flow rates.

(e) **Heating value.** The net heating value shall be determined as specified in paragraphs (e)(1) and (2) of this section or by using the engineering assessment procedures in paragraph (i) of this section.

- (1) The net heating value of the process vent shall be calculated using Equation 64-2 of this section:

$$H_T = K_1 \left(\sum_{i=1}^n D_i H_i \right) \quad (\text{Eq. 64-2})$$

Where:

H_T = Net heating value of the sample, megajoule per standard cubic meter, where the net enthalpy per mole of process vent is based on combustion at 25 °C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to 1 mole is 20 °C as in the definition of Q_S (process vent volumetric flow rate).

K_1 = Constant, 1.740×10^{-7} (parts per million)⁻¹ (gram-mole per standard cubic meter) (megajoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

n = Number of components in the sample.

D_j = Concentration on a wet basis of compound j in parts per million as measured by procedures indicated in paragraph (e)(2) of this section. For process vents that pass through a final steam jet and are not condensed, the moisture is assumed to be 2.3 percent by volume.

H_j = Net heat of combustion of compound j , kilocalorie per gram-mole, based on combustion at 25 °C and 760 millimeters of mercury. The heat of combustion of process vent components shall be determined using American Society for Testing and Materials (ASTM) D2382-76 (incorporated by reference as specified in § 65.13) if published values are not available or cannot be calculated.

- (2) The molar composition of the process vent (D_j) shall be determined using the following methods:

- (i) Method 18 of appendix A of 40 CFR part 60 to measure the concentration of each organic compound.

(ii) American Society for Testing and Materials (ASTM) D1946-77 (incorporated by reference as specified in § 65.13) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 of appendix A of 40 CFR part 60 to measure the moisture content of the stack gas.

(f) **TOC or HAP emission rate.** The emission rate of TOC (minus methane and ethane) (E_{TOC}) and/or the emission rate of total organic HAP (E_{HAP}) in the process vent as required by the TRE index value equation specified in paragraph (h) of this section, shall be calculated using Equation 64.3 of this section:

$$E = K_2 \left(\sum_{i=1}^n C_i M_i \right) Q_s \quad (\text{Eq. 64-3})$$

Where:

E = Emission rate of TOC (minus methane and ethane) (E_{TOC}) or emission rate of total organic HAP (E_{HAP}) in the sample, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

n = Number of components in the sample.

C_j = Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of appendix A of 40 CFR part 60 as indicated in paragraph (c) of this section. If the TOC emission rate is being calculated, C_j includes all organic compounds measured minus methane and ethane; if the total organic HAP emission rate is being calculated, only organic HAP compounds are included.

M_j = Molecular weight of organic compound j, gram/gram-mole.

Q_s = Process vent flow rate, dry standard cubic meter per minute, at a temperature of 20 °C.

(g) **Halogenated vent determination.** In order to determine whether a process vent is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated according to the procedures specified in paragraphs (g)(1) and (2) of this section. A process vent is considered halogenated if the mass emission rate of halogen atoms contained in the organic compounds is equal to or greater than 0.45 kilogram per hour (0.99 pound per hour).

(1) The process vent concentration of each organic compound containing halogen atoms (parts per million by volume, by compound) shall be determined based on one of the following procedures:

(i) Process knowledge that no halogen or hydrogen halides are present in the process vent; or

(ii) Applicable engineering assessment as discussed in paragraph (i)(3) of this section; or

(iii) Concentration of organic compounds containing halogens measured by Method 18 of appendix A of 40 CFR part 60; or

(iv) Any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A of 40 CFR part 63.

- (2) Equation 64-4 of this section shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 Q \left(\sum_{j=1}^n \sum_{i=1}^m C_j \cdot L_{j,i} \cdot M_{j,i} \right) \quad (\text{Eq. 64-4})$$

Where:

E = Mass of halogen atoms, dry basis, kilogram per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (kilogram-mole per standard cubic meter) (minute per hour), where standard temperature is 20 °C.

Q = Flow rate of gas stream, dry standard cubic meters per minute, determined according to paragraph (d) or (i) of this section.

n = Number of halogenated compounds j in the gas stream.

j = Halogenated compound j in the gas stream.

m = Number of different halogens i in each compound j of the gas stream.

i = Halogen atom i in compound j of the gas stream.

C_j = Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

L_{ji} = Number of atoms of halogen i in compound j of the gas stream.

M_{ji} = Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

- (h) **TRE index value.** The owner or operator shall calculate the TRE index value of the process vent using the equations and procedures specified in paragraphs (h)(1) through (3) of this section, as applicable, and shall maintain the records specified in § 65.66(a) or § 65.66(d)(4), as applicable.

- (1) **TRE index value equation.** Equation 64-5 of this section shall be used to calculate the TRE index:

$$TRE = A \cdot [B + C + D + E + F] \quad (\text{Eq. 64-5})$$

Where:

TRE = TRE index value.

A, B, C, D, E, and F = Parameters presented in tables 2 and 3 of this subpart that include the following variables:

Q = Process vent flow rate, standard cubic meters per minute, at a standard temperature of 20 °C, as calculated according to paragraph (d) or (i) of this section.

H = Process vent net heating value, megajoules per standard cubic meter, as calculated according to paragraph (e) or (i) of this section.

E_{TOC} = Emission rate of TOC (minus methane and ethane), kilograms per hour, as calculated according to paragraph (f) or (i) of this section.

E_{HAP} = Emission rate of total organic HAP, kilograms per hour, as calculated according to paragraph (f) or (i) of this section.

- (2) **Nonhalogenated process vents.** The owner or operator of a nonhalogenated process vent shall calculate the TRE index value using either one of the following procedures, as applicable:
 - (i) **TRE calculations: Part 60 regulated sources.** Use the parameters in table 2 to this subpart and calculate the TRE index value twice, once using the appropriate equation (depending on the heating value and flow rate of the process vent) in equations 15 through 30 and once using the appropriate equation (depending on the heating value of the process vent) in equations 31 and 32. Select the lowest TRE index value.
 - (ii) **TRE calculations: Part 63 regulated sources.** Use the equation and parameters in table 3 to this subpart and calculate the TRE index value using equations 34, 35, and 36 for process vents at existing sources; or equations 38, 39, and 40 for process vents at new sources. Select the lowest TRE index value.
- (3) **Halogenated process vents.** The owner or operator of a halogenated process vent stream as determined according to procedures specified in paragraph (g) of this section shall calculate the TRE index value using either one of the following procedures, as applicable:
 - (i) **TRE Calculations: Part 60 regulated sources.** Use the parameters in table 2 to this subpart and calculate the TRE index value using the appropriate equation chosen from equations 1 through 14 depending on the heating value and flow rate of the process vent.
 - (ii) **TRE calculations: Part 63 regulated sources.** Use the appropriate parameters in table 3 to this subpart and calculate the TRE index value using equation 33 or 37 depending on whether the process vent is at a new or existing source.
- (i) **Engineering assessment.** For purposes of TRE index value determination, engineering assessment may be used to determine process vent flow rate, net heating value, TOC emission rate, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value. Engineering assessments shall meet the requirements of paragraphs (i)(1) through (4) of this section. If process vent flow rate or process vent organic HAP or TOC concentration is being determined for comparison with the 0.011 scmm (0.40 standard cubic foot) flow rate or the applicable concentration value in table 1 to this subpart, engineering assessment may be used to determine the flow rate or concentration for the representative operating condition expected to yield the highest flow rate or concentration.
- (1) If the TRE index value calculated using such engineering assessment and the TRE index value equation in paragraph (h) of this section is greater than 4.0, then the owner or operator is not required to perform the measurements specified in paragraphs (c) through (g) of this section.

- (2) If the TRE index value calculated using such engineering assessment and the TRE index value equation in paragraph (h) of this section is less than or equal to 4.0, then the owner or operator is required either to perform the measurements specified in paragraphs (c) through (g) of this section for group determination or to consider the process vent a Group 1 process vent and comply with the requirement (or standard) specified in § 65.63(a) and, if applicable, § 65.63(b).
- (3) Engineering assessment includes, but is not limited to, the examples specified in paragraphs (i)(3)(i) through (iv) of this section.
 - (i) Previous test results provided the tests are representative of current operating practices at the process unit.
 - (ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.
 - (iii) Maximum flow rate, TOC emission rate, organic HAP emission rate, organic HAP or TOC concentration, or net heating value limit specified or implied within a permit limit applicable to the process vent.
 - (iv) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to, the following examples:
 - (A) Use of material balances based on process stoichiometry to estimate maximum TOC or organic HAP concentrations;
 - (B) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities;
 - (C) Estimation of TOC or organic HAP concentrations based on saturation conditions; and
 - (D) Estimation of maximum expected net heating value based on the stream concentration of each organic compound or, alternatively, as if all TOC in the stream were the compound with the highest heating value.
- (4) All data, assumptions, and procedures used in the engineering assessment shall be documented. The owner or operator shall maintain the records specified in § 65.66(a), (b), (c), or (d), as applicable.

§ 65.65 Monitoring.

- (a) An owner or operator of a Group 2A process vent maintaining a TRE index value greater than 1.0 without a recovery device shall monitor based on the approved plan as specified in § 65.63(d).
- (b) As required in § 65.63(a) and (c), an owner or operator of a Group 2A process vent maintaining a TRE index value greater than 1.0 with a recovery device or a Group 1 process vent shall comply with § 65.142(b).

§ 65.66 Recordkeeping provisions.

- (a) **TRE index value records.** The owner or operator shall maintain records of measurements, engineering assessments, and calculations performed to determine the TRE index value of the process vent according to the procedures of § 65.64(h), including those records associated with halogen vent stream determination. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in § 65.64(i). As specified in § 65.67(a), the owner or operator shall include this information in the Initial Compliance Status Report.

- (b) **Flow rate records.** Each owner or operator who elects to demonstrate that a process vent is Group 2B based on a flow rate less than 0.011 standard cubic meter per minute (0.40 standard cubic foot per minute) shall record the flow rate as measured using the sampling site and flow rate determination procedures specified in § 65.64(b) and (d) or determined through engineering assessment as specified in § 65.64(i). As specified in § 65.67(a), the owner or operator shall include this information in the Initial Compliance Status Report.
- (c) **Concentration records.** Each owner or operator who elects to demonstrate that a process vent is Group 2B based on a concentration less than the applicable criteria in table 1 to this subpart shall record the organic HAP or TOC concentration as measurement using the sampling site and HAP or TOC concentration determination procedures specified in § 65.64(b) and (c) or determined through engineering assessment as specified in § 65.64(i). As specified in § 65.67(a), the owner or operator shall include this information in the Initial Compliance Status Report.
- (d) **Process change records.** The owner or operator shall keep up-to-date, readily accessible records as specified in the following and shall report this information as specified in § 65.67(b):
 - (1) If the process vent is Group 2B on the basis of flow rate being less than 0.011 scmm (0.40 standard cubic foot), then the owner or operator shall keep records of any process changes as defined in § 65.63(f) that increase the process vent flow rate and any recalculation or measurement of the flow rate pursuant to § 65.63(f).
 - (2) If the process vent is Group 2B on the basis of organic HAP or TOC concentration being less than the applicable value in table 1 to this subpart, then the owner or operator shall keep records of any process changes as defined in § 65.63(f) that increase the organic HAP or TOC concentration of the process vent and any recalculation or measurement of the concentration pursuant to § 65.63(f).
 - (3) If the process vent is Group 2A or Group 2B on the basis of the TRE index value being greater than 1.0, then the owner or operator shall keep records of any process changes as defined in § 65.63(f) and any recalculation of the TRE index value pursuant to § 65.63(f).
 - (4) As a result of a process change, if a process vent that was Group 2B on any basis becomes a Group 2B process vent only on the basis of having a TRE greater than 4.0, then the owner or operator shall keep records of the TRE index value determination performed according to the sample site and TRE index value determination procedures of § 65.64(b)(1) and (h) or determined through engineering assessment as specified in § 65.64(i).
- (e) **Other Group 2A records.** An owner or operator of a Group 2A process vent maintaining a TRE index value greater than 1.0 without a recovery device shall record the parameters monitored based on the approved plan as specified in § 65.63(d).

§ 65.67 Reporting provisions.

- (a) **Initial compliance status report.** The owner or operator shall submit as part of the Initial Compliance Status Report specified in § 65.5(d) the information recorded in § 65.66(a), (b), and (c), as applicable.
- (b) **Process change.**
 - (1) Whenever a process change, as described in § 65.63(f), is made that causes a Group 2A or 2B process vent to become a Group 1 process vent or a Group 2B process vent to become a Group 2A process vent, the owner or operator shall either submit a report within 60 days after the performance test or group determination or submit a report included as part of the next periodic report. The report shall include the following information:

- (i) A description of the process change;
 - (ii) The results of the recalculation of the flow rate, organic HAP or TOC concentration, and/or TRE index value required under § 65.63(f) and recorded under § 65.66(d); and
 - (iii) A statement that the owner or operator will comply with the provisions of § 65.63 by the schedules specified in § 65.63(f)(4) through (6).
- (2) For process vents that become Group 1 process vents after a process change requiring a performance test to be conducted for the control device being used as specified in subpart G of this part, the owner or operator shall specify that the performance test has become necessary due to a process change. This specification shall be made in the notification to the Administrator of the intent to conduct a performance test as provided in § 65.164(b)(1).
- (3) Whenever a process change as described in § 65.63(f) is made that changes the group status of a process vent from Group 1 to Group 2A, or from Group 1 to Group 2B, or from Group 2A to Group 2B, the owner or operator shall include a statement in the next periodic report after the process change that a process change has been made and the new group status of the process vents.
- (4) The owner or operator is not required to submit a report of a process change if one of the following conditions is met:
 - (i) The change does not meet the definition of a process change in § 65.63(f); or
 - (ii) For a Group 2B process vent, the vent stream flow rate is recalculated according to § 65.63(f) and the recalculated value is less than 0.011 standard cubic meter per minute (0.40 standard cubic foot per minute); or
 - (iii) For a Group 2B process vent, the organic HAP or TOC concentration of the vent stream is recalculated according to § 65.63(f), and the recalculated value is less than the applicable value in table 1 to this subpart; or
 - (iv) For a Group 2B process vent, the TRE index value is recalculated according to § 65.63(f) and the recalculated value is greater than 4.0.
- (c) **Parameters for Group 2A without a recovery device.** An owner or operator of a Group 2A process vent maintaining a TRE index value greater than 1.0 without using a recovery device shall report the information specified in the approved plan under § 65.63(d).

§§ 65.68-65.79 [Reserved]

Table 1 to Subpart D of Part 65—Concentration for Group Determination

Referencing subpart	Concentration ¹
Subpart III of Part 60	NA.
Subpart NNN of Part 60	300 ppmv of TOC.
Subpart RRR of Part 60	300 ppmv of TOC.
Subpart G of Part 63	50 ppmv of HAP ² .

¹ The 50 ppm HAP concentration cutoff only applies to 40 CFR part 63, subpart G sources. Process vents subject to only 40 CFR part 60, subparts RRR or NNN are eligible for the 300 ppm TOC cutoff. There is no concentration cutoff for subpart III sources. The process vent provisions of subpart DDD are not consolidated under this subpart.

² For process vents subject to subpart G of 40 CFR part 63, the owner or operator may measure HAP or TOC concentration with regard to the low concentration exemption provisions of this part.

Table 2 to Subpart D of Part 65—TRE Parameters for NSPS Referencing Subparts^a

Halogenated vent stream?	Net heating value (MJ/scm) ^b	Vent stream flow rate (scm/min) ^c	Values of terms for TRE equation: TRE = A * [B + C + D + E + F]						Eq. number
			A	B	C	D	E	F	
Yes	0 ≤ H ≤ 3.5	Q < 14.2	1/E _{TOC}	30.96334	0	0	-0.13064QH	0	
		14.2 ≤ Q ≤ 18.8	1/E _{TOC}	19.18370	0.27580Q	0.757620Q ^{0.88}	-0.13064QH	0.01025Q ^{0.5}	
		18.8 < Q ≤ 699	1/E _{TOC}	20.00563	0.27580Q	0.303870Q ^{0.88}	-0.13064QH	0.01025Q ^{0.5}	
		699 < Q ≤ 1400	1/E _{TOC}	39.87022	0.29973Q	0.303870Q ^{0.88}	-0.13064QH	0.01449Q ^{0.5}	
		1400 < Q ≤ 2100	1/E _{TOC}	59.73481	0.31467Q	0.303870Q ^{0.88}	-0.13064QH	0.01775Q ^{0.5}	
		2100 < Q ≤ 2800	1/E _{TOC}	79.59941	0.32572Q	0.303870Q ^{0.88}	-0.13064QH	0.02049Q ^{0.5}	
		2800 < Q ≤ 3500	1/E _{TOC}	99.46400	0.33456Q	0.303870Q ^{0.88}	-0.13064QH	0.02291Q ^{0.5}	

^a Use according to procedures outlined in § 65.64(h).

^b MJ/scm = mega Joules per standard cubic meter.

^c scm/min = standard cubic meters per minute.

Halogenated vent stream?	Net heating value (MJ/scm) ^b	Vent stream flow rate (scm/min) ^c	Values of terms for TRE equation: TRE = A * [B + C + D + E + F]						Eq. number
			A	B	C	D	E	F	
	H >3.5	Q <14.2	1/E _{TOC}	20.61052	0	0	0	0	
		14.2 ≤ Q ≤ 18.8	1/E _{TOC}	18.84466	0.26742Q	-0.200440Q ^{0.88}	0	0.01025Q ^{0.5}	
		18.8 < Q ≤ 699	1/E _{TOC}	19.66658	0.26742Q	-0.253320Q ^{0.88}	0	0.01025Q ^{0.5}	
		699 < Q ≤ 1400	1/E _{TOC}	39.19213	0.29062Q	-0.253320Q ^{0.88}	0	0.01449Q ^{0.5}	
		1400 < Q ≤ 2100	1/E _{TOC}	58.71768	0.30511Q	-0.253320Q ^{0.88}	0	0.01775Q ^{0.5}	
		2100 < Q ≤ 2800	1/E _{TOC}	78.24323	0.31582Q	-0.253320Q ^{0.88}	0	0.02049Q ^{0.5}	
		2800 < Q ≤ 3500	1/E _{TOC}	97.76879	0.32439Q	-0.253320Q ^{0.88}	0	0.02291Q ^{0.5}	
No	0 ≤ H ≤ 0.48	Q <14.2	1/E _{TOC}	11.01250	0	0	-0.17109QH	0	
		14.2 ≤ Q ≤ 1340	1/E _{TOC}	8.54245	0.10555Q	0.090300Q ^{0.88}	-0.17109QH	0.01025Q ^{0.5}	
		1340 < Q ≤ 2690	1/E _{TOC}	16.94386	0.11470Q	0.090300Q ^{0.88}	-0.17109QH	0.01449Q ^{0.5}	
		2690 < Q ≤ 4040	1/E _{TOC}	25.34528	0.12042Q	0.090300Q ^{0.88}	-0.17109QH	0.01775Q ^{0.5}	
	0.48 < H ≤ 1.9	Q <14.2	1/E _{TOC}	13.45630	0	0	-0.16181QH	0	
		14.2 ≤ Q ≤ 1340	1/E _{TOC}	9.25233	0.06105Q	0.319370Q ^{0.88}	-0.16181QH	0.01025Q ^{0.5}	
		1340 < Q ≤ 2690	1/E _{TOC}	18.36363	0.06635Q	0.319370Q ^{0.88}	-0.16181QH	0.01449Q ^{0.5}	
		2690 < Q ≤ 4040	1/E _{TOC}	27.47492	0.06965Q	0.319370Q ^{0.88}	-0.16181QH	0.01775Q ^{0.5}	
	1.9 < H ≤ 3.6	Q <14.2	1/E _{TOC}	7.96988	0	0	0	0	
		14.2 ≤ Q ≤ 1180	1/E _{TOC}	6.67868	0.06943Q	0.025820Q ^{0.88}	0	0.01025Q ^{0.5}	
		1180 < Q	1/E _{TOC}	13.21633	0.07546Q	0.025820Q ^{0.88}	0	0.01449Q ^{0.5}	

^a Use according to procedures outlined in § 65.64(h).

^b MJ/scm = mega Joules per standard cubic meter.

^c scm/min = standard cubic meters per minute.

Halogenated vent stream?	Net heating value (MJ/scm) ^b	Vent stream flow rate (scm/min) ^c	Values of terms for TRE equation: TRE = A * [B + C + D + E + F]						Equation number
			A	B	C	D	E	F	
		≤2370							
		2370<Q ≤3550	1/E _{TOC}	19.75398	0.07922Q	0.025820Q ^{0.88}	0	0.01775Q ^{0.5}	
	H >3.6	Q <14.2	1/E _{TOC}	6.67868	0	0.02220Q ^{0.88} H ^{0.88}	-0.00707QH	0.02036H ^{0.5}	
		Q ≥14.2 and 14.2≤Q*(H/3.6) ≤1180	1/E _{TOC}	6.67868	0	0.02220Q ^{0.88} H ^{0.88}	-0.00707QH	0.00540Q ^{0.5} H ^{0.5}	
		Q ≥14.2 and 1180<Q*(H/3.6) ≤2370	1/E _{TOC}	13.21633	0	0.02412Q ^{0.88} H ^{0.88}	-0.00707QH	0.00764Q ^{0.5} H ^{0.5}	
		Q ≥14.2 and 2370<Q*(H/3.6) ≤3550	1/E _{TOC}	19.75398	0	0.02533Q ^{0.88} H ^{0.88}	-0.00707QH	0.00936Q ^{0.5} H ^{0.5}	
No	0≤H <11.2	All	1/E _{TOC}	2.08	2.25Q	0.288Q ^{0.8}	-0.193QH	-0.0051E _{TOC}	
	H ≥11.2	All	1/E _{TOC}	2.08	0.309Q	0.0619Q ^{0.8}	-0.0043QH	-0.0043E _{TOC}	

^a Use according to procedures outlined in § 65.64(h).

^b MJ/scm = mega Joules per standard cubic meter.

^c scm/min = standard cubic meters per minute.

Table 3 to Subpart D of Part 65—TRE Parameters for HON Referencing Subparts^a

Existing or new?	Halogenated vent stream?	Values of terms for TRE equation: TRE = A * [B + C + D + E + F]						Equation number
		A	B	C	D	E	F	
Existing	Yes	1/E _{HAP}	3.995	0.05200Q	0	-0.001769H	0.0009700E _{TOC}	33
	No	1/E _{HAP}	1.935	0.3660Q	0	-0.007687H	-0.000733E _{TOC}	34
		1/E _{HAP}	1.492	0.06267Q	0	0.03177H	-0.001159E _{TOC}	35
		1/E _{HAP}	2.519	0.01183Q	0	0.01300H	0.04790E _{TOC}	36
New	Yes	1/E _{HAP}	1.0895	0.01417Q	0	-0.000482H	0.0002645E _{TOC}	37

^a Use according to procedures outlined in § 65.64(h).

Existing or new?	Halogenated vent stream?	Values of terms for TRE equation: $TRE = A * [B + C + D + E + F]$						Equation number
		A	B	C	D	E	F	
	No	$1/E_{HAP}$	0.5276	0.0998Q	0	-0.002096H	-0.0002000E _{TOC}	38
		$1/E_{HAP}$	0.4068	0.0171Q	0	0.008664H	-0.000316E _{TOC}	39
		$1/E_{HAP}$	0.6868	0.00321Q	0	0.003546H	0.01306E _{TOC}	40

^a Use according to procedures outlined in § 65.64(h).

Subpart E—Transfer Racks

§ 65.80 Applicability.

- (a) The provisions of this subpart and of subpart A of this part apply to control of regulated material emissions from transfer racks where a referencing subpart references the use of this subpart for such emissions control.
- (b) If a physical or process change is made that causes a transfer rack to fall outside the criteria in the referencing subpart that required the transfer rack to control emission of regulated material, the owner or operator may elect to comply with the provisions for transfer racks not subject to control contained in the referencing subpart instead of the provisions of this subpart.

§ 65.81 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart A of this part. If a term is defined in both subpart A of this part and in other subparts that reference the use of this subpart, the term shall have the meaning given in subpart A of this part for purposes of this subpart.

§ 65.82 Design requirements.

- (a) The owner or operator shall equip each transfer rack with either one of the following equipment:
 - (1) A closed vent system which routes the regulated material vapors to a control device as provided in § 65.83(a)(1) and (2).
 - (2) Process piping which routes the regulated material vapors to a process or a fuel gas system as provided in § 65.83(a)(4), or to a vapor balance system as provided in § 65.83(a)(3).
- (b) Each closed vent system shall be designed to collect the regulated material displaced from tank trucks or railcars during loading and to route the collected regulated material to a control device as provided in § 65.83(a)(1) and (2).
- (c) Process piping shall be designed to collect the regulated material displaced from tank trucks or railcars during loading and to route the collected regulated material vapors to a process or a fuel gas system as provided in § 65.83(a)(4), or to a vapor balance system as provided in § 65.83(a)(3).
- (d) Each closed vent system shall meet the applicable requirements of § 65.143.

- (e) If the collected regulated material vapors are routed to a process or a fuel gas system as provided in § 65.83(a)(4), then each owner or operator shall meet the applicable requirements of § 65.142(c).

§ 65.83 Performance requirements.

- (a) The owner or operator of the transfer rack shall comply with paragraph (a)(1), (2), (3), or (4) of this section.
 - (1) **98 Percent or 20 parts per million by volume standard.** Use a control device to reduce emissions of regulated material by 98 weight-percent or to an exit concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3 percent oxygen. The owner or operator shall meet the applicable requirements of § 65.142(c). Compliance may be achieved by using any combination of control devices.
 - (2) **Flare.** Reduce emissions of regulated material using a flare meeting the applicable requirements of § 65.142(c).
 - (3) **Vapor balancing.** Reduce emissions of regulated material using a vapor balancing system designed and operated to collect regulated material vapors displaced from tank trucks or railcars during loading; and to route the collected regulated material vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected to a common header, or to compress and route collected regulated material vapors to a process. Transfer racks for which the owner or operator is using a vapor balancing system are exempt from the closed vent system design requirements of § 65.82(b) and (d), the halogenated vent stream control requirements of paragraph (b) of this section, the control device operation requirements of § 65.84(b), the monitoring requirements of § 65.86, and the requirements of subpart G of this part.
 - (4) **Route to a process or fuel gas system.** Route emissions of regulated material to a process or fuel gas system. The owner or operator shall meet the applicable requirements of § 65.142(c) and is exempt from the closed vent system design requirements of paragraphs § 65.82(b) and (d), the halogenated vent stream control requirements of paragraph (b) of this section, the control device operation requirements of § 65.84(b), and the monitoring requirements of § 65.86. If the emissions are routed to a process, the regulated material in the emissions shall predominantly meet one of, or a combination of, the ends specified in the following:
 - (i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;
 - (ii) Transformed by chemical reaction into materials that are not regulated materials;
 - (iii) Incorporated into a product; and/or
 - (iv) Recovered.
- (b) **Additional control requirements for halogenated vent streams.** Halogenated vent streams from transfer racks that are combusted shall be controlled according to paragraph (b)(1) or (2) of this section. The owner or operator shall either designate the transfer rack vent stream as a halogenated vent stream or shall determine whether the vent stream is halogenated using the procedures specified in § 65.85(c). If determined, the halogen concentration in the vent stream shall be recorded and reported in the Initial Compliance Status Report as specified in § 65.160(d). If the owner or operator designates the vent stream as a halogenated vent stream, then this shall also be recorded and reported in the Initial Compliance Status Report.

- (1) **Halogen reduction device following combustion.** If a combustion device is used to comply with paragraph (a)(1) of this section for a halogenated vent stream, then the vent stream exiting the combustion device shall be ducted to a halogen reduction device including, but not limited to, a scrubber before it is discharged to the atmosphere, and the halogen reduction device shall meet the requirements of paragraph (b)(1)(i) or (ii) of this section, as applicable. The halogenated vent stream shall not be combusted using a flare.
 - (i) Except as provided in paragraph (b)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens by 99 percent or shall reduce the outlet mass emission rate of total hydrogen halides and halogens to 0.45 kilogram per hour (0.99 pound per hour) or less, whichever is less stringent. The owner or operator shall meet the applicable requirements of § 65.142(c).
 - (ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour (0.99 pound per hour), whichever is less stringent. The owner or operator shall meet the applicable requirements of § 65.142(c).
- (2) **Halogen reduction device prior to combustion.** A halogen reduction device, such as a scrubber, or other technique may be used to make the vent stream nonhalogenated by reducing the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour (0.99 pound per hour) prior to any combustion control device used to comply with the requirements of paragraph (a)(1) or (2) of this section. The mass emission rate of halogen atoms contained in organic compounds prior to the combustor shall be determined according to the procedures in § 65.85(c). The owner or operator shall maintain the record specified in § 65.160(d) and submit the report specified in § 65.165(d).

§ 65.84 Operating requirements.

- (a) **Closed vent systems or process piping.** An owner or operator of a transfer rack shall operate it in such a manner that emissions are routed through the equipment specified in either paragraph (a)(1) or (2) of this section.
 - (1) A closed vent system which routes the regulated material vapors to a control device as provided in § 65.83(a)(1) and (2).
 - (2) Process piping which routes the regulated material vapors to a process or a fuel gas system as provided in § 65.83(a)(4) or to a vapor balance system as provided in § 65.83(a)(3).
- (b) **Control device operation.** Whenever regulated material emissions are vented to a control device used to comply with the provisions of this subpart, such control device shall be operating.
- (c) **Tank trucks and railcars.** The owner or operator shall load regulated material only into tank trucks and railcars that meet one of the following two requirements and shall maintain the records specified in § 65.87:
 - (1) Have a current certification in accordance with the U.S. Department of Transportation (DOT) pressure test requirements of 49 CFR part 180 for tank trucks and 49 CFR 173.31 for railcars; or
 - (2) Have been demonstrated to be vapor-tight within the preceding 12 months as determined by the procedures in § 65.85(a). Vapor-tight means that the pressure in a truck or railcar tank will not drop more than 750 pascals (0.11 pound per square inch) within 5 minutes after it is pressurized to a minimum of 4,500 pascals (0.65 pound per square inch).

- (d) **Pressure relief device.** The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure relief device in the loading equipment of each tank truck or railcar shall begin to open to the atmosphere during loading. Pressure relief devices needed for safety purposes are not subject to paragraph (d) of this section.
- (e) **Compatible system.** The owner or operator of a transfer rack subject to the provisions of this subpart shall load regulated material only to tank trucks or railcars equipped with a vapor collection system that is compatible with the transfer rack's closed vent system or process piping.
- (f) **Loading while systems connected.** The owner or operator of a transfer rack subject to this subpart shall load regulated material only to tank trucks or railcars whose collection systems are connected to the transfer rack's closed vent systems or process piping.

§ 65.85 Procedures.

- (a) **Vapor tightness.** For the purposes of demonstrating vapor tightness to determine compliance with § 65.84(c)(2), the following procedures and equipment shall be used:
 - (1) The pressure test procedures specified in Method 27 of appendix A of 40 CFR part 60; and
 - (2) A pressure measurement device that has a precision of ± 2.5 millimeters of mercury (0.10 inch) or better and that is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.
- (b) **Engineering assessment.** Engineering assessment to determine if a vent stream is halogenated or flow rate of a gas stream includes, but is not limited to, the following examples:
 - (1) Previous test results, provided the tests are representative of current operating practices at the process unit.
 - (2) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.
 - (3) Maximum flow rate or halogen emission rate specified or implied within a permit limit applicable to the process vent.
 - (4) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties.
 - (5) All data, assumptions, and procedures used in the engineering assessment shall be documented.
- (c) **Halogenated vent stream determination.** In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated as specified in paragraphs (c)(1) and (2) of this section.
 - (1) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume by compound) shall be determined based on any of the following procedures:
 - (i) Process knowledge that no halogen or hydrogen halides are present in the vent stream; or
 - (ii) Applicable engineering assessment as specified in paragraph (b) of this section; or
 - (iii) Concentration of organic compounds containing halogens measured by Method 18 of appendix A of 40 CFR part 60; or

(iv) Any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A of 40 CFR part 63.

(2) Equation 85-1 of this section shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 V_s \left\{ \sum_{j=1}^n \sum_{i=1}^m C_j \cdot L_{ji} \cdot M_{ji} \right\} \quad (\text{Eq. 85-1})$$

Where:

E = Mass of halogen atoms, dry basis, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million)⁻¹ (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

V_s = Flow rate of gas stream, dry standard cubic meters per minute, determined according to Method 2, 2A, 2C, or 2D of appendix A of 40 CFR part 60, as appropriate, or determined using engineering assessment as specified in paragraph (b) of this section.

n = Number of halogenated compounds j in the gas stream.

j = Halogenated compound j in the gas stream.

m = Number of different halogens i in each compound j of the gas stream.

i = Halogen atom i in compound j of the gas stream.

C_j = Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

L_{ji} = Number of atoms of halogen i in compound j of the gas stream.

M_{ji} = Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

§ 65.86 Monitoring.

The owner or operator of a transfer rack equipped with a closed vent system and control device pursuant to § 65.83(a)(1) or (2) shall monitor the closed vent system and control device as required under the applicable paragraphs specified in § 65.142(c).

§ 65.87 Recordkeeping provisions.

The owner or operator of a transfer rack shall record that either the verification of U.S. Department of Transportation (DOT) tank certification or Method 27 of appendix A of 40 CFR part 60 testing required in § 65.84(c) has been performed. Various methods for the record of verification can be used, such as a check off on a log sheet, a list of DOT serial numbers or Method 27 data, or a position description for gate security showing that the security guard will not allow any trucks on-site that do not have the appropriate documentation.

§§ 65.88-65.99 [Reserved]

Subpart F—Equipment Leaks

§ 65.100 Applicability.

- (a) **Equipment subject to this subpart.** The provisions of this subpart and subpart A of this part apply to equipment that contains or contacts regulated material. Compliance with this subpart instead of the referencing subpart does not alter the applicability of the referencing subpart. This subpart applies only to the equipment to which the referencing subpart applies. This part does not extend applicability to equipment that is not regulated by the referencing subpart.
- (b) **Equipment in vacuum service.** Equipment in vacuum service is excluded from the requirements of this subpart.
- (c) **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 §§ 65.106 through 65.115 and § 65.117 if it is identified as required in § 65.103(b)(6).
- (d) **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 nonprocess 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.

§ 65.101 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart A of this part. If a term is defined in both subpart A of this part and in other subparts that reference the use of this subpart, the term shall have the meaning given in subpart A of this part for purposes of this subpart.

§ 65.102 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 § 65.111(b) for pressure relief devices or § 65.112(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 §§ 65.106 through 65.115 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 §§ 65.106 through 65.115.
- (c) **Requests by manufacturers of equipment.**
 - (1) Manufacturers of equipment used to control equipment leaks of a regulated material may apply to the Administrator for approval of an alternative means of emission limitation that achieves a reduction in emissions of the regulated material equivalent to the reduction achieved by the equipment, design, and operational requirements of this subpart.
 - (2) The Administrator will grant permission according to the provisions of paragraph (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 paragraph (d)(1) through (4) of this section.

- (1) Where the standard is an equipment, design, or operational requirement, the following requirements 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 following requirements 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) The owner or operator shall demonstrate the emission reduction achieved by the required work practice and the proposed alternative means of emission limitation.
 - (iii) 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.
 - (iv) 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 judgment 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 pursuant to § 65.8(a).

§ 65.103 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 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 §§ 65.106 through 65.115 shall be specifically identified as required in paragraphs (b)(1) through (6) of this section, as applicable. Paragraph (b) of this section 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 § 65.117.
 - (1) **Connectors.** Except for inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of § 65.108(e)(2), and instrumentation systems identified pursuant to paragraph (b)(5) of this section, identify the connectors subject to the requirements of this subpart. Connectors subject to § 65.108(e)(3) shall be distinguished from other connectors. 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 § 65.108(a).

(2) [Reserved]

(3) ***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 § 65.107(e)(3) (pumps in light liquid service), § 65.109(e)(3) (agitators), § 65.111(d) (pressure relief devices in gas/vapor service), § 65.112(e) (compressors), or § 65.118 (alternative means of emission limitation for enclosed-vented process units).

(4) ***Pressure relief devices.*** Identify the pressure relief devices equipped with rupture disks under the provisions of § 65.111(e).

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

(6) ***Equipment in service less than 300 hours per calendar year.*** Identify either by list, location (area or group), or other method, equipment in regulated material service less than 300 hours per calendar year within a process unit subject to the provisions of this subpart.

(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 § 65.106(e)(1), pumps meeting the provisions of § 65.107(e)(6), connectors meeting the provisions of § 65.108(e)(1), and agitators meeting the provisions of § 65.109(e)(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.

(2) ***Designation and criteria for difficult-to-monitor.*** Valves meeting the provisions of § 65.106(e)(2) may be designated difficult-to-monitor if the provisions of paragraph (c)(2)(i) of this section apply. Agitators meeting the provisions of § 65.109(e)(5) may be designated difficult-to-monitor if the provisions of paragraph (c)(2)(ii) of this section apply.

(i) ***Valves.*** The owner or operator of the valve:

(A) 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 the process unit within which the valve is located is a regulated source for which the owner or operator commenced construction, reconstruction, or modification prior to the compliance date of the referencing subpart; or

(B) Designates less than 3 percent of the total number of valves within the process unit 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 according to the provisions of paragraph (c)(1) of this section and the planned schedule for monitoring this equipment. The owner or operator shall record the identity of equipment designated as difficult-to-monitor according to the provisions of paragraph (c)(2) of this section, the planned schedule for monitoring this equipment, and an explanation why the equipment is difficult-to-monitor.

(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 § 65.105 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 and repair of the equipment according to the procedures in § 65.105 if a leak is detected.

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

- (1) **Designation and criteria.** Connectors subject to the provisions of § 65.105(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 shutdown as specified in § 63.105(e).
- (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.** Identify the compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million under the provisions of § 65.112(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 (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.

§ 65.104 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/vapor service and in light liquid service shall be monitored pursuant to § 65.106(b).
 - (ii) Pumps in light liquid service shall be monitored pursuant to § 65.107(b).
 - (iii) Connectors in gas/vapor service and in light liquid service shall be monitored pursuant to § 65.108(b).
 - (iv) Agitators in gas/vapor service and in light liquid service shall be monitored pursuant to § 65.109(b).
 - (v) Pressure relief devices in gas/vapor service shall be monitored pursuant to § 65.111(b) and (c).
 - (vi) Compressors designated to operate with an instrument reading less than 500 parts per million as described in § 65.103(e) shall be monitored pursuant to § 65.112(f).
- (2) **Sensory monitoring for leaks.**
- (i) Pumps in light liquid service shall be observed pursuant to § 65.107(b)(4) and (e)(1)(v).
 - (ii) Agitators in gas/vapor service and in light liquid service shall be observed pursuant to § 65.109(b)(3) or (e)(1)(v).
- (b) **Instrument monitoring methods.** Instrument monitoring as required under this subpart shall comply with the requirements specified in paragraphs (b)(1) through (6) of this section.
- (1) **Monitoring method.** Monitoring shall comply with Method 21 of appendix A of 40 CFR part 60, 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 appendix A of 40 CFR part 60, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the representative composition of the process fluid not each individual organic compound in the stream. For process streams that contain nitrogen, air, water, or other inerts that are not organic hazardous air pollutants or volatile organic compounds, the 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. Maintain the record specified by § 65.119(b)(8).
 - (ii) If no instrument is available at the plant site 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 appendix A of 40 CFR part 60.

- (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 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 (5) of this section may still be used to qualify initially for less frequent monitoring under the provisions in § 65.106(a)(2), (b)(3), or (b)(4) for valves or § 65.108(b)(3) for connectors, provided the departures from the criteria or from the specified monitoring frequency of § 65.106(b)(3) or (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(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 readings and 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 (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 § 65.111(b) (pressure relief devices) or § 65.112(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 following procedures:
- (1) The requirements of paragraphs (b)(1) through (5) of this section shall apply.
- (2) The background level shall be determined using the procedures in Method 21 of appendix A of 40 CFR part 60.
- (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 appendix A of 40 CFR part 60.

- (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 § 65.111(b) (pressure relief devices) or § 65.112(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, 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 (ii) of this section shall be recorded and kept pursuant to § 65.4(a), except the information for valves complying with the 2-year monitoring period allowed under § 65.106(b)(3)(v), and connectors complying with the 8-year monitoring period allowed under § 65.108(b)(3)(iii) shall be kept 5 years beyond the date of the last use of the information to set a monitoring period.
 - (i) The instrument, 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.

§ 65.105 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) or (e) of this section. A first attempt at repair as defined in subpart A of this part 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 in gas/vapor or light liquid service may be removed after it has been monitored as specified in § 65.106(d)(2) and no leak has been detected during that monitoring. The leak identification on a connector in gas/vapor or light liquid service may be removed after it has been monitored as specified in § 65.108(b)(3)(iv) and no leak has been detected during that monitoring.
 - (2) **Other equipment.** The identification that has been placed pursuant to § 65.104(e)(1) on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of § 65.108(b)(3)(iv), 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 (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 repair within 15 days 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 shutdown. Repair of this equipment shall occur as soon as practical, but no later than the end of the next process unit 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 following provisions 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 routed to a process or fuel gas system or is collected and destroyed or recovered in a control device complying with § 65.115.
- (4) Delay of repair for pumps is also allowed if the provisions of paragraphs (d)(4)(i) and (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 § 65.116(d) will provide better performance or one of the following specifications are met:
 - (A) A dual mechanical seal system that meets the requirements of § 65.107(e)(1) will be installed;
 - (B) A pump that meets the requirements of § 65.107(e)(2) 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 § 65.107(e)(3) will be installed.
 - (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 shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit 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 shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- (e) **Unsafe-to-repair: Connectors.** Any connector that is designated as described in § 65.103(d) as an unsafe-to-repair connector is exempt from the requirements of § 65.108(d) and paragraph (a) of this section if the provisions of § 65.103(d) are met.
- (f) **Leak repair records.** For each leak detected, the information specified in paragraphs (f)(1) through (5) of this section shall be recorded and kept pursuant to § 65.4(a).
 - (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 appendix A of 40 CFR part 60 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 the paragraphs (f)(4)(i) and (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/malfunction plan required by § 65.6 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 onsite before depletion and the reason for depletion.
- (5) Dates of process unit shutdowns that occur while the equipment is unrepaired.

§ 65.106 Standards: Valves in gas/vapor service and in light liquid service.

- (a) *Compliance schedule.*
 - (1) The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
 - (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 § 65.104(b)(6).
- (b) *Leak detection.* Unless otherwise specified in § 65.102(b) or paragraph (e) of this section, 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 § 65.104(b) and (c).
 - (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 (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 two 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 two 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 (v) of this section. Monitoring data generated before the regulated source became subject to the referencing subpart and meeting the criteria of either § 65.104(b)(1) through (5) or § 65.104(b)(6) may be used to qualify initially for less frequent monitoring under paragraphs (b)(3)(iii) through (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 2 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 4 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 (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 (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 following provisions:
 - (A) The owner or operator shall determine which valves are assigned to each subgroup. Valves with less than 1 year of monitoring data or valves not monitored within the last 12 months must be placed initially into the most frequently monitored subgroup until at least 1 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 (for example, for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Nonrepairable 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 (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 group 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 106-1 of this section:

$$\%V_{LO} = \frac{\sum_{i=1}^n (\%V_{Li} \times V_i)}{\sum_{i=1}^n V_i} \quad (\text{Eq. 106-1})$$

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 the following records:
 - (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 begin or end subgrouping valves. The notification shall identify the participating process units and the number of valves assigned to each subgroup, if applicable. The notification may be included in a periodic report if the periodic report is submitted no later than 30 days prior to the beginning of the next monitoring period.
- (vi) The owner or operator shall submit in the periodic reports the following information:
 - (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 separate 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 implementation 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 Equation 106-2 of this section:

$$\%V_L = (V_L / V_T) \times 100 \quad (\text{Eq. 106-2})$$

Where:

$\%V_L$ = Percent leaking valves.

V_L = Number of valves found leaking, including those valves found leaking pursuant to paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section and 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 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, 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 § 65.105, as applicable.

- (2) After a leak determined under paragraph (b) or (e)(2) of this section has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. The monitoring required by paragraph (d) of this section is in addition to the monitoring required to satisfy the definition of repair.
 - (i) The monitoring shall be conducted as specified in § 65.104(b) and (c), 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 paragraph (d) of this section if the timing of the monitoring period coincides with the time specified in paragraph (d) of this section. Alternatively, other monitoring may be performed to satisfy the requirements of paragraph (d) of this section regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in paragraph (d) of this section.
 - (iii) If a leak is detected by monitoring that is conducted under paragraph (d)(2) of this section, the owner or operator shall comply with the following provisions 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 paragraph (d)(2) of this section, 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 paragraph (d)(2) of this section, 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 § 65.103(c)(1) as an unsafe-to-monitor valve is exempt from the requirements of paragraph (b) and (d)(2) of this section, and the owner or operator shall monitor the valve according to the written plan specified in § 65.103(c)(4).
- (2) **Difficult-to-monitor valves.** Any valve that is designated as described in § 65.103(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 § 65.103(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 paragraph (b)(3)(iii), (iv), or (v) of this section except as provided in paragraphs (e)(1) and (2) of this section.

§ 65.107 Standards: Pumps in light liquid service.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (b) **Leak detection.** Unless otherwise specified in § 65.102(b) or paragraph (e) 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 § 65.104(b) and (c).
- (2) **Instrument reading that defines a leak.** The following leak definitions determined through instrument readings apply:
 - (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 comply with either of the following procedures:
 - (i) The owner or operator shall monitor the pump as specified in § 65.104(b) and (c) unless the pump has already been monitored since the last routine monthly monitoring required by paragraph (b)(1) of this section. If monitoring is performed and the instrument reading indicates a leak as specified in paragraph (b)(2) of this section, a leak is detected and the leak shall be repaired using the procedures in § 65.105, except as specified in paragraph (b)(3) of this section; or
 - (ii) The owner or operator shall eliminate the visual indications of liquids dripping.

(c) **Percent leaking pumps calculation.**

- (1) The owner or operator shall decide no later than the implementation 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 § 65.116.
- (3) The number of pumps at a process unit shall be the sum of all the pumps in regulated material service, except that pumps found leaking in a continuous process unit within 1 month after startup 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 Equation 107-1 of this section:

$$\%P_L = \left(\frac{|P_L - P_S|}{|P_T - P_S|} \right) \cdot 100 \quad (\text{Eq. 107-1})$$

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 startup during the current monitoring period.

P_T = Total pumps in regulated material service, including those meeting the criteria in paragraphs (e)(1), (e)(2), (e)(3), and (e)(6) 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 § 65.105, as applicable.

(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 (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 of the design criteria and an explanation of the design criteria, and any changes to these criteria and the reasons for the changes.

(ii) Each dual mechanical seal system shall meet the following three requirements:

(A) Operated with the barrier fluid at a pressure that is at all times (except periods of start-up, 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 § 65.115; 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 either one of the following procedures prior to the next required inspection:

(A) The owner or operator shall monitor the pump as specified in § 65.104(b) and (c) 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 § 65.105; 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 § 65.105.
- (2) **No external shaft.** Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the 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 that captures and transports leakage from the pump to a control device meeting the requirements of § 65.115 is exempt from the 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) **Ninety percent exemption.** If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e)(1) or (2) of this section, the process unit is exempt from the percent leaking calculation in paragraph (c) of this section.
- (6) **Unsafe-to-monitor pumps.** Any pump that is designated as described in § 65.103(c)(1) as an unsafe-to-monitor pump is exempt from the requirements of paragraph (b) of this section, the monitoring and inspection requirements of paragraphs (e)(1)(v) through (viii) of this section, and the owner or operator shall monitor and repair the pump according to the written plan specified in § 65.103(c)(4).

§ 65.108 Standards: Connectors in gas/vapor service and in light liquid service.

- (a) **Compliance schedule.** Except as allowed in § 65.102(b) or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in each process unit initially for leaks by either 12 months after the implementation date as specified in § 65.1(f) or 12 months after initial startup, whichever is later. If all connectors in each process unit have been monitored for leaks prior to the implementation date specified in § 65.1(f), 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 § 65.102(b) or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas/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 § 65.104(b) and (c).

- (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 (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (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 subpart.
- (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 paragraph (b)(3)(ii) of this section 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 (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 paragraphs (b)(3)(i) through (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 108-1 of this section:

$$\%C_L = C_L / C_i \cdot 100 \quad (\text{Eq. 108-1})$$

Where:

$\%C_L$ = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (b)(3)(iii) of this section.

C_L = Number of connectors measured at 500 parts per million or greater by the method specified in § 65.104(b).

C_t = Total number of monitored connectors in the process unit.

(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 § 65.105, as applicable.

(e) **Special provisions for connectors —**

(1) **Unsafe-to-monitor connectors.** Any connector that is designated, as described in § 65.103(c)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section and the owner or operator shall monitor according to the written plan specified in § 65.103(c)(4).

(2) **Inaccessible, ceramic, or ceramic-lined connectors.**

(i) Any connector that is inaccessible or that is ceramic or ceramic-lined (for example, 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 §§ 65.119 and 65.120. An inaccessible connector is one that meets any of the following provisions, 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.

- (3) **Connectors referenced from 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V.** For sources referenced to this part from 40 CFR part 61, subpart VV, or from 40 CFR part 61, subpart V, connectors are exempt from the requirements of paragraphs (a) through (d) of this section and the owner or operator shall comply with the following paragraphs:
- (i) Connectors shall be monitored within 5 days by the method specified in § 65.104(b) and (c) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.
 - (ii) If an instrument reading of 500 parts per million or greater is measured, a leak is detected.
 - (iii) When a leak is detected, it shall be repaired using the procedures in § 65.105, as applicable.

§ 65.109 Standards: Agitators in gas/vapor service and in light liquid service.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (b) **Leak detection —**
- (1) **Monitoring method.** Each agitator seal shall be monitored monthly to detect leaks by the methods specified in § 65.104(b) and (c), except as provided in § 65.102(b) or paragraph (e) of this section.
 - (2) **Instrument reading that defines a leak.** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
 - (3) **Visual inspection.** Each agitator seal shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator 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 agitator seal, the owner or operator shall comply with either of the following procedures prior to the next required inspection:
 - (i) The owner or operator shall monitor the agitator seal as specified in § 65.104(b) and (c) 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 according to paragraph (d) of this section.
 - (ii) The owner or operator shall eliminate the indications of liquids dripping from the agitator seal.
- (c) [Reserved]
- (d) **Leak repair.** If a leak is detected, then the leak shall be repaired using the procedures in § 65.105(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 (vi) of this section are met.
 - (i) Each dual mechanical seal system shall meet any one of the following requirements:
 - (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 § 65.115; 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 either of the following procedures prior to the next required inspection:
 - (A) The owner or operator shall monitor the agitator seal as specified in § 65.104(b) and (c) to determine the presence of regulated material in the barrier fluid. 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 § 65.105; 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 following requirements:
 - (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 that are 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 § 65.105, 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 or equipped with a closed vent system that captures and transports leakage from the agitator to a control device meeting the requirements of § 65.115 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 § 65.103(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 § 65.103(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 § 65.103(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 § 65.103(c)(4).

§ 65.110 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in liquid service; and instrumentation systems.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (b) **Leak detection.** Unless otherwise specified in § 65.102(b), the owner or operator shall comply with the following:
 - (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 § 65.104(b) and (c) 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 polymerizing monomers, 2,000 parts per million or greater for all other pumps (including pumps in food/medical service), 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 it shall be repaired pursuant to § 65.105, as applicable.
- (c) **Leak repair.** For equipment identified in paragraph (b) of this section that is not monitored by the method specified in § 65.104(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.

§ 65.111 Standards: Pressure relief devices in gas/vapor service.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (b) **Compliance standard.** Except during pressure releases as provided for in paragraph (c) of this section, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million as measured by the method specified in § 65.104(b) and (c).
- (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 § 65.105(d).

- (2) The pressure relief device shall be monitored no later than 5 calendar days after the pressure release and being returned to regulated material service to confirm the condition indicated by an instrument reading of less than 500 parts per million as measured by the method specified in § 65.104(b) and (c).
- (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 maximum instrument reading measured during the monitoring and the background level measured if the instrument reading is adjusted for background.
- (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 § 65.115 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 new 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 § 65.105(d).

§ 65.112 Standards: Compressors.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (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 § 65.102(b) and paragraphs (e) and (f) of this section. Each compressor seal system shall meet any one of the following requirements:
 - (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 start-up, 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 § 65.115; 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 unmanned 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 § 65.105, 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 § 65.115.
- (f) ***Alternative compressor standard.***
 - (1) Any compressor that is designated as described in § 65.103(e) 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 as measured by the method specified in § 65.104(b) and (c).
 - (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.

§ 65.113 Standards: Sampling connection systems.

- (a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).
- (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 § 65.102(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 following applicable requirements:
 - (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 § 65.115; or
 - (4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:
 - (i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is complying with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams. For sources referenced to this part from 40 CFR part 63, subpart H, and if the purged process fluid does not contain any organic HAP 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 a National Pollution Discharge Elimination System (NPDES) permit or sends the wastewater to an NPDES-permitted facility; or
 - (ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 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; and

(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.

§ 65.114 Standards: Open-ended valves or lines.

(a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).

(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 § 65.102(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 (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.

§ 65.115 Standards: Closed vent systems and control devices; or emissions routed to a fuel gas system or process.

(a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).

(b) ***Compliance standard.***

(1) Owners or operators of closed vent systems and nonflare control devices used to comply with provisions of this subpart shall design and operate the closed vent systems and nonflare control devices to reduce emissions of regulated material with an efficiency of 95 percent or greater, or to reduce emissions of regulated material to a concentration of 20 parts per million by volume or, for an enclosed combustion device, to provide a minimum residence time of 0.50 second at a minimum of 760 °C (1400 °F). Owners and operators of closed vent systems and nonflare control devices used to comply with this part shall comply with the provisions of § 65.142(d), except as provided in § 65.102(b). Note that this includes the startup, shutdown, and malfunction provisions of § 65.6.

- (2) Owners or operators of closed vent systems and flares used to comply with the provisions of this subpart shall design and operate the flare as specified in § 65.142(d), except as provided in § 65.102(b). Note that this includes the startup, shutdown, and malfunction provisions of § 65.6.
- (3) Owners or operators routing emissions from equipment leaks to a fuel gas system or process shall comply with the provisions of § 65.142(d), except as provided in § 65.102(b).

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20472, Apr. 20, 2006]

§ 65.116 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 plant site) or three pumps in a process unit (or plant site) leak, the owner or operator shall comply with the following requirements:
 - (1) Pumps that are in food/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/medical or polymerizing monomer service shall comply with all 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 plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 65.107.
- (c) **Resumption of QIP.** If in a subsequent monitoring period, the process unit (or plant site) has the greater of either 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 (8) of this section.
 - (1) The owner or operator shall comply with the requirements in § 65.107.
 - (2) **Data collection.** The owner or operator shall collect the data specified in paragraphs (d)(2)(i) through (v) of this section and maintain records for each pump in each process unit (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or plant site basis.
 - (i) Pump type (for example, piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (for example, 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, a description of any maintenance or quality assurance programs used in the process unit 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 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 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) **Data analysis.**
 - (i) 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 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 plant site).
 - (iii) The analysis shall include consideration of the following information:
 - (A) The data obtained from the inspections of pumps and pump seals removed from the process unit 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 intracompany 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 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 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)(3)(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, and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units. 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 following information:
 - (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. 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 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. 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. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.
 - (i) The quality assurance program shall meet the following requirements:
 - (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 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.** Beginning at 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 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 (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 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 § 65.107 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 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 as specified in paragraphs (e)(1) through (6) of this section.
- (1) When using a pump quality improvement program as specified in this section, record the following information:
 - (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 following information:
 - (i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions, and the 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.

§ 65.117 Alternative means of emission limitation: Batch processes.

- (a) **General requirement.** As an alternative to complying with the requirements of §§ 65.106 through 65.114 and § 65.116, 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 § 65.102(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 startup of the process.

(ii) If a batch product-process fails the retest (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 following procedures 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 Equation 117-1 of this section:

$$\Delta(P/t) = [(P_f - P_i)] / (t_f - t_i) \quad (\text{Eq. 117-1})$$

Where:

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

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 ± 2.5 millimeters 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 ± 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 following procedures 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 (for example, 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 (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, as specified in paragraph (b)(4)(ii) of this section, the following information 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 § 65.104(b) and (c) to demonstrate compliance with this subpart:
- (1) The owner or operator shall comply with the requirements of §§ 65.106 through 65.116 as modified by paragraphs (c)(2) through (4) of this section.
 - (2) The equipment shall be monitored for leaks by the method specified in § 65.104(b) and (c) 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 the following:

- (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 startup of the process. This initial monitoring of reconfigured equipment shall not be included in determining percent leaking equipment in the process unit.
- (ii) Connectors shall be monitored in accordance with the requirements in § 65.108.
- (iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 to this subpart. 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 (for example, 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 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 since the last monitoring period required in paragraphs (c)(3)(ii) and (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. 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 § 65.4 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 since the last monitoring period required in paragraphs (c)(3)(ii) and (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 provided the following conditions 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 following periodic report to be filed pursuant to § 65.120(b) shall include the following information 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.

§ 65.118 Alternative means of emission limitation: Enclosed-vented process units.

- (a) **Use of closed vent system and control device.** Process units that are enclosed in such a manner that all emissions from equipment leaks are routed to a process or fuel gas system or collected and vented through a closed vent system to a control device meeting the requirements of § 65.115 are exempt from the requirements of §§ 65.106 through 65.114 and § 65.116. The enclosure shall be maintained under a negative pressure at all times while the process unit 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 following records:
 - (1) Identification of the process unit(s) and the regulated materials they handle.
 - (2) A schematic of the process unit, 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.

§ 65.119 Recordkeeping provisions.

- (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 (for example, 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 § 65.103(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 subpart F of this part through written documentation such as a log or other designation.
 - (2) The owner or operator shall keep a written plan as specified in § 65.103(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 § 65.103(d)(2) for any equipment that is designated as unsafe to repair.
 - (4) As specified in § 65.103(e), the owner or operator shall maintain a record of 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 § 65.103(f).
 - (6) The owner or operator shall keep records for leaking equipment as specified in § 65.104(e)(2).

- (7) The owner or operator shall keep records for leak repair as specified in § 65.105(f) and records for delay of repair as specified in § 65.105(d).
- (8) For instrument response factor criteria determinations performed pursuant to § 65.104(b)(2)(i), the owner or operator shall maintain a record of an engineering assessment that identifies the representative composition of the process fluid. The assessment shall be based on knowledge of the compounds present in the process, similarity of response factors for the materials present, the range of compositions encountered during monitoring, or other information available to the owner or operator.
- (9) The owner or operator shall keep records of the detection limit calibration as specified in § 65.104(b)(3).

(c) ***Specific equipment leak records.***

- (1) For valves, the owner or operator shall maintain the following records:
 - (i) The monitoring schedule for each process unit as specified in § 65.106(b)(3)(v).
 - (ii) The valve subgrouping records specified in § 65.106(b)(4)(iv), if applicable.
- (2) For pumps, the owner or operator shall maintain the following records:
 - (i) Documentation of pump visual inspections as specified in § 65.107(b)(4).
 - (ii) Documentation of dual mechanical seal pump visual inspections as specified in § 65.107(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 § 65.107(e)(1)(i).
- (3) For connectors, the owner or operator shall maintain the records specified in § 65.108(b)(3)(v) which identify a monitoring schedule for each process unit.
- (4) For agitators, the owner or operator shall maintain the following records:
 - (i) Documentation of agitator seal visual inspections as specified in § 65.109(b)(3).
 - (ii) For agitators equipped with a dual mechanical seal system that includes barrier fluid system, the owner or operator shall keep records as specified in § 65.109(e)(1)(vi)(B).
 - (iii) Documentation of the dual mechanical seal agitator seal visual inspections as specified in § 65.109(e)(1)(iv).
- (5) For pressure relief devices in gas/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 § 65.111(c)(3), or the date the rupture disk is replaced as specified in § 65.111(e).
- (6) For compressors, the owner or operator shall maintain the following records:
 - (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 § 65.112(d)(2).
 - (ii) For compressors operating under the alternative compressor standard, record the dates and results of each compliance test as specified in § 65.112(f)(2).

- (7) For a pump QIP program, the owner or operator shall maintain the following records:
 - (i) Individual pump records as specified in § 65.116(d)(2).
 - (ii) Trial evaluation program documentation as specified in § 65.116(d)(6)(iii).
 - (iii) Engineering evaluation documenting the basis for judgement that superior emission performance technology is not applicable as specified in § 65.116(d)(6)(vi).
 - (iv) Quality assurance program documentation as specified in § 65.116(d)(7).
 - (v) QIP records as specified in § 65.116(e).
- (8) For process units complying with the batch process unit alternative, the owner or operator shall maintain the following records:
 - (i) Pressure test records as specified in § 65.117(b)(7).
 - (ii) Records for equipment added to the process unit as specified in § 65.117(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 § 65.118(b).

§ 65.120 Reporting provisions.

- (a) **Initial Compliance Status Report.** Unless the information specified in paragraphs (a)(1) through (3) of this section has previously been submitted under the referencing subpart, each owner or operator shall submit an Initial Compliance Status Report according to the procedures in § 65.5(d). The notification shall include the information listed in paragraphs (a)(1) through (3) of this section, as applicable.
 - (1) The notification shall provide the following information for each process unit subject to the requirements of this subpart:
 - (i) Process unit identification;
 - (ii) Number of each equipment type (for example, valves, pumps) excluding equipment in vacuum service; and
 - (iii) Method of compliance with the standard (for example, “monthly leak detection and repair” or “equipped with dual mechanical seals”).
 - (2) The notification shall provide the following information for each process unit subject to the requirements of § 65.117(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 following information for each process unit subject to the requirements in § 65.118:
 - (i) Process unit 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 G of this part.

- (b) **Periodic reports.** The owner or operator shall report the information specified in paragraphs (b)(1) through (9) of this section, as applicable, in the periodic report specified in § 65.5(e).
- (1) For the equipment specified in paragraphs (b)(1)(i) through (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 § 65.105(a), and for valves identify the number of components that are determined by § 65.106(c)(3) to be nonreparable.
 - (i) Valves in gas/vapor service and in light liquid service pursuant to § 65.106(b) and (c).
 - (ii) Pumps in light liquid service pursuant to § 65.107(b) and (c).
 - (iii) Connectors in gas/vapor service and in light liquid service pursuant to § 65.108(b) and (c).
 - (iv) Agitators in gas/vapor service and in light liquid service pursuant to § 65.109(b).
 - (v) Compressors pursuant to § 65.112(d).
 - (2) Where any delay of repair is utilized pursuant to § 65.105(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 § 65.106(b)(4)(iv).
 - (4) For pressure relief devices in gas/vapor service pursuant to § 65.111(b) and for compressors pursuant to § 65.112(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 § 65.106(b)(3)(i).
 - (6) Report, if applicable, the initiation of a quality improvement program for pumps pursuant to § 65.116.
 - (7) [Reserved]
 - (8) Where the alternative means of emissions limitation for batch processes is utilized, report the information listed in § 65.117(f).
 - (9) Report the information listed in paragraph (a) of this section for the Initial Compliance Status Report for process units 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.

§§ 65.121-65.139 [Reserved]

Table 1 to Subpart F of Part 65—Batch Processes Monitoring Frequency for Equipment Other Than Connectors

Operating time (percent 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.

Subpart G—Closed Vent Systems, Control Devices, and Routing to a Fuel Gas System or a Process

§ 65.140 Applicability.

The provisions of this subpart and of subpart A of this part (including the startup, shutdown, and malfunction provisions in § 65.6) apply to routing emissions to processes, fuel gas systems, closed vent systems, control devices, and recovery devices where another subpart expressly references the use of this subpart.

§ 65.141 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart A of this part. If a term is defined in both subpart A of this part and in other subparts that reference the use of this subpart, the term shall have the meaning given in subpart A of this part for purposes of this subpart.

§ 65.142 Standards.

- (a) **Storage vessel requirements.** The owner or operator expressly referenced to this subpart from subpart C of this part shall comply with the following requirements, as applicable:
 - (1) **Closed vent system and flare.** Owners or operators subject to § 65.42(b)(4) who route storage vessel emissions through a closed vent system to a flare shall meet the requirements in § 65.143 for closed vent systems; § 65.147 for flares; and § 65.157(a), (b), and (c) for provisions regarding flare compliance determinations; and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to storage vessel emissions routed through a closed vent system to a flare.
 - (2) **Closed vent system and nonflare control device.** Owners or operators subject to § 65.42(b)(5) who route storage vessel emissions through a closed vent system to a nonflare control device shall meet the requirements in § 65.143 for closed vent systems and § 65.145 for nonflare control devices and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to storage vessel emissions routed through a closed vent system to a nonflare control device unless specifically required in the monitoring plan submitted under § 65.145(c).

- (3) **Route to a fuel gas system or process.** Owners or operators subject to § 65.42(b)(6) who route storage vessel emissions to a fuel gas system or to a process shall meet the requirements in § 65.144 and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to storage vessel emissions being routed to a fuel gas system or to a process.
- (b) **Process vent requirements.** The owner or operator expressly referenced to this subpart from subpart D of this part or 40 CFR part 60, subpart DDD, shall comply with the following requirements, as applicable:
- (1) **Flare.** Owners or operators subject to § 65.63(a)(1) or 40 CFR 60.562-1(a)(1)(i)(C) who route process vent emissions to a flare shall meet the applicable requirements in § 65.143 for closed vent systems; § 65.147 for flares; and § 65.157(a), (b), and (c) for provisions regarding flare compliance determinations; and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to process vent emissions routed through a closed vent system to a flare.
- (2) **Nonflare control device.** Owners or operators subject to § 65.63(a)(2) or 40 CFR 60.562-1(a)(1)(i)(A) or (B) who route process vent emissions to a nonflare control device shall meet the applicable requirements in § 65.143 for closed vent systems; the requirements applicable to the control devices being used in §§ 65.148 through 65.152 or § 65.155; the applicable general monitoring requirements of § 65.156; the applicable performance test requirements and procedures of §§ 65.157 and 65.158; and the monitoring, recordkeeping, and reporting requirements referenced therein. Owners or operators subject to the halogen reduction device requirements of § 65.63(b)(1) must also comply with § 65.154 and the monitoring, recordkeeping, and reporting requirements referenced therein. The requirements of §§ 65.144 through 65.146 do not apply to process vents. No other provisions of this subpart apply to process vent emissions routed through a closed vent system to a nonflare control device.
- (3) **Final recovery devices.** Owners or operators subject to § 65.63(a)(3) who use a final recovery device to maintain the TRE index value of a Group 2A process vent above 1.0 shall meet the requirements in § 65.153, and the monitoring, recordkeeping, and reporting requirements referenced therein applicable to the recovery device being used and the applicable monitoring requirements in § 65.156, and the recordkeeping and reporting requirements referenced therein, except for § 65.156(c)(2)(ii). No other provisions of this subpart apply to Group 2A process vents.
- (c) **Transfer rack requirements.** The owner or operator expressly referenced to this subpart from subpart E of this part shall comply with the following requirements, as applicable:
- (1) **Closed vent system and flare.** Owners or operators subject to § 65.83(a)(2) who route transfer rack emissions through a closed vent system to a flare shall meet the applicable requirements in § 65.143 for closed vent systems; § 65.147 for flares; and § 65.157(a), (b), and (c) for provisions regarding flare compliance determinations; and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to transfer rack emissions routed through a closed vent system to a flare.
- (2) **Closed vent system and nonflare control device for low-throughput transfer racks.** Owners or operators of low-throughput transfer racks subject to § 65.83(a)(1) who route low-throughput transfer rack emissions through a closed vent system to a nonflare control device shall meet the applicable requirements in § 65.143 for closed vent systems and § 65.145 for nonflare control devices and the monitoring, recordkeeping, and reporting requirements referenced therein. Owners or operators subject to the halogen reduction requirements of § 65.83(b)(1) must also comply with

the recordkeeping requirement of § 65.160(d) and the reporting requirement of § 65.165(d). No other provisions of this subpart apply to low-throughput transfer rack emissions routed through a closed vent system to a nonflare control device unless specifically required in the monitoring plan submitted under § 65.145(c).

(3) **Closed vent system and nonflare control devices for high-throughput transfer racks.** Owners or operators of high-throughput transfer racks subject to § 65.83(a)(1) who route high-throughput transfer rack emissions through a closed vent system to a nonflare control device shall meet the applicable requirements in § 65.143 for closed vent systems; the requirements applicable to the control device being used in §§ 65.148 through 65.152 or § 65.155; the applicable general monitoring of § 65.156; the applicable performance test requirements and procedures of §§ 65.157 and 65.158; and the monitoring, recordkeeping, and reporting requirements referenced therein. Owners or operators subject to the halogen reduction device requirements of § 65.83(b)(1) must also comply with § 65.154 and the monitoring, recordkeeping, and reporting requirements referenced therein. The requirements of §§ 65.144 through 65.146 do not apply to high-throughput transfer rack emissions routed through a closed vent system to a nonflare control device. No other provisions of this subpart apply to high-throughput transfer rack emissions routed through a closed vent system to a nonflare control device.

(4) **Route to a fuel gas system or to a process.** Owners or operators subject to § 65.83(a)(4) of this part who route transfer rack emissions to a fuel gas system or to a process shall meet the applicable requirements in § 65.144 and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to transfer rack emissions being routed to a fuel gas system or to a process.

(d) **Equipment leak requirements.** The owner or operator expressly referenced to this subpart from subpart F of this part shall comply with the following requirements, as applicable:

(1) **Closed vent system and flare.** Owners or operators subject to § 65.115(b) who route equipment leak emissions through a closed vent system to a flare shall meet the requirements in § 65.143 for closed vent systems; § 65.147 for flares; and § 65.157(a), (b), and (c) for provisions regarding flare compliance determinations; and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to equipment leak emissions routed through a closed vent system to a flare.

(2) **Closed vent system and nonflare control device.** Owners or operators subject to § 65.115(b) who route equipment leak emissions through a closed vent system to a nonflare control device shall meet the requirements in § 65.143 for closed vent systems, § 65.146 for nonflare control devices used for equipment leak emissions, and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to equipment leak emissions routed through a closed vent system to a nonflare control device.

(3) **Route to a fuel gas system or to a process.** Owners or operators subject to § 65.115(b) who route equipment leak emissions to a fuel gas system or to a process shall meet the requirements in § 65.144 and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to equipment leak emissions being routed to a fuel gas system or to a process.

(e) **Combined emissions.** When emissions of different kinds (for example, emissions from process vents, transfer racks, and/or storage vessels) are combined, the owner or operator shall comply with the requirements of either paragraph (e)(1) or (2) of this section:

- (1) Comply with the applicable requirements of this subpart for each kind of emissions in the stream (for example, the requirements of § 65.142(b) for process vents, and the requirements of § 65.142(c) for transfer racks); or
- (2) Comply with the first set of requirements identified in paragraphs (e)(2)(i) through (iii) of this section which applies to any individual emission stream that is included in the combined stream. Compliance with the first applicable set of requirements identified in paragraphs (e)(2)(i) through (iii) of this section constitutes compliance with all other requirements in paragraphs (e)(2)(i) through (iii) of this section applicable to other types of emissions in the combined stream. The hierarchy is as follows:
 - (i) The requirements of § 65.142(b) for Group 1 process vents, including applicable monitoring, recordkeeping, and reporting;
 - (ii) The requirements of § 65.142(c) for high-throughput transfer racks, including applicable monitoring, recordkeeping, and reporting;
 - (iii) The requirements of § 65.142(a) for control of emissions from storage vessels or low-throughput transfer racks, including monitoring, recordkeeping, and reporting.

§ 65.143 Closed vent systems.

- (a) **Closed vent system equipment and operating requirements.** The provisions of paragraph (a) of this section apply to closed vent systems collecting regulated material from a storage vessel, process vent, transfer rack, or equipment leaks.
 - (1) **Collection of emissions.** Each closed vent system shall be designed and operated to collect the regulated material vapors from the emission point and to route the collected vapors to a control device.
 - (2) **Period of operation.** Closed vent systems used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.
 - (3) **Bypass monitoring.** Except for pressure relief devices needed for safety purposes, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines, the owner or operator shall comply with either of the following provisions for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere:
 - (i) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 65.163(a)(1)(i). The flow indicator shall be installed at the entrance to any bypass line.
 - (ii) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line. Records shall be generated as specified in § 65.163(a)(1)(ii).
 - (4) **Loading arms at transfer racks.** Each closed vent system collecting regulated material from a transfer rack shall be designed and operated so that regulated material vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.

- (5) **Pressure relief devices in a transfer rack's closed vent system.** The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure relief device in the transfer rack's closed vent system shall open to the atmosphere during loading. Pressure relief devices needed for safety purposes are not subject to paragraph (a)(5) of this section.
- (b) **Closed vent system inspection requirements.** The provisions of paragraph (b) of this section apply to closed vent systems collecting regulated material from a storage vessel, transfer rack or equipment leaks. Inspection records shall be generated as specified in § 65.163(a)(3) and (4).
 - (1) Except for closed vent systems operated and maintained under negative pressure and as provided in paragraphs (b)(2) and (3) of this section, each closed vent system shall be inspected as specified in paragraph (b)(1)(i) or (ii) of this section.
 - (i) If the closed vent system is constructed of hard-piping, the owner or operator shall comply with the following requirements:
 - (A) Conduct an initial inspection according to the procedures in paragraph (c) of this section; and
 - (B) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (ii) If the closed vent system is constructed of ductwork, the owner or operator shall conduct an initial and annual inspection according to the procedures in paragraph (c) of this section.
 - (2) Any parts of the closed vent system that are designated as described in § 65.163(a)(2) as unsafe to inspect are exempt from the inspection requirements of paragraph (b)(1) of this section if the following conditions are met:
 - (i) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (b)(1) of this section; and
 - (ii) The owner or operator has a written plan that requires inspection of the equipment as frequently as practical during safe-to-inspect times. Inspection is not required more than once annually.
 - (3) Any parts of the closed vent system that are designated, as described in § 65.163(a)(2), as difficult-to-inspect are exempt from the inspection requirements of paragraph (b)(1) of this section if the following provisions apply:
 - (i) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters (7 feet) above a support surface; and
 - (ii) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.
- (c) **Closed vent system inspection procedures.** The provisions of paragraph (c) of this section apply to closed vent systems collecting regulated material from a storage vessel, transfer rack, or equipment leaks.
 - (1) Each closed vent system subject to paragraph (c) of this section shall be inspected according to the procedures specified in paragraphs (c)(1)(i) through (vii) of this section.
 - (i) Inspections shall be conducted in accordance with Method 21 of appendix A of 40 CFR part 60 except as specified in this section.

- (ii) Except as provided in paragraph (c)(1)(iii) of this section, the detection instrument shall meet the performance criteria of Method 21 of appendix A of 40 CFR part 60, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the representative composition of the process fluid not each individual organic compound in the stream. For process streams that contain nitrogen, air, water, or other inerts that are not organic hazardous air pollutants or volatile organic compounds, the response factor shall be determined on an inert-free basis. The response factor may be determined at any concentration for which the monitoring for leaks will be conducted. Maintain the record specified by § 65.163(a)(5).
- (iii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (c)(1)(ii) 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 (c)(1)(ii) of this section.
- (iv) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of appendix A of 40 CFR part 60.
- (v) Calibration gases shall be as specified in the following:
 - (A) Zero air (less than 10 parts per million hydrocarbon in air).
 - (B) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas 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 (c)(1)(ii) 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.
 - (C) If the detection instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,500 parts per million.
- (vi) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects not to adjust readings for background, all such instrument readings shall be compared directly to 500 parts per million to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in this section. The owner or operator shall subtract the background reading from the maximum concentration indicated by the instrument.
- (vii) If the owner or operator elects to adjust for background, the arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining whether there is a leak.
- (2) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of appendix A of 40 CFR part 60.
- (3) Except as provided in paragraph (c)(4) of this section, inspections shall be performed when the equipment is in regulated material service or in use with any other detectable gas or vapor.
- (4) Inspections of the closed vent system collecting regulated material from a transfer rack shall be performed only while a tank truck or railcar is being loaded or is otherwise pressurized to normal operating conditions with regulated material or any other detectable gas or vapor.

- (d) **Closed vent system leak repair provisions.** The provisions of paragraph (d) of this section apply to closed vent systems collecting regulated material from a storage vessel, transfer rack, or equipment leak.
- (1) If there are visible, audible, or olfactory indications of leaks at the time of the annual visual inspections required by paragraph (b)(1)(i)(B) of this section, the owner or operator shall follow either of the following procedures:
- (i) The owner or operator shall eliminate the indications of the leak.
- (ii) The owner or operator shall monitor the equipment according to the procedures in paragraph (c) of this section.
- (2) Leaks as indicated by an instrument reading greater than 500 parts per million by volume above background shall be repaired as soon as practical except as provided in paragraph (d)(3) of this section. Records shall be generated as specified in § 65.163(a)(3) when a leak is detected.
- (i) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
- (ii) Except as provided in paragraph (d)(3) of this section, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.
- (3) Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible without a closed vent system shutdown, as defined in § 65.2, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed as soon as practical, but not later than the end of the next closed vent system shutdown.

§ 65.144 Fuel gas systems and processes to which storage vessel, transfer rack, or equipment leak regulated material emissions are routed.

- (a) **Equipment and operating requirements for fuel gas systems and processes.**
- (1) Except during periods of startup, shutdown, and malfunction as specified in § 65.3(a), the fuel gas system or process shall be operating at all times when regulated material emissions are routed to it.
- (2) The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure relief device in the transfer rack's system returning vapors to a fuel gas system or process shall open to the atmosphere during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph (a)(2).
- (3) Each process piping system collecting regulated material from a transfer rack shall be designed and operated so that regulated material vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.
- (b) **Fuel gas system and process compliance determination.**
- (1) If emissions are routed to a fuel gas system, there is no requirement to conduct a performance test or design evaluation.
- (2) For storage vessels and transfer racks, and if emissions are routed to a process, the regulated material in the emissions shall predominantly meet one of, or a combination of, the following conditions, and the compliance demonstration requirements in paragraph (b)(3) of this section, if applicable:

- (i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;
 - (ii) Transformed by chemical reaction into materials that are not regulated materials;
 - (iii) Incorporated into a product; and/or
 - (iv) Recovered.
- (3) To demonstrate compliance with paragraph (b)(2) of this section for a storage vessel, the owner or operator shall prepare a design evaluation (or engineering assessment) that demonstrates the extent to which one or more of the conditions specified in paragraphs (b)(2)(i) through (iv) of this section are being met. The owner or operator shall submit the design evaluation as specified in § 65.165(a)(1).
- (c) **Statement of connection to fuel gas system.** For storage vessels and transfer racks, the owner or operator shall submit the statement of connection reports for fuel gas systems specified in § 65.165(a)(2) and/or (a)(3), as appropriate.

§ 65.145 Nonflare control devices used to control emissions from storage vessels or low-throughput transfer racks.

- (a) **Nonflare control device equipment and operating requirements.** The owner or operator shall operate and maintain the nonflare control device, including a halogen reduction device for a low-throughput transfer rack, so that the monitored parameters defined as required in paragraph (c) of this section remain within the ranges specified in the Initial Compliance Status Report whenever emissions of regulated material are routed to the control device and halogen reduction device, except during periods of startup, shutdown, and malfunction as specified in § 65.3(a).
- (b) **Nonflare control device design evaluation or performance test requirements.** When using a control device other than a flare, the owner or operator shall comply with the requirements in paragraph (b)(1)(i), (ii), or (iii) of this section except as provided in paragraph (b)(2) of this section. Owners or operators of halogenated low-throughput transfer rack vent streams routed to a combustion device and then to a halogen reduction device to meet the specifications of § 65.83(b)(1), must also meet the requirements of paragraph (b)(3) of this section.
- (1) Unless a design evaluation or performance test as required in the referencing subpart was previously conducted and submitted for the storage vessel or low-throughput transfer rack, the owner or operator shall either prepare and submit with the Initial Compliance Status Report, as specified in § 65.165(b), a design evaluation that includes the information specified in paragraph (b)(1)(i) of this section, or the results of the performance test as described in paragraph (b)(1)(ii) or (iii) of this section.
- (i) **Design evaluation.** The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during the reasonably expected maximum storage vessel filling or transfer loading rate. This documentation is to include a description of the gas stream that enters the control device, including flow and regulated material content; and additionally for storage vessels, the effects of varying liquid level conditions; and the information specified in paragraphs (b)(1)(i)(A) through (E) of this section, as applicable. This documentation shall be submitted with the Initial Compliance Status Report as specified in § 65.165(b).

- (A) The efficiency determination is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.
 - (B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the emission reduction requirement specified in § 65.42(b)(5) for storage vessels, or § 65.83(a)(1) for transfer racks, documentation that those conditions exist is sufficient to meet the requirements of paragraph (b)(1)(i) of this section.
 - (C) Except as provided in paragraph (b)(1)(i)(B) of this section for enclosed combustion devices, the design evaluation shall include the estimated autoignition temperature of the stream being combusted, the flow rate of the stream, the combustion temperature, and the residence time at the combustion temperature.
 - (D) For carbon adsorbers, the design evaluation shall include the estimated affinity of the regulated pollutant vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity, the temperature, the flow rate of the inlet stream and, if applicable, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.
 - (E) For condensers, the design evaluation shall include the final temperature of the stream vapors, the type of condenser, and the design flow rate of the emission stream.
- (ii) **Performance test.** A performance test is acceptable to demonstrate compliance with § 65.42(b)(5) for storage vessels, and § 65.83(a)(1) for low-throughput transfer racks. The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (b)(1)(i) of this section if a performance test will be performed that meets the following criteria:
- (A) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in § 65.42(b)(5) for storage vessels, or § 65.83(a)(1) for transfer racks; and
 - (B) The performance test meets the applicable performance test requirements of §§ 65.157 and 65.158, and the results are submitted as part of the Initial Compliance Status Report as specified in § 65.165(b).
- (iii) If the control device used to comply with § 65.42(b)(5) for storage vessels, or with § 65.83(a)(1) for low-throughput transfer racks, as applicable, is also used to comply with § 65.63(a)(2) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, a performance test required by § 65.148(b), § 65.149(b), § 65.150(b), § 65.151(b), § 65.152(b), or § 65.155(b) is acceptable to demonstrate compliance with § 65.42(b)(5) for storage vessels, or § 65.83(a)(1) for low-throughput transfer racks, as applicable. The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (b)(1)(i) of this section, if a performance test will be performed which meets the following criteria:
- (A) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in § 65.42(b)(5) for storage vessels, or § 65.83(a)(1) for transfer racks; and
 - (B) The performance test is submitted as part of the Initial Compliance Status Report as specified in § 65.165(b).

- (2) A design evaluation or performance test is not required if the owner or operator uses a combustion device meeting the criteria in paragraph (b)(2)(i), (ii), (iii), or (iv) of this section and reports as specified in § 65.165(f).
 - (i) A boiler or process heater with a design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater.
 - (ii) A boiler or process heater burning hazardous waste for which the owner or operator meets either of the following requirements:
 - (A) The boiler or process heater has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or
 - (B) The boiler or process heater has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
 - (iii) A hazardous waste incinerator for which the owner or operator meets either of the following requirements:
 - (A) The incinerator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O; or
 - (B) The incinerator has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.
 - (iv) A boiler or process heater into which the vent stream is introduced with the primary fuel.
- (3) **Halogen reduction devices used for transfer racks.** Unless a design evaluation or performance test as required in the referencing subpart was previously conducted and submitted for a halogen reduction device following a combustion device for a low-throughput transfer rack, the owner or operator shall either prepare and submit with the Initial Compliance Status Report, as specified in § 65.165(b), a design evaluation that includes the information specified in paragraph (b)(3)(i) of this section, or the results of the performance test as described in paragraph (b)(3)(ii) or (iii) of this section. The provisions of this paragraph (b)(3) apply to owners or operators using a halogen reduction device following a combustion device to comply with § 65.83(b)(1).
 - (i) **Design evaluation.** The design evaluation shall include documentation demonstrating that the halogen reduction device being used achieves the required control efficiency during the reasonably expected maximum transfer loading rate. This documentation is to include a description of the gas stream that enters the halogen reduction device, including flow and regulated material content. The efficiency determination is to include consideration of all vapors, gases, and liquids, other than fuels, received by the halogen reduction device. This documentation shall be submitted with the Initial Compliance Status Report as specified in § 65.165(b).
 - (ii) **Performance test.** A performance test is acceptable to demonstrate compliance with § 65.83(b)(1) for low-throughput transfer racks. The owner or operator is not required to prepare a design evaluation for the halogen reduction device as described in paragraph (b)(3)(i) of this section if a performance test will be performed that meets the following criteria:
 - (A) The performance test demonstrates that the halogen reduction device achieves greater than or equal to the required control efficiency specified in § 65.83(b)(1) for transfer racks; and

(B) The performance test meets the applicable performance test requirements of §§ 65.157 and 65.158, and the results are submitted as part of the Initial Compliance Status Report as specified in § 65.165(b).

(iii) If the halogen reduction device used to comply with § 65.83(b)(1) for low-throughput transfer racks, is also used to comply with § 65.63(b)(1) for process vents, or § 65.83(b)(1) for high-throughput transfer racks, a performance test required by § 65.154(b) is acceptable to demonstrate compliance with § 65.83(b)(1) for low-throughput transfer racks. The owner or operator is not required to prepare a design evaluation for the halogen reduction device as described in paragraph (b)(3)(i) of this section, if a performance test will be performed which meets the following criteria:

(A) The performance test demonstrates that the halogen reduction device achieves greater than or equal to the required control efficiency specified in § 65.83(b)(1) for transfer racks; and

(B) The performance test is submitted as part of the Initial Compliance Status Report as specified in § 65.165(b).

(c) ***Nonflare control device monitoring requirements.***

(1) Unless previously established under an applicable standard prior to the implementation date of this part as specified in § 65.1(f), the owner or operator shall submit with the Initial Compliance Status Report a monitoring plan containing the information specified in § 65.165(b) to identify the parameters that will be monitored to assure proper operation of the control device. The owner or operator of a halogenated low-throughput transfer rack vent stream routed to a combustion device and then to a halogen reduction device to meet the specifications of § 65.83(b)(1) shall submit with the Initial Compliance Status Report a monitoring plan containing the information specified in § 65.165(b) to identify the parameters that will be monitored to assure proper operation of the halogen reduction device.

(2) The owner or operator shall monitor the parameters specified in the Initial Compliance Status Report or in the operating permit. Records shall be generated as specified in § 65.163(b)(1).

§ 65.146 Nonflare control devices used for equipment leaks only.

(a) ***Equipment and operating requirements.***

(1) Owners or operators using a nonflare control device to meet the applicable requirements in § 65.115(b) shall meet the requirements of this section.

(2) Control devices used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) ***Performance test requirements.*** A performance test is not required for any nonflare control device used only to control emissions from equipment leaks.

(c) ***Monitoring requirements.*** Owners or operators of control devices that are used only to comply with the provisions of § 65.115(b) shall monitor these control devices to ensure that they are operated and maintained in conformance with their design. The owner or operator shall maintain the records as specified in § 65.163(d).

§ 65.147 Flares.

- (a) **Flare equipment and operating requirements.** Flares subject to this subpart shall meet the performance requirements of paragraphs (a)(1) through (7) of this section.
- (1) Flares shall be operated at all times when emissions are vented to them.
 - (2) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (b)(3)(i) of this section, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
 - (3) Flares shall be operated with a flare flame or at least one pilot flame present at all times, as determined by the methods specified in paragraph (c) of this section.
 - (4) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (a)(4)(ii) of this section and the maximum tip velocity specifications in paragraph (a)(6) of this section, or adhering to the requirements in paragraph (a)(4)(i) of this section.
 - (i)
 - (A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{\max} , as determined by Equation 147-1 of this section:

$$V_{\max} = [X_{H_2} - K_1] \cdot K_2 \quad (\text{Eq. 147-1})$$

Where:

V_{\max} = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9 (m/sec)/volume-percent hydrogen.

X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77 (incorporated by reference as specified in § 65.13).

- (B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(3)(iii) of this section.
- (ii) Flares shall be used only when the net heating value of the gas being combusted is 11.2 megajoules per standard cubic meter (300 British thermal units per standard cubic foot) or greater if the flare is steam-assisted or air-assisted, or when the net heating value of the gas being combusted is 7.45 megajoules per standard cubic meter (200 British thermal units per standard cubic foot) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (b)(3)(ii) of this section.
- (5) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

- (6) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity as determined by the methods specified in paragraph (b)(3)(iii) of this section, less than 18.3 meters per second (60 feet per sec) except as provided in the following two paragraphs, as applicable:
- (i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity as determined by the methods specified in paragraph (b)(3)(iii) of this section, equal to or less than 122 meters per second (400 feet per second) if the net heating value of the gas being combusted is greater than 37.3 megajoules per standard cubic meter (1,000 British thermal units per standard cubic foot).
- (ii) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity as determined by the methods specified in paragraph (b)(3)(iii) of this section, less than the velocity, V_{\max} , and less than 122 meters per second (400 feet per sec), where the maximum permitted velocity, V_{\max} , is determined by Equation 147-2 of this section:

$$\text{Log}10 (V_{\max}) = (H_T + 28.8)/31.7 \quad (\text{Eq. 147-2})$$

Where:

V_{\max} = Maximum permitted velocity, meters per second.

28.8 = Constant.

31.7 = Constant.

H_T = The net heating value as determined in paragraph (b)(3)(ii) of this section.

- (7) Air-assisted flares shall be designed for and operated with an exit velocity as determined by the methods specified in paragraph (b)(3)(iii) of this section, less than the velocity, V_{\max} , where the maximum permitted velocity, V_{\max} , is determined by Equation 147-3 of this section:

$$V_{\max} = 8.706 + 0.7084 (H_T) \quad (\text{Eq. 147-3})$$

Where:

V_{\max} = Maximum permitted velocity, meters per second.

8.706 = Constant.

0.7084 = Constant.

H_T = The net heating value as determined in paragraph (b)(3)(ii) of this section.

(b) **Flare compliance determination.**

- (1) Unless an initial flare compliance determination of the flare was previously conducted and submitted under the referencing subpart, the owner or operator shall conduct an initial flare compliance determination of any flare used to comply with the provisions of this subpart. Flare compliance determination records shall be kept as specified in § 65.159(a) and (b) and a flare compliance

determination report shall be submitted as specified in § 65.164. An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet regulated material or TOC concentration when a flare is used.

- (2) Unless already permitted by the applicable title V permit, if an owner or operator elects to use a flare to replace an existing control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a). Upon implementing the change, a flare compliance determination shall be performed using the methods specified in paragraph (b)(3) of this section within 180 days. The compliance determination report shall be submitted to the Administrator within 60 days of completing the determination as provided in § 65.164(b)(2). If an owner or operator elects to use a flare to replace an existing final recovery device that is used on a Group 2A process vent, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b) and submit the notification specified in § 65.167(a).
- (3) Flare compliance determinations shall meet the requirements specified in paragraphs (b)(3)(i) through (iv) of this section.
 - (i) Method 22 of appendix A of part 60 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours, except for transfer racks as provided in either one of the following:
 - (A) For transfer racks, if the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.
 - (B) For transfer racks, if additional loading cycles are initiated within the 2-hour period, then visible emissions observations shall be conducted for the additional cycles.
 - (ii) The net heating value of the gas being combusted in a flare shall be calculated using Equation 147-4 of this section:

$$H_T = K_1 \sum_{i=1}^n D_i H_i \quad (\text{Eq. 147-4})$$

Where:

H_T = Net heating value of the sample, megajoules per standard cubic meter; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 millimeters of mercury (30 inches of mercury), but the standard temperature for determining the volume corresponding to 1 mole is 20 °C;

$K_1 = 1.740 \times 10^{-7}$ (parts per million by volume)⁻¹ (gram-mole per standard cubic meter) (megajoules per kilocalories), where the standard temperature for gram mole per standard cubic meter is 20 °C;

D_j = Concentration of sample component j, in parts per million by volume on a wet basis, as measured for organics by Method 18 of appendix A of 40 CFR part 60 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 (incorporated by reference as specified in § 65.13); and

H_j = Net heat of combustion of sample component j , kilocalories per gram-mole at 25 °C and 760 millimeters of mercury (30 inches of mercury). The heats of combustion of stream components may be determined using ASTM D2382-76 (incorporated by reference as specified in § 65.13) if published values are not available or cannot be calculated.

- (iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Method 2, 2A, 2C, or 2D of appendix A of 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.
- (iv) Flare flame or pilot monitors, as applicable, shall be operated during any flare compliance determination.
- (c) **Flare monitoring requirements.** Where a flare is used, a device (including but not limited to a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of continuously detecting that at least one pilot flame or the flare flame is present is required. Flame monitoring and compliance records shall be kept as specified in § 65.159(c) and (d).

§ 65.148 Incinerators.

- (a) **Incinerator equipment and operating requirements.**
 - (1) Owners or operators using incinerators to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirement as specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(A) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
 - (2) Incinerators used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.
- (b) **Incinerator performance test requirements.**
 - (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart and except as specified in § 65.157(b) and paragraph (b)(2) of this section, the owner or operator shall conduct an initial performance test of any incinerator used to comply with the provisions of this subpart according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164. As provided in § 65.145(b)(1), a performance test may be used as an alternative to the design evaluation for storage vessels and low-throughput transfer rack controls. As provided in § 65.146(b), no performance test is required for equipment leaks.
 - (2) An owner or operator is not required to conduct a performance test for a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O. The owner or operator shall report as specified in § 65.165(f).
 - (3) Unless already permitted by the applicable title V permit, if an owner or operator elects to use an incinerator to replace an existing control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, an incinerator performance test shall be performed using the

methods specified in § 65.157 and within 180 days if required by paragraph (b)(1) of this section. The performance test report shall be submitted to the Administrator within 60 days of completing the determination as provided in § 65.164(b)(2). If an owner or operator elects to use an incinerator to replace an existing recovery device that is used on a Group 2A process vent, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b) and submit the notification specified in § 65.167(a).

(c) Incinerator monitoring requirements.

- (1) Where an incinerator is used, a temperature monitoring device capable of providing a continuous record that meets the provisions specified in paragraph (c)(1)(i) or (ii) of this section is required. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
 - (i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the fire box or in the ductwork immediately downstream of the fire box in a position before any substantial heat exchange occurs.
 - (ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.
- (2) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the incinerator. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications of § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.149 Boilers and process heaters.

(a) Boiler and process heater equipment and operating requirements.

- (1) Owners or operators using boilers and process heaters to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirement as specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(B) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
- (2) The vent stream shall be introduced into the flame zone of the boiler or process heater.
- (3) Boilers and process heaters used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) Boiler and process heater performance test requirements.

- (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart, and except as specified in § 65.157(b) and paragraph (b)(2) of this section, the owner or operator shall conduct an initial performance test of any boiler or process heater used to comply with the provisions of this subpart according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164. As provided in § 65.145(b)(1), a performance test may be used as an alternative to the design evaluation for storage vessels and low-throughput transfer rack controls. As provided in § 65.146(b), no performance test is required to demonstrate compliance for equipment leaks.

- (2) An owner or operator is not required to conduct a performance test when any of the control devices specified in paragraphs (b)(2)(i) through (iii) of this section are used. The owner or operator shall report as specified in § 65.165(f).
 - (i) A boiler or process heater with a design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater.
 - (ii) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel.
 - (iii) A boiler or process heater burning hazardous waste for which the owner or operator meets either of the following requirements:
 - (A) The boiler or process heater has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or
 - (B) The boiler or process heater has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
- (3) Unless already permitted by the applicable title V permit, if an owner or operator elects to use a boiler or process heater to replace an existing control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, a boiler or process heater performance test shall be performed using the methods specified in §§ 65.157 and 65.158 within 180 days if required by paragraph (b)(1) of this section. The performance test report shall be submitted to the Administrator within 60 days of completing the determination as provided in § 65.164(b)(2). If an owner or operator elects to use a boiler or process heater to replace an existing recovery device that is used on a Group 2A process vent, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b) and submit the notification specified in § 65.167(a).

(c) ***Boiler and process heater monitoring requirements.***

- (1) Where a boiler or process heater of less than 44 megawatts (150 million British thermal units per hour) design heat input capacity is used and the regulated vent stream is not introduced as or with the primary fuel, a temperature monitoring device in the fire box capable of providing a continuous record is required. Any boiler or process heater in which all vent streams are introduced with primary fuel or are used as the primary fuel is exempt from monitoring. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
- (2) Where monitoring is required, the owner or operator shall establish a range for monitored parameters that indicates proper operation of the boiler or process heater. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications of § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.150 Absorbers used as control devices.

(a) ***Absorber equipment and operating requirements.***

- (1) Owners or operators using absorbers to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirements as specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(A) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
- (2) Absorbers used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) ***Absorber performance test requirements.***

- (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart and except as specified in § 65.157(b), the owner or operator shall conduct an initial performance test of any absorber used as a control device to comply with the provisions of this subpart according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164. As provided in § 65.145(b)(1), a performance test may be used as an alternative to the design evaluation for storage vessels and low-throughput transfer rack controls. As provided in § 65.146(b), no performance test is required to demonstrate compliance for equipment leaks.
- (2) Unless already permitted by the applicable title V permit, if an owner or operator elects to use an absorber to replace an existing recovery or control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, either of the following provisions, as applicable, shall be followed:
 - (i) ***Replace final recovery device.*** If an owner or operator elects to replace the final recovery device on a process vent with an absorber used as a control device, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b).
 - (ii) ***Replace control device.*** If an owner or operator elects to replace a control device on a Group 1 process vent or a high-throughput transfer rack with an absorber used as a control device, the owner or operator shall perform a performance test using the methods specified in §§ 65.157 and 65.158 within 180 days. The performance test report shall be submitted to the Administrator within 60 days of completing the test as provided in § 65.164(b)(2).

(c) ***Absorber monitoring requirements.***

- (1) Where an absorber is used as a control device, either an organic monitoring device capable of providing a continuous record or a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each capable of providing a continuous record, shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
- (2) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the absorber. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications of § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.151 Condensers used as control devices.

(a) ***Condenser equipment and operating requirements.***

- (1) Owners or operators using condensers to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirements as specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(A) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
- (2) Condensers used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) **Condenser performance test requirements.**

- (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart and except as specified in § 65.157(b), the owner or operator shall conduct an initial performance test of any condenser used as a control device to comply with the provisions of this subpart according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164. As provided in § 65.145(b)(1), a performance test may be used as an alternative to the design evaluation for storage vessels and low-throughput transfer rack controls. As provided in § 65.146(b), no performance test is required to demonstrate compliance for equipment leaks.
- (2) Unless already permitted by the applicable title V permit, if an owner or operator elects to use a condenser to replace an existing recovery or control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, either of the following provisions, as applicable, shall be followed:
 - (i) **Replace final recovery device.** If an owner or operator elects to replace the final recovery device on a process vent with a condenser used as a control device, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b).
 - (ii) **Replace control device.** If an owner or operator elects to replace a control device on a Group 1 process vent or a high-throughput transfer rack with a condenser used as a control device, the owner or operator shall perform a performance test using the methods specified in §§ 65.157 and 65.158 within 180 days. The performance test report shall be submitted to the Administrator within 60 days of completing the test as provided in § 65.164(b)(2).

(c) **Condenser monitoring requirements.**

- (1) Where a condenser is used as a control device, an organic monitoring device capable of providing a continuous record or a condenser exit (product side) temperature monitoring device capable of providing a continuous record shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
- (2) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the condenser. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications in § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.152 Carbon adsorbers used as control devices.

(a) *Carbon adsorber equipment and operating requirements.*

- (1) Owners or operators using carbon adsorbers to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirements as specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(A) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
- (2) Carbon adsorbers used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) *Carbon adsorber performance test requirements.*

- (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart and except as specified in § 65.157(b), the owner or operator shall conduct an initial performance test of any carbon adsorber used as a control device to comply with the provisions of this subpart according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164. As provided in § 65.145(b)(1), a performance test may be used as an alternative to the design evaluation for storage vessels and low-throughput transfer rack controls. As provided in § 65.146(b), no performance test is required to demonstrate compliance for equipment leaks.
- (2) Unless already permitted by the applicable title V permit, if an owner or operator elects to use a carbon adsorber to replace an existing recovery or control device at a later date, the owner or operator shall notify the Administrator either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, either of the following provisions, as applicable, shall be followed:
 - (i) **Replace final recovery device.** If an owner or operator elects to replace the final recovery device on a process vent with a carbon adsorber used as a control device, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b).
 - (ii) **Replace control device.** If an owner or operator elects to replace a control device on a Group 1 process vent or high-throughput transfer rack with a carbon adsorber used as a control device, the owner or operator shall perform a performance test using the methods specified in §§ 65.157 and 65.158 within 180 days. The performance test report shall be submitted to the Administrator within 60 days of completing the test as provided in § 65.164(b)(2).

(c) *Carbon adsorber monitoring requirements.*

- (1) Where a carbon adsorber is used as a control device, an organic monitoring device capable of providing a continuous record, or an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle, and a carbon-bed temperature monitoring device capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle, shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.

- (2) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the carbon adsorber. Where the regeneration stream flow and carbon-bed temperature are monitored, the range shall be in terms of the total regeneration stream flow per regeneration cycle and the temperature of the carbon-bed determined within 15 minutes of the completion of the regeneration cooling cycle. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications in § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.153 Absorbers, condensers, carbon adsorbers, and other recovery devices used as final recovery devices.

(a) *Final recovery device equipment and operating requirements.*

- (1) Owners or operators using a recovery device to meet the requirement to operate and maintain a TRE above 1.0 as specified in § 65.63(a)(3) for process vents shall meet the requirements of this section.
- (2) Recovery devices used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) *Recovery device performance test requirements.*

- (1) There are no performance test requirements for recovery devices. Records of TRE index value determination shall be generated as specified in § 65.160(c).
- (2) ***Replace a final recovery device or control device.*** Unless already permitted by the applicable title V permit, if an owner or operator elects to use a recovery device to replace an existing final recovery or control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b).

(c) *Recovery device monitoring requirements.*

- (1) Where an absorber is the final recovery device in the recovery system and the TRE index value is between 1.0 and 4.0, either an organic monitoring device capable of providing a continuous record, or a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each capable of providing a continuous record, shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
- (2) Where a condenser is the final recovery device in the recovery system and the TRE index value is between 1.0 and 4.0, an organic monitoring device capable of providing a continuous record, or a condenser exit (product side) temperature monitoring device capable of providing a continuous record, shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
- (3) Where a carbon adsorber is the final recovery device in the recovery system and the TRE index value is between 1.0 and 4.0, an organic monitoring device capable of providing a continuous record, or an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle, and a carbon-bed temperature monitoring device capable of recording the carbon-bed

temperature after each regeneration and within 15 minutes of completing any cooling cycle, shall be used. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.

- (4) Unless previously approved by the Administrator under an applicable standard prior to the implementation date of this part, as specified in § 65.1(f), if an owner or operator uses a recovery device other than those listed in this subpart, the owner or operator shall submit a description of planned monitoring, reporting and recordkeeping procedures as required under § 65.162(e). The Administrator will approve or deny the proposed monitoring, reporting and recordkeeping requirements as part of the review of the submission or permit application or by other appropriate means.
- (5) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the recovery device. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications in § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart. Where the regeneration stream flow and carbon-bed temperature are monitored, the range shall be in terms of the total regeneration stream flow per regeneration cycle, and the temperature of the carbon-bed determined within 15 minutes of the completion of the regeneration cooling cycle.

§ 65.154 Halogen scrubbers and other halogen reduction devices.

(a) Halogen scrubber and other halogen reduction device equipment and operating requirements.

- (1) An owner or operator of halogen scrubbers and other halogen reduction devices subject to this subpart shall reduce the overall emissions of hydrogen halides and halogens by 99 percent, or reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour (0.99 pound per hour) as specified in § 65.63(b) for process vents, or § 65.83(b) for transfer racks, as applicable, and shall meet the requirements of this section.
- (2) Halogen scrubbers and other halogen reduction devices used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) Halogen scrubber and other halogen reduction device performance test requirements. Unless an initial performance test was previously conducted and submitted under the referencing subpart, an owner or operator of a combustion device followed by a halogen scrubber or other halogen reduction device to control halogenated vent streams in accordance with § 65.63(b)(1) for process vents, or § 65.83(b)(1) for transfer racks shall conduct an initial performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164.

(c) Halogen scrubber and other halogen reduction device monitoring requirements.

- (1) Where a halogen scrubber is used, the monitoring equipment specified in paragraphs (c)(1)(i) and (ii) of this section is required for the scrubber. Monitoring results shall be recorded as specified in § 65.161. General requirements for monitoring and continuous parameter monitoring systems are contained in § 65.156.
 - (i) A pH monitoring device capable of providing a continuous record shall be installed to monitor the pH of the scrubber effluent.

- (ii) A flow meter capable of providing a continuous record shall be located at the scrubber influent for liquid flow. Gas stream flow shall be determined using one of the following procedures:
 - (A) The owner or operator may determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.
 - (B) If the scrubber is subject to regulations in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for the chemical manufacturing process unit of which it is part, as specified in 40 CFR 63.100(k) (if the referencing subpart is 40 CFR part 63, subpart F), or prior to the implementation date as specified in § 65.1(f) (for all other referencing subparts), the owner or operator may determine gas stream flow by the method that had been utilized to comply with those regulations. A determination that was conducted prior to that compliance date may be utilized to comply with this subpart if it is still representative.
 - (C) The owner or operator may prepare and implement a gas stream flow determination plan that documents an appropriate method that will be used to determine the gas stream flow. The plan shall require determination of gas stream flow by a method that will at least provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than startups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas stream flow and a description of the records that will be maintained to document the determination of gas stream flow. The owner or operator shall maintain the plan as specified in § 65.5.
- (2) Where a halogen reduction device other than a scrubber is used, the procedures in § 65.162(e) shall be followed to establish monitoring parameters.
- (3) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the scrubber or other halogen reduction device. In order to establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications in § 65.157(b)(1), or upon existing ranges or limits established under a referencing subpart.

§ 65.155 Other control devices.

(a) *Other control device equipment and operating requirements.*

- (1) Owners or operators using a control device other than one listed in §§ 65.147 through 65.152 to meet the 98 weight-percent emission reduction or 20 parts per million by volume outlet concentration requirements specified in § 65.63(a)(2), or 40 CFR 60.562-1(a)(1)(i)(A) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, as applicable, shall meet the requirements of this section.
- (2) Other control devices used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) *Other control device performance test requirements.*

- (1) Unless an initial performance test was previously conducted and submitted under the referencing subpart, an owner or operator of a control device other than those specified in §§ 65.147 through 65.152, to comply with § 65.63(a)(2) for process vents, or § 65.83(a)(1) for high-throughput transfer racks, shall perform an initial performance test according to the procedures in §§ 65.157 and 65.158. Performance test records shall be kept as specified in § 65.160(a) and (b), and a performance test report shall be submitted as specified in § 65.164.
- (2) Unless already permitted by the applicable title V permit, if an owner or operator elects to use another control device to replace an existing control device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 65.167(a) before implementing the change. Upon implementing the change, another control device performance test shall be performed using the methods specified in §§ 65.157 and 65.158 within 180 days if required by paragraph (b)(1) of this section. The performance test report shall be submitted to the Administrator within 60 days of completing the determination as provided in § 65.164(b)(2). If an owner or operator elects to use a control device to replace an existing recovery device that is used on a Group 2A process vent, the owner or operator shall comply with the applicable provisions of §§ 65.63(e) and 65.67(b) and submit the notification specified in § 65.167(a).

(c) ***Other control device monitoring requirements.***

- (1) Unless previously submitted and approved under the referencing subpart, if an owner or operator uses a control device other than those listed in this subpart, the owner or operator shall submit a description of planned monitoring, reporting, and recordkeeping procedures as required under § 65.162(e). The Administrator will approve, deny, or modify based on the reasonableness of the proposed monitoring, reporting, and recordkeeping requirements as part of the review of the submission or permit application or by other appropriate means.
- (2) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the control device. To establish the range, the information required in § 65.165(c) shall be submitted in the Initial Compliance Status Report or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications in § 65.157(b)(1) or upon existing ranges or limits established under a referencing subpart.

§ 65.156 General monitoring requirements for control and recovery devices.

(a) ***General monitoring requirement applicability.***

- (1) This section applies to the owner or operator of a regulated source required to monitor under this subpart.
- (2) Flares subject to § 65.147(c) are not subject to the requirements of this section.
- (3) Flow indicators are not subject to the requirements of this section.

(b) ***Conduct of monitoring.***

- (1) Monitoring shall be conducted as set forth in this section and in the relevant sections of this subpart unless either of the following provisions applies:
 - (i) The Administrator specifies or approves the use of minor or intermediate changes in the specified monitoring requirements or procedures as provided in § 65.7(b), (c), and (d); or

(ii) The Administrator specifies or approves the use of major changes in the specified monitoring requirements or procedures as provided in § 65.7(b), (c), and (d).

(2) When one CPMS is used as a backup to another CPMS, the owner or operator shall report the results from the CPMS used to meet the monitoring requirements of this subpart. If both such CPMS are used during a particular reporting period to meet the monitoring requirements of this part, then the owner or operator shall report the results from each CPMS for the relevant compliance period.

(c) ***Operation and maintenance of continuous parameter monitoring systems.***

(1) All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturers specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(2) The owner or operator of a regulated source shall maintain and operate each CPMS as specified in this section or in a relevant subpart and in a manner consistent with good air pollution control practices.

(i) The owner or operator of a regulated source shall ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment shall be readily available.

(ii) Except for Group 2A process vents, if the startup, shutdown, and malfunction plan is followed during a CPMS startup, shutdown, or malfunction and the CPMS is repaired immediately, this action shall be reported in the semiannual startup, shutdown, and malfunction report required under § 65.6(c).

(iii) The Administrator's determination of whether acceptable operation and maintenance procedures are being used for the CPMS will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records, manufacturer's recommendations and specifications, and inspection of the CPMS.

(3) All CPMS shall be installed and operational, and the data verified as specified in this subpart either prior to or in conjunction with conducting performance tests. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(4) All CPMS shall be installed such that representative measurements of parameters from the regulated source are obtained.

(5) In accordance with § 65.3(a)(3), except for system breakdowns, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments, all CPMS shall be in continuous operation when emissions are being routed to the monitored device.

(d) Except for Group 2A process vents, the parameter monitoring data shall be used to determine compliance with the required operating conditions for the monitored control devices. For each excursion, except for excused excursions and the excursions described in paragraph (d)(3) of this section, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions.

- (1) An excursion means any of the three cases listed in paragraphs (d)(1)(i) through (iii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (d)(1)(i), (ii), or (iii) of this section, this is considered a single excursion for the day for the control device.
 - (i) When the daily average value of one or more monitored parameters is outside the permitted range.
 - (ii) When the period of control or recovery device operation is 4 hours or greater in an operating day, and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.
 - (iii) When the period of control or recovery device operation is less than 4 hours in an operating day, and more than 1 hour during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.
 - (iv) Monitoring data are insufficient to constitute a valid hour of data as used in paragraphs (d)(1)(ii) and (iii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 65.162(d)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than four data values recorded during the hour.
- (2) One excused excursion for each control device or recovery device for each semiannual period is allowed.
- (3) The following excursions are not violations and do not count as excused excursions:
 - (i) Excursions which occur during periods of startup, shutdown, and malfunction, when the source is being operated during such periods to minimize emissions in accordance with § 65.3(a)(3).
 - (ii) Excursions which occur due to failure to collect a valid hour of data during periods of startup, shutdown, and malfunction, when the source is being operated during such periods in accordance with § 65.3(a)(3).
 - (iii) Excursions which occur during periods of nonoperation of the regulated source or portion thereof, resulting in cessation of the emissions to which monitoring applies.
- (4) Nothing in paragraph (d) of this section shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of this part.
- (5) Paragraph (d) of this section applies to emission points and control devices for which continuous monitoring is required by this subpart, and to alternatives to continuous monitoring systems such as provided in § 65.162(d)(3) and (d)(4). Paragraph (d)(3) of this section also applies to emission points and control devices which are not subject to continuous monitoring requirements, such as inspections of the closed vent system.
- (e) **Alternative monitoring parameter.** An owner or operator may request approval to monitor control, recovery, halogen scrubber, or halogen reduction device operating parameters other than those specified in this subpart by following the procedures specified in § 65.162(e).

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20472, Apr. 20, 2006]

§ 65.157 Performance test and flare compliance determination requirements.

- (a) **Performance tests and flare compliance determinations.** Where §§ 65.145 through 65.155 require, or the owner or operator elects to conduct, a performance test of a nonflare control device or a halogen reduction device, or a compliance determination for a flare, the requirements of paragraphs (b) through (d) of this section apply.
- (b) **Prior test results and waivers.** Initial performance tests and initial flare compliance determinations are required only as specified in this subpart.
 - (1) Unless requested by the Administrator, an owner or operator is not required to conduct a performance test or flare compliance determination under this subpart if a prior performance test or compliance determination was conducted using the same methods specified in § 65.158, and either no process changes have been made since the test or the owner or operator can demonstrate to the Administrator's satisfaction that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.
 - (2) Individual performance tests and flare compliance determinations may be waived upon written application to the Administrator per § 65.164(b)(3) if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance under 40 CFR part 63, or a waiver of compliance under 40 CFR part 61, or the owner or operator has requested an extension of compliance under 40 CFR part 63, or a waiver of compliance under 40 CFR part 61, and the Administrator is still considering that request.
 - (3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notification is given to the owner or operator of the source.
- (c) **Performance tests and flare compliance determinations schedule.** Except as specified in paragraphs (c)(1)(viii), (c)(1)(ix), (c)(1)(x), and (c)(1)(xi) of this section, unless a waiver of performance testing or flare compliance determination is obtained under this section or the conditions of another subpart of this part, the owner or operator shall perform such tests specified in the following:
 - (1) Unless a waiver of performance testing or flare compliance determination is obtained under this section or the conditions of another subpart of this part, the owner or operator shall perform such tests specified in the following:
 - (i) Within 180 days after the effective date of a relevant standard for a new source that has an initial startup date before the effective date of that standard; or
 - (ii) Within 180 days after initial startup for a new source that has an initial startup date after the effective date of a relevant standard; or
 - (iii) Within 180 days after the compliance date specified in a referencing subpart for an existing source or within 180 days after startup of an existing source if the source begins operation after the effective date of the relevant 40 CFR part 63 emission standard; or
 - (iv) Within 180 days after the compliance date for an existing source subject to an emission standard established pursuant to section 112(f) of the Act; or
 - (v) Within 180 days after the termination date of the source's extension of compliance or a waiver of compliance for an existing source that obtains an extension of compliance under 40 CFR 63.6(i) or a waiver of compliance under 40 CFR 61.11; or

- (vi) Within 180 days after the compliance date for a new source, subject to an emission standard established pursuant to section 112(f) of the Act, for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of the relevant standard established pursuant to section 112(f) of the Act (see 40 CFR 63.6(b)(4)); or
- (vii) When a promulgated emission standard under 40 CFR part 63 is more stringent than the standard that was proposed (see 40 CFR 63.6(b)(3)), the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date or within 180 days after startup of the source, whichever is later. If the promulgated standard is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance initially with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after startup of the source, whichever is later, to demonstrate compliance with the promulgated standard.
- (viii) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure, the owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.
- (ix) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.
- (x) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.
- (xi) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (c)(1)(viii), (c)(1)(ix), and (c)(1)(x) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

(2) The Administrator may require an owner or operator to conduct performance tests and compliance determinations at the regulated source at any time when the action is authorized by section 114 of the Act.

(d) **Performance testing facilities.** If required to do performance testing, the owner or operator of each new regulated source and, at the request of the Administrator, the owner or operator of each existing regulated source, shall provide performance testing facilities as specified in the following:

- (1) Sampling ports adequate for test methods applicable to such source. This includes, as applicable, the following requirements:

- (i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and
 - (ii) Providing a stack or duct free of cyclonic flow during performance tests as demonstrated by applicable test methods and procedures;
- (2) Safe sampling platform(s);
- (3) Safe access to sampling platform(s);
- (4) Utilities for sampling and testing equipment; and
- (5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.

[65 FR 78285, Dec. 14, 2000, as amended at 72 FR 48942, Aug. 27, 2007; 72 FR 73626, Dec. 28, 2007]

§ 65.158 Performance test procedures for control devices.

- (a) **General procedures.** Where §§ 65.145 through 65.155 require, or the owner or operator elects to conduct, a performance test of a control device or a halogen reduction device, an owner or operator shall comply with the requirements of (a)(1) through (3) of this section, as applicable.
 - (1) Performance tests shall be conducted at maximum representative operating conditions for the process unless the Administrator specifies or approves alternate operating conditions. During the performance test, an owner or operator may operate the control or halogen reduction device at maximum or minimum representative operating conditions for monitored control or halogen reduction device parameters, whichever results in lower emission reduction. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.
 - (2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this subpart, in each relevant standard, and, if required, in applicable appendices of 40 CFR parts 51, 60, 61, and 63 unless the Administrator allows revisions to the test methods as specified in one or more of the following five paragraphs:
 - (i) The Administrator specifies or approves, in specific cases, the use of a test method with minor or intermediate changes in methodology; or
 - (ii) The Administrator approves the use of a major change to a test method, the results of which the Administrator has determined to be adequate for indicating whether a specific regulated source is in compliance; or
 - (iii) Intermediate and major changes to a test method shall be validated using the applicable procedures of Method 301 of appendix A of 40 CFR part 63; or
 - (iv) The Administrator waives the requirement for the performance test as provided in § 65.157(b)(2) because the owner or operator of a regulated source has demonstrated by other means to the Administrator's satisfaction that the regulated source is in compliance with the relevant standard; or
 - (v) The Administrator approves the use of an equivalent method.

(3) Each performance test shall consist of three separate runs using the applicable test method. Except as provided in paragraphs (a)(3)(i) and (ii) of this section, each run shall be conducted for at least 1 hour and under the conditions specified in this section. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

(i) For control devices that are used to control emissions from high-throughput transfer racks, and that are capable of continuous vapor processing but do not handle continuous emissions or emissions from high-throughput transfer racks that load simultaneously from multiple loading arms, each run shall represent at least one complete tank truck or tank car loading period during which regulated materials are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(ii) For intermittent vapor processing systems used for controlling high-throughput transfer rack emissions that do not handle continuous emissions or multiple loading arms of a high-throughput transfer rack that load simultaneously, each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(b) **Test methods.** Where §§ 65.145 through 65.155 require, or the owner or operator elects to conduct, a performance test of a control device or a halogen reduction device, an owner or operator shall conduct that performance test using the procedures in paragraphs (b)(1) through (4) of this section, as applicable. The regulated material concentration and percent reduction may be measured as either total regulated material or as TOC (minus methane and ethane) according to the procedures specified.

(1) Method 1 or 1A of appendix A of 40 CFR part 60 as appropriate, shall be used for selection of the sampling sites.

(i) For determination of compliance with a percent reduction requirement of total regulated material or TOC, sampling sites shall be located at the inlet of the control device as specified in the following and at the outlet of the control device:

(A) For process vents, the control device inlet sampling site shall be located after the final product recovery device.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts (150 million British thermal units per hour), selection of the location of the inlet sampling sites shall ensure the measurement of total regulated material or TOC (minus methane and ethane) concentrations, as applicable, in all vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) For determination of compliance with the 20 parts per million by volume total regulated material or TOC limit in § 65.63(a)(2), § 65.83(a)(1), and 40 CFR 60.562-1(a)(1)(i)(A), the sampling site shall be located at the outlet of the control device.

- (2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of appendix A of 40 CFR part 60, as appropriate.
- (3) To determine compliance with the 20 parts per million by volume total regulated material or TOC (minus methane and ethane) limit, the owner or operator shall use Method 18 of appendix A of 40 CFR part 60 to measure either TOC minus methane and ethane or total regulated material, as applicable. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A of 40 CFR part 63 may be used. Method 25A may be used for transfer racks as detailed in paragraph (b)(3)(iv) of this section. The procedures specified in paragraphs (b)(3)(i) through (iv) of this section shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen.
 - (i) Except as provided in paragraphs (a)(3)(i) and (ii) of this section, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.
 - (ii) The concentration of either TOC (minus methane or ethane) or total regulated material shall be calculated according to the following two paragraphs, as appropriate:
 - (A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using Equation 158-1 of this section:

$$C_{\text{REG. or TOC}} = \sum_{i=1}^x \frac{\left(\sum_{j=1}^n C_{ji} \right)}{x} \quad (\text{Eq. 158-1})$$

Where:

$C_{\text{REG. or TOC}}$ = Concentration of total regulated material or concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

x = Number of samples in the sample run.

n = Number of components in the sample.

C_{ji} = Concentration of sample components j of sample i , dry basis, parts per million by volume.

- (B) The total regulated material (C_{REG}) shall be computed according to equation 158-1 of this section except that only the regulated species shall be summed. Where the regulated material is organic HAP's, the list of organic HAP's provided in table 2 of 40 CFR part 63, subpart F, shall be used.
 - (iii) The concentration of TOC or total regulated material, as applicable, shall be corrected to 3 percent oxygen if a combustion device is the control device.

- (A) The emission rate correction factor (or excess air) integrated sampling and analysis procedures of Method 3B of appendix A of 40 CFR part 60 shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the regulated material or organic compound samples, and the samples shall be taken during the same time that the regulated material or organic compound samples are taken.
- (B) The concentration corrected to 3 percent oxygen (C_c) shall be computed using Equation 158-2 of this section:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \quad (\text{Eq. 158-2})$$

Where:

C_c = Concentration of TOC or regulated material corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = Concentration of TOC (minus methane and ethane) or regulated material, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percentage by volume.

- (iv) Method 25A of appendix A of 40 CFR part 60 may be used for the purpose of determining compliance with the 20 parts per million by volume limit specified in § 65.83(a)(1) for transfer racks. If Method 25A of appendix A of 40 CFR part 60 is used, the following procedures shall be used to calculate the concentration of organic compounds (C_{TOC}):
 - (A) The principal organic HAP in the vent stream shall be used as the calibration gas.
 - (B) The span value for Method 25A of appendix A of 40 CFR part 60 shall be between 1.5 and 2.5 times the concentration being measured.
 - (C) Use of Method 25A of appendix A of 40 CFR part 60 is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.
 - (D) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (b)(3)(iii) of this section.
- (4) To determine compliance with a percent reduction requirement, the owner or operator shall use Method 18 of appendix A of 40 CFR part 60; alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A of 40 CFR part 63 may be used. Method 25A of appendix A of 40 CFR part 60 may be used for transfer racks as detailed in paragraph (b)(4)(v) of this section. Procedures specified in paragraphs (b)(4)(i) through (v) of this section shall be used to calculate percent reduction efficiency.
 - (i) Except as provided in paragraphs (a)(3)(i) and (ii) of this section, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

- (ii) The mass rate of either TOC (minus methane and ethane) or total regulated material (E_i , E_o) shall be computed as applicable.

(A) Equations 158-3 and 158-4 of this section shall be used:

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad (\text{Eq. 158-3})$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad (\text{Eq. 158-4})$$

Where:

E_i , E_o = Emission rate of TOC (minus methane and ethane) (E_{TOC}) or emission rate of total organic HAP (E_{HAP}) in the sample at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million)⁻¹ (gram-mole per standard cubic meter) (kilogram per gram) (minute per hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

n = Number of components in the sample.

C_{ij} , C_{oj} = Concentration on a dry basis of organic compound j in parts per million by volume of the gas stream at the inlet and outlet of the control device, respectively. If the TOC emission rate is being calculated, C_{ij} and C_{oj} include all organic compounds measured minus methane and ethane; if the total organic HAP emissions rate is being calculated, only organic HAP are included.

M_{ij} , M_{oj} = Molecular weight of organic compound j , gram per gram-mole, of the gas stream at the inlet and outlet of the control device, respectively.

Q_i , Q_o = Process vent flow rate, dry standard cubic meter per minute, at a temperature of 20 °C, at the inlet and outlet of the control device, respectively.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of appendix A of 40 CFR part 60 are summed using equations 158-3 and 158-4 of this section.

(C) Where the mass rate of total regulated material is being calculated, only the species comprising the regulated material shall be summed using equations 158-3 and 158-4 of this section. Where the regulated material is organic HAP's, the list of organic HAP's provided in table 2 of 40 CFR part 63, subpart F, shall be used.

- (iii) The percent reduction in TOC (minus methane and ethane) or total regulated material shall be calculated using Equation 158-5 of this section:

$$R = \frac{E_i - E_o}{E_i} (100) \quad (\text{Eq. 158-5})$$

Where:

R = Control efficiency of control device, percent.

E_i = Mass rate of TOC (minus methane and ethane) or total regulated material at the inlet to the control device as calculated under paragraph (b)(4)(ii) of this section, kilograms TOC per hour or kilograms regulated material per hour.

E_o = Mass rate of TOC (minus methane and ethane) or total regulated material at the outlet of the control device, as calculated under paragraph (b)(4)(ii) of this section, kilograms TOC per hour or kilograms total regulated material per hour.

- (iv) If the vent stream entering a boiler or process heater with a design capacity less than 44 megawatts (150 million British thermal units) is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total regulated material or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total regulated material in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total regulated material exiting the combustion device, respectively.
- (v) Method 25A of appendix A of 40 CFR part 60 may also be used for the purpose of determining compliance with the percent reduction requirement for transfer racks.
 - (A) If Method 25A of appendix A of 40 CFR part 60 is used to measure the concentration of organic compounds (C_{TOC}), the principal regulated material in the vent stream shall be used as the calibration gas.
 - (B) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.
 - (C) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.
 - (D) The mass at the inlet and outlet of the control device during each testing interval shall be calculated using Equation 158-6 of this section:

$$M_j = F K V_j C_j \quad (\text{Eq. 158-6})$$

Where:

M_j = Mass of organic compounds emitted during testing interval j, kilograms.

$F = 10^{-6}$ = Conversion factor, (cubic meters regulated material per cubic meters air) * (parts per million by volume)⁻¹.

K = Density, kilograms per standard cubic meter regulated material. You may use 659 kilograms per standard cubic meter regulated material. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of M_j .)

V_s = Volume of air-vapor mixture exhausted at standard conditions, 20 °C and 760 millimeters of mercury (30 inches of mercury), standard cubic meters.

C_t = Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis.

- (E) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^n M_{i,j}}{T} \quad (\text{Eq. 158-7})$$

$$E_o = \frac{\sum_{j=1}^n M_{o,j}}{T} \quad (\text{Eq. 158-8})$$

Where:

E_i , E_o = Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the control device, kilograms per hour.

n = Number of testing intervals.

M_{ij} , M_{oj} = Mass of organic compounds at the inlet (i) or outlet (o) during testing interval j , kilograms.

T = Total time of all testing intervals, hours.

- (c) **Halogen test method.** An owner or operator using a halogen scrubber or other halogen reduction device to control halogenated vent streams in compliance with § 65.63(b)(1) for process vents, or § 65.83(b)(1) for transfer racks, who is required to conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens, as specified in § 65.154(b), shall comply with the following procedures:

- (1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator determining compliance with the less than 0.45 kilogram per hour (0.99 pounds per hour) outlet emission limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to any releases to the atmosphere.
- (2) Except as provided in paragraph (a)(2) of this section, Method 26 or Method 26A of appendix A of 40 CFR part 60 shall be used to determine the concentration, in milligrams per dry standard cubic meter, of total hydrogen halides and halogens that may be present in the vent stream. The mass emissions of each hydrogen halide and halogen compound shall be calculated from the measured concentrations and the gas stream flow rate.

- (3) To determine compliance with the percent removal efficiency, the mass emissions for any hydrogen halides and halogens present at the inlet of the halogen reduction device shall be summed together. The mass emissions of the compounds present at the outlet of the scrubber or other halogen reduction device shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.
- (4) To demonstrate compliance with the less than 0.45 kilogram per hour (0.99 pound per hour) outlet emission limit, the test results must show that the mass emission rate of total hydrogen halides and halogens measured at the outlet of the scrubber or other halogen reduction device is below 0.45 kilogram per hour (0.99 pound per hour).

§ 65.159 Flare compliance determination and monitoring records.

- (a) **Conditions of flare compliance determination records.** Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of flare compliance determinations performed pursuant to § 65.147(b).
- (b) **Flare compliance determination records.** When using a flare to comply with this subpart, record the following information for each flare compliance determination performed pursuant to § 65.147(b):
 - (1) Flare design (i.e., steam-assisted, air-assisted, or nonassisted);
 - (2) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the flare compliance determination; and
 - (3) All periods during the flare compliance determination when all pilot flames are absent or, if only the flare flame is monitored, all periods when the flare flame is absent.
- (c) **Monitoring records.** Each owner or operator shall keep up to date and readily accessible hourly records of whether the flare flame or pilot flame monitors are continuously operating during the hour and whether the flare flame or at least one pilot flame is continuously present during the hour. For transfer racks, hourly records are required only while the transfer vent stream is being vented.
- (d) **Compliance records.**
 - (1) Each owner or operator shall keep records of the times and duration of all periods during which the flare flame and all the pilot flames are absent. This record shall be submitted in the periodic reports as specified in § 65.166(c).
 - (2) Each owner or operator shall keep records of the times and durations of all periods during which the flare flame or pilot flame monitors are not operating.

§ 65.160 Performance test and TRE index value determination records.

- (a) **Availability of performance tests records.** Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests performed pursuant to § 65.148(b), § 65.149(b), § 65.150(b), § 65.151(b), § 65.152(b), § 65.154(b), or § 65.155(b).
- (b) **Nonflare control device and halogen reduction device performance test records.** Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the data specified in paragraphs (b)(1) through (3) of this section, as applicable, measured during each performance test performed pursuant to § 65.148(b), § 65.149(b), § 65.150(b), § 65.151(b), § 65.152(b), § 65.154(b), or § 65.155(b), and also include that data in the Initial Compliance Status Report as specified

in § 65.164(a). The same data specified in paragraphs (b)(1) through (3) of this section, as applicable, shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a nonflare control device or the outlet concentration of TOC or regulated material is determined.

- (1) **Nonflare combustion device.** Where an owner or operator subject to the provisions of paragraph (b) of this section seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a nonflare combustion device, the following information shall be recorded:
 - (i) For thermal incinerators, record the fire box temperature measured at least every 15 minutes and averaged over the full period of the performance test.
 - (ii) For catalytic incinerators, record the upstream and downstream temperatures and the temperature difference across the catalyst bed measured at least every 15 minutes and averaged over the full period of the performance test.
 - (iii) For an incinerator, record the percent reduction of regulated material or TOC achieved by the incinerator determined as specified in § 65.158(b)(4), as applicable, or the concentration of regulated material or TOC (parts per million by volume, by compound) determined as specified in § 65.158(b)(3) at the outlet of the incinerator.
 - (iv) For a boiler or process heater, record a description of the location at which the vent stream is introduced into the boiler or process heater.
 - (v) For boilers or process heaters with a design heat input capacity less than 44 megawatts (150 British thermal units per hour) and where the vent stream is not introduced with or as the primary fuel, record the fire box temperature measured at least every 15 minutes and averaged over the full period of the performance test.
 - (vi) For a boiler or process heater with a design heat input capacity of less than 44 megawatts (150 British thermal units per hour) and where the vent stream is not introduced with or as the primary fuel, record the percent reduction of regulated material or TOC, or the concentration of regulated material or TOC (parts per million by volume, by compound) determined as specified in § 65.158(b)(3) at the outlet of the combustion device.
- (2) **Other nonflare control devices.** Where an owner or operator seeks to use an absorber, condenser, or carbon adsorber as a control device, the following information shall be recorded, as applicable:
 - (i) Where an absorber is used as the control device, the exit specific gravity and average exit temperature of the absorbing liquid measured at least every 15 minutes and averaged over the same time period as the performance test (both measured while the vent stream is normally routed and constituted); or
 - (ii) Where a condenser is used as the control device, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period as the performance test while the vent stream is routed and constituted normally; or
 - (iii) Where a carbon adsorber is used as the control device, the total regeneration stream mass flow during each carbon-bed regeneration cycle during the period of the performance test measured at least every 15 minutes and averaged over the same time period as the performance test (full carbon-bed cycle), and temperature of the carbon-bed after each regeneration during the period of the performance test (and within 15 minutes of completion of any cooling cycle or cycles); or

- (iv) As an alternative to paragraph (b)(2)(i), (ii), or (iii) of this section, the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber measured at least every 15 minutes and averaged over the same time period as the performance test while the vent stream is normally routed and constituted; and
 - (v) For an absorber, condenser, or carbon adsorber used as a control device, the percent reduction of regulated material or TOC achieved by the control device determined as specified in § 65.158(b)(4), or the concentration of regulated material or TOC (parts per million by volume, by compound) determined as specified in § 65.158(b)(3) at the outlet of the control device.
- (3) **Halogen reduction devices.** When using a scrubber following a combustion device to control a halogenated vent stream, record the following information:
- (i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens as specified in § 65.158(c);
 - (ii) The pH of the scrubber effluent averaged over the time period of the performance test; and
 - (iii) The scrubber liquid-to-gas ratio averaged over the time period of the performance test.
- (c) **Recovery device monitoring records during the TRE index value determination.** For Group 2A process vents, the following records, as applicable, shall be maintained and reported as specified in § 65.164(a)(3):
- (1) Where an absorber is the final recovery device in the recovery system, the exit specific gravity and average exit temperature of the absorbing liquid measured at least every 15 minutes and averaged over the same time period as the TRE index value determination (both measured while the vent stream is normally routed and constituted); or
 - (2) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period as the TRE index value determination while the vent stream is routed and constituted normally; or
 - (3) Where a carbon adsorber is the final recovery device in the recovery system, the total regeneration stream mass flow measured at least every 15 minutes and averaged over the same time during each carbon-bed regeneration cycle during the period of the TRE index value determination, and temperature of the carbon-bed after each regeneration during the period of the TRE index value determination (and within 15 minutes of completion of any cooling cycle or cycles); or
 - (4) As an alternative to paragraph (c)(1), (2), or (3) of this section, the concentration level or reading indicated by an organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber measured at least every 15 minutes and averaged over the same time period as the TRE index value determination while the vent stream is normally routed and constituted; and
 - (5) All measurements and calculations performed to determine the TRE index value of the vent stream as specified in § 65.64(h).
- (d) **Halogen concentration records.** Record the halogen concentration in the vent stream determined according to the procedures as specified in § 65.63(b) or § 65.83(b). Submit this record in the Initial Compliance Status Report, as specified in § 65.165(d). If the owner or operator designates the vent stream as halogenated, then this shall be recorded and reported in the Initial Compliance Status Report.

§ 65.161 Continuous records and monitoring system data handling.

- (a) **Continuous records.** Where this subpart requires a monitoring device capable of providing a continuous record, the owner or operator shall maintain the record specified in paragraph (a)(1), (2), (3), or (4) of this section, as applicable (The provisions of this section apply to owners and operators of storage vessels and low-throughput transfer racks only if specified by the applicable monitoring plan established under § 65.165(c)(1) and (2)):
- (1) A record of values measured at least once every 15 minutes or each measured value for systems that measure more frequently than once every 15 minutes; or
 - (2) A record of block average values for 15-minute or shorter periods calculated from all measured data values during each period or from at least one measured data value per minute if measured more frequently than once per minute; or
 - (3) For data collected from an automated continuous parameter monitoring system, a record of block hourly average values calculated from each 15-minute block average period or from at least one measured value per minute if measured more frequently than once per minute, and a record of the most recent 3 valid hours of continuous (15-minute or shorter) records meeting the requirements of paragraph (a)(1) or (2) of this section. Records meeting the requirements of paragraph (a)(1) or (2) of this section shall also be kept for all periods that include CPMS breakdown or malfunction. During these periods, it is not necessary to calculate hourly averages; or
 - (4) A record as required by an alternative approved under § 65.162(d).
- (b) **Excluded data.** Monitoring data recorded during the following periods shall not be included in any average computed to determine compliance under this subpart:
- (1) Monitoring system breakdowns, repairs, preventive maintenance, calibration checks, and zero (low-level) and high-level adjustments;
 - (2) Periods of non-operation of the process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies; and
 - (3) Startups, shutdowns, and malfunctions.
- (c) **Records of daily averages.** In addition to the records specified in paragraph (a) of this section, owners or operators shall also keep records as specified in paragraphs (c)(1) and (2) of this section unless an alternative monitoring or recordkeeping system has been requested and approved under § 65.162(d).
- (1) Except as specified in paragraph (c)(2) of this section, daily average values of each continuously monitored parameter shall be calculated for each operating day. Data meeting the specifications of paragraph (b) of this section shall not be included in the average. The data shall be reported in the periodic report as specified in § 65.166(f), if applicable.
 - (i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day as specified in paragraph (a)(1), (2), or (3) of this section. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous (for example, for high-throughput transfer racks, the average shall cover periods of loading). If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the daily average instead of all measured values.

(ii) The operating day shall be the period defined in the operating permit or the Initial Compliance Status Report. It may be from midnight to midnight or another daily period.

(2) If all monitored parameter values recorded under paragraph (a)(1), (2), or (3) of this section, during an operating day are within the range established in the Initial Compliance Status Report or in the operating permit, the owner or operator does not have to calculate a daily average value for the operating day and may record that all values were within the range. The owner or operator must continue to retain the raw data, 15-minute averages, or the hourly averages required under paragraph (a)(1), (2), or (3) of this section.

(d) **Valid data.** Unless determined to be excluded data according to paragraph (b) of this section, the data collected pursuant to paragraphs (a) through (c) of this section shall be considered valid.

(e) **Alternative recordkeeping.** For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements in paragraph (e)(1) or (2) of this section as alternatives to the continuous parameter monitoring and recordkeeping provisions listed in paragraphs (a) through (c) of this section. The owner or operator shall retain each record required by paragraph (e)(1) or (2) of this section as provided in § 65.4.

(1) The owner or operator may retain only the daily average value and is not required to retain more frequently monitored operating parameter values for a monitored parameter with respect to an item of equipment if the requirements of paragraphs (e)(1)(i) through (vi) of this section are met. The owner or operator shall notify the Administrator of implementation of paragraph (e)(1) of this section in the Initial Compliance Status Report as required in § 65.165(e) or, if the Initial Compliance Status Report has already been submitted, in the periodic report as required in § 65.166(f)(4) immediately preceding implementation of the requirements of paragraph (e)(1) of this section.

(i) The monitoring system can detect unrealistic or impossible data during periods of operation other than startups, shutdowns, or malfunctions (for example, a temperature reading of -200 °C on a boiler) and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(ii) The monitoring system shall generate a running average of the monitoring values, updated at least hourly throughout each operating day, that have been obtained during that operating day, and the capability to observe this average is readily available to the Administrator on-site during the operating day. All instances in an operating day constitute a single occurrence. The owner or operator shall record the occurrence of any period meeting the following criteria:

(A) The running average is above the maximum or below the minimum established limits;

(B) The running average is based on at least six 1-hour average values;

(C) The running average reflects a period of operation other than a startup, shutdown, or malfunction.

(iii) The monitoring system shall be capable of detecting unchanging data during periods of operation other than startups, shutdowns, or malfunctions except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (for example, pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

- (iv) The monitoring system shall alert the owner or operator by an alarm if the running average parameter value calculated under paragraph (e)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.
- (v) The owner or operator shall verify and document the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (e)(1) of this section, at the following times:
 - (A) Upon initial installation;
 - (B) Annually after initial installation; and
 - (C) After any change to the programming or equipment constituting the monitoring system, that might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.
- (vi) The owner or operator shall retain the following records:
 - (A) Identification of each parameter for each item of equipment for which the owner or operator has elected to comply with the requirements of § 65.162(e).
 - (B) A description of the applicable monitoring system(s) and of how compliance will be achieved with each requirement of paragraphs (e)(1)(i) through (v) of this section. The description shall identify the location and format (for example, on-line storage; log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent outdated description.
 - (C) A description and the date of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (e)(1) of this section.
 - (D) Owners and operators shall retain the current description of the monitoring system as long as the description is current, but not less than 5 years from the date of its creation. The current description shall be retained on-site at all times or be accessible from a central location by computer or other means that provide access within 2 hours after a request. The owner or operator shall retain the most recent outdated description at least until 5 years from the date of its creation. The outdated description shall be retained on-site (or accessible from a central location by computer that provides access within 2 hours after a request) at least 6 months after being outdated. Thereafter, the outdated description may be stored off-site.
- (2) If an owner or operator has elected to implement the requirements of paragraph (e)(1) of this section and a period of 6 consecutive months has passed without an excursion as defined in paragraph (e)(2)(iv) of this section, the owner or operator is no longer required to record the daily average value for that parameter for that unit of equipment for any operating day when the daily average value is less than the maximum or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months if the parameter limit and the monitoring were required and/or approved by the Administrator.
 - (i) If the owner or operator elects not to retain the daily average values, the owner or operator shall notify the Administrator in the next periodic report. The notification shall identify the parameter and unit of equipment.

- (ii) If there is an excursion as defined in paragraph (e)(2)(iv) of this section on any operating day after the owner or operator has ceased recording daily averages as provided in paragraph (e)(2) of this section, the owner or operator shall immediately resume retaining the daily average value for each day and shall notify the Administrator in the next periodic report. The owner or operator shall continue to retain each daily average value until another period of 6 consecutive months has passed without an excursion.
- (iii) The owner or operator shall retain the records specified in paragraphs (e)(1)(i) through (vi) of this section for the duration specified in § 65.4. For any calendar week, if compliance with paragraphs (e)(1)(i) through (iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation other than a startup, shutdown, or malfunction.
- (iv) For purposes of paragraph (e) of this section, an excursion means that the daily average value of monitoring data for a parameter is greater than the maximum or less than the minimum established value except as provided in the following:
 - (A) The daily average value during any startup, shutdown, or malfunction shall not be considered an excursion for purposes of this paragraph (e) if the owner or operator operates the source in accordance with § 65.3(a).
 - (B) Excused excursions described in § 65.156(d)(2) and excursions described in § 65.156(d)(3) do not count toward the number of excursions for purposes of this paragraph (e).

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20472, Apr. 20, 2006]

§ 65.162 Nonflare control and recovery device monitoring records.

- (a) **Monitoring system records.** For process vents and high-throughput transfer racks, the owner or operator subject to this subpart shall keep the records specified in paragraph (a) of this section as well as records specified elsewhere in this part.
 - (1) For CPMS used to comply with this part, a record of the procedure used for calibrating the CPMS.
 - (2) For CPMS used to comply with this subpart, records of the following information, as applicable:
 - (i) The date and time of completion of calibration and preventive maintenance of the CPMS;
 - (ii) The “as found” and “as left” CPMS readings whenever an adjustment is made that affects the CPMS reading and a “no adjustment” statement otherwise;
 - (iii) The start time and duration or start and stop time of any periods when the CPMS is inoperative or malfunctioning;
 - (iv) Records of the occurrence and duration of each startup, shutdown, and malfunction of CPMS used to comply with this part during which excess emissions (as defined in § 65.3(a)(4)) occur; and
 - (v) For each startup, shutdown, and malfunction during which excess emissions as defined in § 65.3(a)(4) of this part occur, records whether the procedures specified in the source's startup, shutdown, and malfunction plan were followed and documentation of actions taken that are not

consistent with the plan. These records may take the form of a checklist, or other form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for the event.

- (3) Records of startup, shutdown, and malfunction and CPMS calibration and maintenance are not required if they pertain solely to Group 2A process vents.

(b) Combustion control and halogen reduction device monitoring records.

- (1) Each owner or operator using a combustion control or halogen reduction device to comply with this subpart shall keep, as applicable, up-to-date and readily accessible continuous records, as specified in § 65.161(a); and records of the equipment operating parameters specified to be monitored under § 65.148(c) (incinerator monitoring); § 65.149(c) (boiler and process heater monitoring); § 65.154(c) (halogen reduction device monitoring); § 65.155(c) (other control device monitoring); or specified by the Administrator in accordance with paragraph (e) of this section.
- (2) Each owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 65.161(c)(1). For catalytic incinerators, record the daily average of the temperature upstream of the catalyst bed and the daily average of the temperature differential across the bed. For halogen scrubbers, record the daily average pH and the liquid-to-gas ratio.
- (3) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of periods of operation during which the parameter boundaries are exceeded and report these exceedances as specified in § 65.166(f)(1). The parameter boundaries are established pursuant to § 65.148(c)(2) (incinerator monitoring), § 65.149(c)(2) (boiler and process heater monitoring), § 65.154(c)(2) (halogen reduction device monitoring), or § 65.155(c)(2) (other control device monitoring), as applicable.

(c) Monitoring records for recovery devices on Group 2A process vents and for absorbers, condensers, carbon adsorbers, or other noncombustion systems used as control devices.

- (1) Each owner or operator using a recovery device to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 or using an absorber, condenser, carbon adsorber, or other noncombustion system as a control device shall keep readily accessible, continuous records, as specified in § 65.161(a), of the equipment operating parameters specified to be monitored under § 65.150(c) (absorber monitoring), § 65.151(c) (condenser monitoring), § 65.152(c) (carbon adsorber monitoring), § 65.153(c) (recovery device monitoring) or § 65.155(c) (other control device monitoring), or specified by the Administrator in accordance with paragraph (e) of this section. For transfer racks, continuous records are required while the transfer vent stream is being vented.
- (2) Each owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 65.161(c)(1). If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the following records shall be kept instead of the daily averages, and the records shall be reported as specified in § 65.166(f)(2):
 - (i) Records of total regeneration stream mass or volumetric flow for each carbon-bed regeneration cycle; and
 - (ii) Records of the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle.

(3) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of periods of operation during which the parameter boundaries are exceeded and report these exceedances as specified in § 65.166(f)(1). The parameter boundaries are established pursuant to § 65.150(c)(2) (absorber monitoring), § 65.151(c)(2) (condenser monitoring), § 65.152(c)(2) (carbon adsorber monitoring), or § 65.155(c)(2) (other control device monitoring), as applicable.

(d) ***Alternatives to the continuous operating parameter monitoring and recordkeeping provisions.*** An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 65.148(c), 65.149(c), 65.150(c), 65.151(c), 65.152(c), 65.153(c), 65.154(c), 65.160, and paragraphs (b) and (c) of this section.

(1) Requests shall be included in the operating permit application or as otherwise specified by the permitting authority and shall contain the information specified in paragraphs (d)(3) through (5) of this section, as applicable.

(2) The provisions in § 65.7(c) shall govern the review and approval of requests.

(3) An owner or operator of a source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and generating continuous records may request approval to use a nonautomated system with less frequent monitoring.

(i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average values shall be calculated from these hourly values and recorded.

(ii) The request shall contain the following information:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the source does not have an automated monitoring and recording system capable of meeting the specified requirements;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control device operating conditions considering typical variability of the specific process and control device operating parameter being monitored.

(4) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once every 15 minutes) but records all values that meet set criteria for variation from previously recorded values.

(i) The requested system shall be designed to perform the following functions:

(A) Measure the operating parameter value at least once every 15 minutes;

(B) Record at least four values each hour during periods of operation;

(C) Record the date and time when monitors are turned off or on;

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident; and

- (E) Compute daily average values of the monitored operating parameter based on recorded data. If the daily average is not an excursion as defined in § 65.161(e)(2)(iv), the data for that operating day may be converted to hourly average values, and the four or more individual records for each hour in the operating day may be discarded.
- (ii) The request shall contain a description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating averages, and a demonstration that the system meets all criteria in paragraph (d)(4)(i) of this section.
- (5) An owner or operator may request approval to use other alternative monitoring and recordkeeping systems as specified in § 65.7(b). The application shall contain a description of the proposed alternative system. In addition, the application shall include information justifying the owner or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the regulated source using the required method.
- (e) **Monitoring a different parameter than those listed.** The owner or operator who has been directed by § 65.154(c)(2) or § 65.155(c)(1) to set monitoring parameters, or who requests as allowed by § 65.156(e) approval to monitor a different parameter than those listed in § 65.148(c), § 65.149(c), § 65.150(c), § 65.151(c), § 65.152(c), § 65.153(c), § 65.154(c), § 65.160, or paragraph (b) or (c) of this section, shall submit the following information with the operating permit application or as otherwise specified by the permitting authority:
 - (1) A description of the parameter(s) to be monitored to ensure the process, control technology, or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).
 - (2) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter as part of the Initial Compliance Status Report required in § 65.5(d) unless this information has already been included in the operating permit application or previously established under a referencing subpart.
 - (3) The frequency and content of monitoring, recording, and reporting if monitoring and recording is not continuous, or if reports of daily average values when the monitored parameter value is outside the range established in the operating permit or Initial Compliance Status Report will not be included in Periodic Reports as specified in § 65.166(e). The rationale for the proposed monitoring, recording, and reporting system shall be included.

§ 65.163 Other records.

- (a) **Closed vent system records.** For closed vent systems, the owner or operator shall record the following information, as applicable:
 - (1) For each closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (a)(1)(i) or (ii) of this section, as applicable. The information shall be reported as specified in § 65.166(b).

- (i) Hourly records of whether the flow indicator specified under § 65.143(a)(3)(i) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.
 - (ii) Where a seal mechanism is used to comply with § 65.143(a)(3)(ii), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has been broken.
- (2) For closed vent systems collecting regulated material from a storage vessel, transfer rack, or equipment leak, the owner or operator shall record the identification of all parts of the closed vent system that are designated as unsafe or difficult-to-inspect pursuant to § 65.143(b)(2) or (3), an explanation of why the equipment is unsafe or difficult-to-inspect, and the plan for inspecting the equipment as required by § 65.143(b)(2)(ii) or (b)(3)(ii).
- (3) For a closed vent system collecting regulated material from a storage vessel, transfer rack, or equipment leaks, when a leak is detected as specified in § 65.143(d)(1), the information specified in paragraphs (a)(3)(i) through (vi) of this section shall be recorded. The data shall be reported as specified in § 65.166(b)(1).
 - (i) The instrument and the equipment identification number and the operator name, initials, or identification number.
 - (ii) The date the leak was detected and the date of the first attempt to repair the leak.
 - (iii) The date of successful repair of the leak.
 - (iv) The maximum instrument reading measured by the procedures in § 65.143(c) after the leak is successfully repaired or determined to be nonreparable.
 - (v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.
 - (vi) Copies of the periodic reports if records are not maintained on a computerized database capable of generating summary reports from the records.
- (4) For each instrumental or visual inspection conducted in accordance with § 65.143(b)(1) for closed vent systems collecting regulated material from a storage vessel, transfer rack, or equipment leaks during which no leaks are detected, the owner or operator shall record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (5) For instrument response factor criteria determinations performed pursuant to § 65.143(c)(1)(ii), the owner or operator shall maintain a record of an engineering assessment that identifies the representative composition of the process fluid. This assessment shall be based on knowledge of the compounds present in the process, similarity of response factors for the materials present, the range of compositions encountered during monitoring, or other information available to the owner or operator.

- (b) ***Storage vessel and transfer rack records.*** For storage vessels, an owner or operator shall keep readily accessible records of the information specified in paragraphs (b)(1) through (3) of this section, as applicable. For low-throughput transfer racks, an owner or operator shall keep readily accessible records of the information specified in paragraph (b)(1) of this section.
- (1) A record of the measured values of the parameters monitored in accordance with § 65.145(c)(2) and report in the periodic report as specified in § 65.166(e), if applicable.
 - (2) A record of the planned routine maintenance performed on the control system during which the control system does not meet the applicable specifications of § 65.143(a), § 65.145(a), or § 65.147(a), as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (b)(2)(i) through (iii) of this section. This information shall be submitted in the periodic reports as specified in § 65.166(d)(1).
 - (i) The first time of day and date the requirements of § 65.143(a), § 65.145(a), or § 65.147(a), as applicable, were not met at the beginning of the planned routine maintenance.
 - (ii) The first time of day and date the requirements of § 65.143(a), § 65.145(a), or § 65.147(a), as applicable, were met at the conclusion of the planned routine maintenance.
 - (iii) A description of the type of maintenance performed.
 - (3) ***Bypass records for storage vessel emissions routed to a process or fuel gas system.*** An owner or operator who uses the bypass provisions of § 65.144(a)(2) shall keep in a readily accessible location the following records:
 - (i) The reason it was necessary to bypass the process equipment or fuel gas system;
 - (ii) The duration of the period when the process equipment or fuel gas system was bypassed;
 - (iii) Documentation or certification of compliance with the applicable provisions of § 65.42(b)(6).
- (c) ***Regulated source and control equipment startup, shutdown and malfunction records.***
- (1) Records of the occurrence and duration of each startup, shutdown, and malfunction of process equipment or of air pollution control equipment used to comply with this part during which excess emissions (as defined in § 65.3(a)(4)) occur.
 - (2) For each startup, shutdown, and malfunction during which excess emissions occur, records whether the procedures specified in the source's startup, shutdown, and malfunction plan were followed, and a description of actions taken to minimize emissions. For example, if a startup, shutdown, and malfunction plan includes procedures for routing control device emissions to a backup control device (for example, the incinerator for a halogenated stream could be routed to a flare during periods when the primary control device is out of service), records must be kept of whether the plan was followed. These records may take the form of a checklist or other form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for the event.
 - (3) Records of startup, shutdown, and malfunction and continuous monitoring system calibration and maintenance are not required if they pertain solely to Group 2A process vents.

- (d) **Equipment leak records.** The owner or operator shall maintain records of the information specified in paragraphs (d)(1) and (2) of this section for closed vent systems and control devices subject to the provisions of subpart F of this part. The owner or operator shall meet the record retention requirements of § 65.4, except the records specified in paragraph (d)(1) of this section shall be kept as long as the equipment is in operation.
- (1) The following design specifications and performance demonstrations:
- (i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.
 - (ii) The dates and descriptions of any changes in the design specifications.
 - (iii) A description of the parameter or parameters monitored as required in § 65.146(c) to ensure that control devices are operated and maintained in conformance with their design, and an explanation of why that parameter (or parameters) was selected for the monitoring.
- (2) The following records of operation of closed vent systems and control devices:
- (i) Dates and durations when the closed vent systems and control devices required in § 65.115(b) are not operated as designed as indicated by the monitored parameters, including periods when a flare flame or at least one pilot flame is not present.
 - (ii) Dates and durations during which the monitoring system or monitoring device is inoperative.
 - (iii) Dates and durations of startups and shutdowns of control devices required in § 65.115(b).
- (e) **Records of monitored parameters outside of range.** The owner or operator shall record the occurrences and the cause of periods when the monitored parameters are outside of the parameter ranges documented in the Initial Compliance Status Report in accordance with § 65.165(b). This information shall be reported in the periodic report as specified in § 65.166(e).

[65 FR 78285, Dec. 14, 2000, as amended at 71 FR 20472, Apr. 20, 2006]

§ 65.164 Performance test and flare compliance determination notifications and reports.

- (a) **Performance test and flare compliance determination reports.** Performance test reports and flare compliance determination reports shall be submitted as specified in paragraphs (a)(1) through (3) of this section.
- (1) For performance tests or flare compliance determinations, the Initial Compliance Status Report or report required by paragraph (b)(2) of this section shall include one complete test report as specified in paragraph (a)(2) of this section for each test method used for a particular kind of emission point, and other applicable information specified in paragraph (a)(3) of this section. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in applicable sections of this subpart or in other subparts of this part shall be submitted, but a complete test report is not required.
- (2) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of

standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

- (3) The performance test or flare compliance determination report shall also include the following information, as applicable:
 - (i) For flare compliance determinations, the owner or operator shall submit the records specified in § 65.159(b).
 - (ii) For nonflare combustion device and halogen reduction device performance tests as required under § 65.148(b), § 65.149(b), § 65.150(b), § 65.151(b), § 65.152(b), § 65.154(b), or § 65.155(b), the owner or operator shall submit the applicable records specified in § 65.160(b).
 - (iii) For Group 2A process vents, the owner or operator shall submit the records specified in § 65.160(c), as applicable.

(b) ***Other notifications and reports.***

- (1) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator as soon as possible of any delay in the original test date. The owner or operator shall provide at least 7 days prior notice of the rescheduled date of the performance test or arrange a rescheduled date with the Administrator by mutual agreement.
- (2) Unless specified differently in this subpart or another subpart of this part, performance test and flare compliance determination reports not submitted as part of an Initial Compliance Status Report shall be submitted to the Administrator within 60 days of completing the test or determination.
- (3) Any application for a waiver of an initial performance test or flare compliance determination as allowed by § 65.157(b)(2), shall be submitted no later than 90 calendar days before the performance test or flare compliance determination is required. The application for a waiver shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the source performing the test.

§ 65.165 Initial Compliance Status Reports.

- (a) An owner or operator who elects to comply with § 65.144 by routing emissions from a storage vessel or transfer rack to a process or to a fuel gas system shall submit as part of the Initial Compliance Status Report the following information, as applicable:
 - (1) If storage vessel emissions are routed to a process, the owner or operator shall submit the information specified in § 65.144(b)(3).
 - (2) As specified in § 65.144(c), if storage vessel emissions are routed to a fuel gas system, the owner or operator shall submit a statement that the emission stream is connected to a fuel gas system.
 - (3) As specified in § 65.144(c), report that the transfer rack emission stream is being routed to a fuel gas system or process when complying with the requirements of § 65.83(a)(4).

- (b) An owner or operator who elects to comply with § 65.145 by routing emissions from a storage vessel or low-throughput transfer rack to a nonflare control device or halogen reduction device shall submit with the Initial Compliance Status Report required by § 65.5(d) the applicable information specified in paragraphs (b)(1) through (6) of this section. Owners and operators who elect to comply with § 65.145(b)(1)(i) or (b)(3)(i) by submitting a design evaluation shall submit the information specified in paragraphs (b)(1) through (4) of this section. Owners and operators who elect to comply with § 65.145(b)(1)(ii) or (b)(3)(ii) by submitting performance test results shall submit the information specified in paragraphs (b)(1), (2), (4), and (5) of this section. Owners and operators who elect to comply with § 65.145(b)(1)(iii) or (b)(3)(iii) by submitting performance test results for a shared control device or halogen reduction device shall submit the information specified in paragraph (b)(6) of this section.
- (1) A description of the parameter or parameters to be monitored to ensure that the control device or halogen reduction device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (for example, when the liquid level in the storage vessel is being raised). If continuous records are specified, indicate whether the provisions of § 65.166(f) apply.
 - (2) The operating range for each monitoring parameter identified in the monitoring plan required by § 65.145(c)(1). The specified operating range shall represent the conditions for which the control device or halogen reduction device is being properly operated and maintained.
 - (3) The documentation specified in § 65.145(b)(1)(i), if the owner or operator elects to prepare a design evaluation; and the documentation specified in § 65.145(b)(3)(i), if the owner or operator elects to prepare a design evaluation for a halogen reduction device.
 - (4) The provisions of § 65.166(f) do not apply to any low-throughput transfer rack for which the owner or operator has elected to comply with § 65.145 or to any storage vessel for which the owner or operator is not required to keep continuous records, as specified by the applicable monitoring plan established under § 65.145(c)(1) and (2). If continuous records are required, the owner or operator shall specify in the monitoring plan whether the provisions of § 65.166(f) apply.
 - (5) A summary of the results of the performance test described in § 65.145(b)(1)(ii), (1)(iii), (3)(ii), and/or (3)(iii), as applicable. If a performance test is conducted as provided in § 65.145(b)(1)(ii) and/or (b)(3)(ii), submit the results of the performance test, including the information specified in § 65.164(a)(1) and (2).
 - (6) Identification of the storage vessel or low-throughput transfer rack and control device and/or halogen reduction device for which the performance test will be submitted, and identification of the emission point(s), if any, that share the control device and/or halogen reduction device with the storage vessel or low-throughput transfer rack and for which the performance test will be conducted.
- (c) The owner or operator shall submit as part of the Initial Compliance Status Report the operating range for each monitoring parameter identified for each control, recovery, or halogen reduction device as determined in §§ 65.148(c)(2), 65.149(c)(2), 65.150(c)(2), 65.151(c)(2), 65.152(c)(2), 65.153(c)(5), 65.154(c)(3), and 65.155(c)(2). The specified operating range shall represent the conditions for which the control, recovery, or halogen reduction device is being properly operated and maintained. This report shall include the information in paragraphs (c)(1) through (3) of this section, as applicable, unless the range and the operating day definition have been established in the operating permit:
- (1) The specific range of the monitored parameter(s) for each emission point.

- (2) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range indicates proper operation of the control, recovery, or halogen reduction device, as specified in the following, as applicable:
 - (i) If a performance test or TRE index value determination is required by this subpart or another subpart of this part for a control, recovery or halogen removal device, the range shall be based on the parameter values measured during the TRE index value determination or performance test and may be supplemented by engineering assessments and/or manufacturer's recommendations. The TRE index value determinations and performance testing is not required to be conducted over the entire range of permitted parameter values.
 - (ii) If a performance test or TRE index value determination is not required by this subpart or other subparts of this part for a control, recovery, or halogen reduction device, the range may be based solely on engineering assessments and/or manufacturer's recommendations.
 - (iii) The range may be based on ranges or limits previously established under a referencing subpart.
- (3) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.
- (d) **Halogen reduction device.** The owner or operator shall submit as part of the Initial Compliance Status Report the information recorded pursuant to § 65.160(d).
- (e) **Alternative recordkeeping.** The owner or operator shall notify the Administrator in the Initial Compliance Status Report if the alternative recordkeeping provisions of § 65.161(e)(1) are being implemented. If the Initial Compliance Status Report has been submitted, the notification must be in the periodic report submitted immediately preceding implementation of the alternative, as provided in § 65.166(f)(4).
- (f) **Exemptions from performance tests and design evaluation.** The owner or operator shall identify in the Initial Compliance Status Report whether an exemption from performance testing or conducting a design evaluation, as provided in § 65.145(b)(2), § 65.148(b)(2), or § 65.149(b)(2), is being invoked, and which of the provisions of § 65.145(b)(2), § 65.148(b)(2), or § 65.149(b)(2) apply.

§ 65.166 Periodic reports.

- (a) Periodic reports shall include the reporting period dates, the total source operating time for the reporting period, and, as applicable, all information specified in this section and in other subparts of this part, including reports of periods when monitored parameters are outside their established ranges.
- (b) For closed vent systems subject to the requirements of § 65.143, the owner or operator shall submit as part of the periodic report the following information, as applicable:
 - (1) The information recorded in § 65.163(a)(3)(ii) through (v);
 - (2) Reports of the times of all periods recorded under § 65.163(a)(1)(i) when the vent stream is diverted from the control device through a bypass line; and
 - (3) Reports of all times recorded under § 65.163(a)(1)(ii) when maintenance is performed on car-sealed valves, when the seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out.

- (c) For flares subject to this subpart, report all periods when all pilot flames were absent or the flare flame was absent as recorded in § 65.159(d)(1).
- (d) For storage vessels, the owner or operator shall include in each periodic report required the following information:
 - (1) For the 6-month period covered by the periodic report, the information recorded in § 65.163(b)(2)(i) through (iii).
 - (2) For the time period covered by the periodic report and the previous periodic report, the total number of hours that the control system did not meet the requirements of § 65.143(a), § 65.145(a), or § 65.147(a) due to planned routine maintenance.
 - (3) A description of the planned routine maintenance that is anticipated to be performed for the control system during the next 6-month periodic reporting period when the control system is not expected to meet the required control efficiency. This description shall include the type of maintenance necessary, planned frequency of maintenance, and expected lengths of maintenance periods.
- (e) If a nonflare control device, including a halogen reduction device for a low-throughput transfer rack, is used to control emissions from storage vessels or low-throughput transfer racks, the periodic report shall identify and state the cause for each occurrence when the monitored parameters were outside of the parameter ranges documented in the Initial Compliance Status Report in accordance with § 65.165(b).
- (f) For process vents and high-throughput transfer racks, periodic reports shall include the following information:
 - (1) Periodic reports shall include the daily average values of monitored parameters, calculated as specified in § 65.161(c)(1) for any days when the daily average value is outside the bounds as specified in § 65.162(b)(3) or (c)(3), or the data availability requirements defined in § 65.156(d)(1) are not met, whether these excursions are excused or unexcused excursions. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.
 - (2) Report all carbon-bed regeneration cycles during which the parameters recorded under § 65.162(c)(2) were outside the ranges established in the Initial Compliance Status Report or in the operating permit.
 - (3) The provisions of paragraphs (f)(1) and (2) of this section do not apply to any low-throughput transfer rack for which the owner or operator has elected to comply with § 65.145, or to any storage vessel for which the owner or operator is not required by the applicable monitoring plan established under § 65.165(c)(1) and (2) to keep continuous records. If continuous records are required, the owner or operator shall specify in the monitoring plan whether the provisions of paragraphs (f)(1) and (2) of this section apply.
 - (4) If the owner or operator has chosen to use the alternative recordkeeping provisions of § 65.161(e)(1) and has not notified the Administrator in the Initial Compliance Status Report that the alternative recordkeeping provisions are being implemented as provided in § 65.165(e), the owner or operator shall notify the Administrator in the periodic report submitted immediately before implementation of the alternative.

§ 65.167 Other reports.

- (a) ***Replacing an existing control or recovery device.*** As specified in § 65.147(b)(2), § 65.148(b)(3), § 65.149(b)(3), § 65.150(b)(2), § 65.151(b)(2), § 65.152(b)(2), or § 65.153(b)(2), if an owner or operator at a facility not required to obtain a title V permit elects at a later date to use a different control or recovery device, then the Administrator shall be notified by the owner or operator before implementing the change. This notification may be included in the facility's periodic reporting and shall include a description of any changes made to the closed vent system.
- (b) ***Startup, shutdown, and malfunction periodic reports.*** Startup, shutdown, and malfunction periodic reports shall be submitted as required in § 65.6(c).

§§ 65.168-65.169 [Reserved]