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40 CFR Parts 60 and 63

Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60 and 63

[EPA–HQ–OAR–2006–0699; FRL–8492–4]

RIN 2060–AN71

Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing final amendments to the standards of performance for equipment leaks of volatile organic compounds in the synthetic organic chemicals manufacturing industry and to the standards of performance for equipment leaks of volatile organic compounds in petroleum refineries. The amended standards for the synthetic organic chemicals manufacturing industry apply to affected facilities that are constructed, reconstructed, or modified after January 5, 1981, and on or before November 7, 2006. The amended standards for petroleum refineries apply to affected facilities that are constructed, reconstructed, or modified after January 4, 1983, and on or before November 7, 2006. In this action, EPA is also issuing new standards of performance for equipment leaks of volatile organic compounds in the synthetic organic chemicals manufacturing industry and for equipment leaks of volatile organic compounds in petroleum refineries which apply to affected facilities that are constructed, reconstructed, or modified after November 7, 2006. The final amendments and new standards are based on the results of our review of the existing regulations as required by section 111(b)(1)(B) of the Clean Air Act.

DATES: This final rule is effective on November 16, 2007. The incorporation by reference of certain publications listed in these rules is approved by the Director of the Federal Register as of November 16, 2007.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2006–0699. All documents in the docket are listed in the Federal Docket Management System index at *www.regulations.gov.* Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *www.regulations.gov* or in hard copy at the Air and Radiation Docket, EPA West Building, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air and Radiation Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For information concerning the final amendments and new standards, contact Ms. Karen Rackley, Coatings and Chemicals Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143–01), Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–0634; fax number: (919) 541–0246; e-mail address: *rackley.karen@epa.gov.* For information concerning compliance and enforcement of the final amendments and new standards, contact Ms. Marcia Mia, Air Compliance Branch, Compliance Assessment and Media Programs Division, Office of Compliance (MC 2223A), Environmental Protection Agency, Washington, DC 20460; telephone number: (202) 564–7042; fax number: (202) 564–0050; and e-mail address: *mia.marcia@epa.gov.*

SUPPLEMENTARY INFORMATION:

Regulated Entities. Categories and entities potentially regulated by this action include:

Category	NAICS code[1]	Examples of potentially regulated entities
Industry	324110 Primarily 325110, 325192, 325193, and 325199.	Petroleum refiners. Synthetic organic chemical manufacturing industry (SOCMI) units, e.g., producers of benzene, toluene, or any other chemical listed in 40 CFR 60.489.

[1] North American Industrial Classification Code.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in 40 CFR 60.480, 60.590, 60.480a, and 60.590a. If you have any questions regarding the applicability of the final amendments or new standards to a particular entity, contact the people listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of the final rule is available on the WWW through the Technology Transfer Network (TTN). Following signature, EPA will post a copy of the final rule on the TTN's policy and guidance page for newly proposed or promulgated rules at *http://www.epa.gov/ttn/oarpg.* The TTN provides information and technology exchange in various areas of air pollution control.

Judicial Review. Under section 307(b) of the Clean Air Act (CAA), judicial review of the final rule is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by January 15, 2008. Under section 307(d)(7)(B) of the CAA, only an objection to the final rule that was raised with reasonable specificity during the period for pubic comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

Section 307(d)(7)(B) of the CAA further provides that ''[O]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.'' This section also provides a mechanism for us to convene a proceeding for reconsideration, ''[i]f the person raising an objection can demonstrate to the EPA that is was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time

specified for judicial review) and if such objection is of central relevance to the outcome of the rule.'' Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, Ariel Rios Building, 1200 Pennsylvania Ave., NW., Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

Outline. The information presented in this preamble is organized as follows:

I. Background Information

A. What is the statutory authority for the final amendments and new standards?

New source performance standards (NSPS) implement CAA section 111 and are issued for categories of sources which cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. The primary purpose of the NSPS are to attain and maintain ambient air quality by ensuring that the best demonstrated emission control technologies are installed as the industrial infrastructure is modernized. Since 1970, the NSPS have been successful in achieving long-term emissions reductions at numerous industries by assuring cost-effective controls are installed on new, reconstructed, or modified sources.

Section 111 of the CAA requires that NSPS reflect the application of the best system of emission reductions which (taking into consideration the cost of achieving such emission reductions, any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. This level of control is commonly referred to as best demonstrated technology (BDT).

Section 111(b)(1)(B) of the CAA requires that EPA periodically review and revise the standards of performance, as necessary, to reflect improvements in methods for reducing emissions. Based on the results of the review required by CAA section 111(b)(1)(B), we proposed amendments to the NSPS for equipment leaks of volatile organic compounds (VOC) in the synthetic organic chemicals manufacturing industry (SOCMI) and the petroleum refining industry on November 7, 2006 (71 FR 65302). In this action, EPA is finalizing amendments to 40 CFR part 60, subparts VV and GGG and issuing new standards of performance in 40 CFR part 60, subparts VVa and GGGa.

B. What are the current equipment leak NSPS?

New source performance standards for equipment leaks of VOC have been developed for four source categories. Subpart VV of 40 CFR part 60 applies to SOCMI process units. Subpart DDD of 40 CFR part 60, Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry, applies to polypropylene, polyethylene, polystyrene, and poly (ethylene terephthalate) process units. Subpart GGG of 40 CFR part 60 applies to petroleum refining process units. Subpart KKK of 40 CFR part 60 applies to onshore natural gas processing plants. Subparts DDD, GGG, and KKK of 40 CFR part 60 cross-reference the requirements in subpart VV, and they specify source category-specific definitions and exceptions to the requirements in subpart VV.

The NSPS for equipment leaks of VOC in the SOCMI (40 CFR part 60, subpart VV) were originally promulgated on October 18, 1983 (48 FR 48335) and apply to all equipment, as defined by the rule, within a process unit in the SOCMI that commenced construction, reconstruction, or modification after January 5, 1981. For the purpose of subpart VV, the SOCMI consists of process units producing any of the chemicals listed in 40 CFR 60.489 of subpart VV. The standards apply to pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines (OEL), valves, and flanges or other connectors in VOC service. Depending on the type of equipment, the standards require either periodic monitoring for and repair of leaks, the use of specified equipment to minimize leaks, or specified work practices. Monitoring for leaks must be conducted using EPA Method 21 in appendix A–7 to 40 CFR part 60 or other approved equivalent monitoring techniques. Owners and operators must keep records that identify the equipment that is subject to the standards, identify equipment that is leaking, and document attempts at repair. Information related to leaks and repair attempts also must be included in semiannual reports. This subpart has been amended several times between 1984 and 2000. Typically, these amendments added definitions, exemptions, alternative compliance options, and clarifications. For example, one amendment provides an option to comply with the equipment leak provisions in the Consolidated Federal Air Rule (CAR) (40 CFR part 65, subpart F). None of these amendments increased the intended performance level of the standards.

The NSPS for equipment leaks of VOC in petroleum refineries (40 CFR part 60, subpart GGG) apply to petroleum refining process units for which construction, reconstruction, or modification commenced after January

4, 1983. Those standards were originally promulgated on May 30, 1984 (49 FR 22606), and have been amended only once since the original promulgation (65 FR 61768, October 17, 2000) to update the American Society for Testing and Materials (ASTM) test method references.

C. How were the final amendments developed?

We proposed amendments to 40 CFR part 60, subpart VV and 40 CFR part 60, subpart GGG on November 7, 2006 (71 FR 65302). The preamble for the proposed amendments described the rationale for the proposed amendments. Public comments were solicited at the time of proposal. The public comment period lasted from November 7, 2006, to February 8, 2007. We offered at proposal the opportunity for a public hearing concerning the proposed amendments, but no hearing was requested. We also published a Notice of Additional Data Availability (NODA) on July 9, 2007 (72 FR 37157). The NODA provided additional information regarding OEL. Public comments were solicited at the time of publication, and the public comment period lasted from July 9, 2007, to August 8, 2007.

We received a total of 28 public comment letters during the comment periods, 23 on the proposed amendments and five on the NODA. Comments were submitted by industry trade associations and consultants, chemical companies and petroleum refineries, state regulatory agencies, local government agencies, and environmental groups. These final amendments reflect our consideration of all of the comments received during the comment periods. Major public comments on the proposed amendments, along with our responses to those comments, are summarized in this preamble.

II. Summary of the Final Amendments, New Standards, and Changes Since Proposal

In response to public comments, we have revised the scope and applicability of the proposed amendments to the standards of performance for equipment leaks of VOC for SOCMI (40 CFR part 60, subpart VV) and petroleum refineries (40 CFR part 60, subpart GGG). As proposed, all of the amendments to subparts VV and GGG, except the change in leak definitions for pumps and valves, applied to affected facilities in these industries that commenced construction, reconstruction, or modification after January 5, 1981, (SOCMI) or January 4, 1983, (petroleum refineries). In addition, all of the proposed amendments, except the leak definition change, applied to affected facilities under all other NSPS that cross-reference subpart VV (i.e., 40 CFR part 60, subparts DDD and KKK).

Based on the public comments, we decided to include only clarifications, changes that reduce burden, and additional compliance options in the final amendments to 40 CFR part 60, subparts VV and GGG. The final amendments to both subparts also limit which SOCMI and petroleum refinery affected sources are subject to the existing subparts. Specifically, the existing subparts only apply to those existing affected sources that commenced construction, reconstruction, or modification after January 5, 1981, (SOCMI) or January 4, 1983, (petroleum refineries) and on or before November 7, 2006. The final amendments to subpart VV also apply to affected sources under NSPS that cross-reference subpart VV (i.e., 40 CFR part 60, subparts DDD and KKK).

In addition to amending 40 CFR part 60, subparts VV and GGG, we also decided to develop new standards in new subparts VVa and GGGa of 40 CFR part 60 that apply only to SOCMI and petroleum refinery affected sources, respectively, that commence construction, reconstruction, or modification after November 7, 2006. These new standards parallel the standards in the amended subparts VV and GGG, but they also include different standards for pumps in light liquid service and valves in gas/vapor or light liquid service (i.e., lower leak definitions than in subparts VV and GGG), and they include additional recordkeeping and instrument calibration requirements. Furthermore, the new standards in 40 CFR part 60, subpart VVa include monitoring and repair requirements for connectors. The new standards do not apply to affected sources under 40 CFR part 60, subparts DDD or KKK because we have not amended those subparts to reference the requirements in subpart VVa and we have not completed an analysis to determine if the new standards are BDT for subparts DDD and KKK.

A. What are the final amendments to 40 CFR part 60, subpart VV?

The final amendments to 40 CFR part 60, subpart VV provide additional compliance options, clarify ambiguous provisions, and make technical corrections. These changes are summarized in Table 1 in section III.C of this preamble.

1. Applicability

The owner or operator of an affected facility subject to 40 CFR part 60, subpart VV may choose to comply with the requirements in new 40 CFR part 60, subpart VVa instead of the requirements in subpart VV.

2. Standards

The final amendments simplify the compliance requirements for pumps. When indications of liquids dripping are observed during weekly inspections, 40 CFR part 60, subpart VV requires repair of the leak following the same procedures as if the leak were detected by monitoring. The final amendment in 40 CFR 60.482–2(b)(2) allows the owner or operator to either repair the leak by eliminating the indications of liquids dripping or determine if it is leaking based on the instrument reading obtained by monitoring the pump in accordance with EPA Method 21 (40 CFR part 60, appendix A–7) or other approved equivalent monitoring techniques. This amendment will focus the leak detection and repair (LDAR) program on finding and repairing VOC leaks.

The final amendments also include an alternative compliance option that allows less frequent monitoring for pumps and valves in batch process units that operate part-time during the year. This alternative applies to currently required monthly, quarterly, and semiannual monitoring intervals; less frequent monitoring is not allowed for monitoring that is currently required on an annual or less frequent basis. For example, pumps in a process unit that operate 5,250 hours per year (about 60 percent of full-time operation) may be monitored every other month rather than monthly. This alternative will ensure that monitoring occurs consistently while the process unit is operating. The alternative monitoring schedule for batch processes was developed as part of the development of the hazardous organic national emission standards for hazardous air pollutants (NESHAP) (HON) (57 FR 62680). This alternative has been determined to be comparable to the provisions for continuous processes. As the time in use increases, the monitoring frequencies are identical for both batch and continuous processes.

In response to public comments, we have revised the proposed clarification to the initial monitoring requirements for pumps and valves (that all pumps and valves be monitored within the first month of operation after installation). The final amendments require the owner or operator to monitor all pumps

on a monthly basis regardless of whether the pump is new or existing. The owner or operator of a new valve must monitor the valve for the first time within 30 days after being placed into service to ensure proper installation. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. As an alternative to monitoring a new valve within 30 days, if the valves in the process unit are monitored under the alternative standards for valves that allow skip period leak detection and repair in 40 CFR 60.483–2, the owner or operator must count the new valve as leaking when calculating the percentage of valves leaking. If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

The clarifications to the requirements for sampling connection systems in 40 CFR 60.482–5 have been revised since proposal to add additional destinations for purged process fluid. All containers must be covered when not being filled or emptied. The amendments also clarify what materials must be captured and returned to the process during sampling.

In response to comments, we have revised the proposed option for delay of repair in 40 CFR 60.482–9. The proposed amendment would have allowed the owner or operator to discontinue monitoring for equipment on delay-of-repair. We have not included this in the final amendments and new standards because a leak may worsen while on delay-of-repair and require a more immediate shutdown. Therefore, all equipment on delay-of-repair must be monitored as scheduled. The option to consider equipment to be repaired if two consecutive readings are below the leak definition was not removed. If two consecutive readings are below the applicable leak definition, the owner or operator may remove the equipment from delay-of-repair.

3. Definitions

Several amendments clarify the original intent of the definitions in 40 CFR part 60, subpart VV. These definitions include ''connector,'' ''process unit,'' and ''sampling connection system.'' In addition, definitions of ''closed-loop system,'' ''closed-purge system,'' ''storage vessel,'' and ''transfer rack'' were added to further clarify existing definitions. The definition of ''process unit'' is discussed in further detail in section IV.A.3 of this preamble. The rationale for revising and adding the other definitions is included in Docket ID No. EPA–HQ–OAR–2006–0699.

4. Miscellaneous Corrections

Finally, the final amendments include a few technical corrections to fix references and other miscellaneous errors in 40 CFR part 60, subpart VV. No changes have been made to the proposed corrections, and a number of additional corrections are included in the final amendments. The technical corrections are identified in section III.A.3 of the preamble to the proposed amendments (71 FR 65307–65308, November 7, 2006) as well as Table 1 of this preamble.

B. What are the final amendments to 40 CFR part 60, subpart GGG?

A few minor changes have been made to the 40 CFR part 60, subpart GGG amendments since proposal. The heading and 40 CFR 60.590(b) were revised to clarify that the subpart applies to sources that commence construction, reconstruction, or modification on or before November 7, 2006, and 40 CFR 60.590(d) was revised to exclude facilities subject to 40 CFR part 60, subpart VVa. Proposed revisions that remain in the final amendments to subpart GGG include a definition of ''asphalt'' and an exemption from the requirements for OEL in 40 CFR 60.482–6(a) through (c) for OEL containing asphalt. The definition of ''process unit'' is comparable to the definition in 40 CFR part 60, subpart VV.

The final amendments also include a few technical corrections to fix references and other miscellaneous errors in 40 CFR part 60, subpart GGG. These changes are identified in section III.B.5 of the preamble to the proposed amendments (71 FR 65309, November 7, 2006). No changes have been made to these corrections since proposal.

C. What are the requirements of 40 CFR part 60, subpart VVa?

40 CFR part 60, subpart VVa applies to affected facilities in the SOCMI that are constructed, reconstructed, or modified after November 7, 2006. This new subpart includes all the requirements of 40 CFR part 60, subpart VV, as amended, along with new provisions. The owner or operator of an affected facility subject to subpart VVa may elect to comply with the CAR at 40 CFR part 65, subpart F, or the HON at 40 CFR part 63, subpart H, instead of the requirements in subpart VVa, provided they still comply with the requirements in 40 CFR 60.482–6a.

40 CFR part 60, subpart VVa includes lower leak definitions for pumps and valves than 40 CFR part 60, subpart VV. Under subpart VVa, the leak definition for pumps in light liquid service is 2,000 parts per million (ppm) (5,000 ppm for pumps handling polymerizing monomers) instead of 10,000 ppm. The leak definition for valves in gas/vapor service or light liquid service is 500 ppm instead of 10,000 ppm. Rationale for this new standard was provided in section III.A.1 of the preamble to the proposed amendments and is discussed further in section III.A.1 of this preamble.

40 CFR part 60, subpart VVa also includes requirements for monitoring connectors. The owner or operator is required to monitor connectors at a leak definition of 500 ppm and at a frequency that is based on the percentage of connectors found to be leaking. The rationale supporting the LDAR provisions for connectors is located in section III.A.2 of this preamble.

40 CFR part 60, subpart VVa includes additional recordkeeping requirements and quality assurance measures. Records must identify the monitoring instrument, operator, equipment, the date, and maximum instrument reading. A calibration drift assessment is required at the end of each day of monitoring and records of monitoring instrument calibrations are required. The calibration drift assessment requirements proposed for 40 CFR part 60, subpart VV were revised based on public comments. The requirements in the new standards include a requirement to remonitor equipment if the drift assessment shows positive drift. The requirements in the new standards provide for a less stringent remonitoring effort for drift assessments showing negative drift.

D. What are the requirements of 40 CFR part 60, subpart GGGa?

40 CFR part 60, subpart GGGa applies to affected facilities at petroleum refineries that are constructed, reconstructed, or modified after November 7, 2006. New subpart GGGa

includes the requirements in 40 CFR part 60, subpart GGG, as amended. Affected facilities must comply with the requirements in new subpart VVa of 40 CFR part 60, except for the monitoring requirements applicable to connectors.

III. Rationale for Changes Since Proposal

A. How did EPA develop new standards for 40 CFR part 60, subparts VVa and GGGa?

Five sources of information were considered in reviewing the appropriateness of the current NSPS requirements for new sources: (1) Applicable Federal regulations; (2) applicable state and local regulations; (3) data from National Enforcement Investigations Center (NEIC) inspections; (4) emissions data provided by industry representatives; and (5) petroleum refinery consent decrees. (A significant number of refineries, representing about 77 percent of the national refining capacity, are subject to consent decrees that limit the emissions from 40 CFR part 60, subpart GGG process units.) Once we identified leak definitions for various equipment types, we evaluated these leak definitions in conjunction with technical feasibility, costs, and emission reductions to determine BDT for each type of equipment.

The cost methodology incorporates the calculation of annualized costs and emission reductions associated with each of the options presented. Cost-effectiveness is the annualized cost of control divided by the annual emission reductions achieved. For NSPS regulations, the standard metric for expressing costs and emission reductions is the impact on all affected facilities accumulated over the first 5 years of the regulation. Details of the calculations can be found in the public docket (EPA–OAR–HQ–2006–0699). Our BDT determinations took all relevant factors into account, including cost considerations.

For each of the new standards, the predominant method used to reduce emissions from equipment leaks is the work practice of an LDAR program that includes periodic monitoring of equipment using EPA Method 21. This method has been used for more than 20 years to detect leaks and is currently the most widely-used test method. However, other approved methods may be used to detect leaks.

We also considered an equipment standard requiring installation of ''leakless'' equipment. ''Leakless'' equipment, such as diaphragm valves, is less likely to leak than standard equipment, but leaks may still develop. Therefore, monitoring or other type of observation is appropriate to ensure that leaks are caught if they develop. In addition, these types of equipment may not be suitable for all possible process operating temperatures, pressures, and fluid types. We could not identify any new ''leakless'' technologies that could be applied in all applications. Therefore, requiring ''leakless'' equipment is not technically feasible and this option was not considered to be BDT for SOCMI or petroleum refining sources. We note that 40 CFR part 60, subpart VV does include provisions for equipment designed for no detectable emissions, so owners or operators that do replace existing equipment with ''leakless'' equipment have options for compliance.

1. Leak Definitions for Pumps and Valves

We previously demonstrated that leak definitions of 2,000 ppm for pumps and 500 ppm for valves are BDT in the preamble to the proposed amendments to 40 CFR part 60, subparts VV and GGG (November 7, 2006, 71 FR 65305, with additional discussion at 71 FR 65308). Since proposal, the cost-effectiveness values for this new requirement have changed slightly based on changes to the assumptions used to develop emission estimates; section V of this preamble includes details on the specific changes. For SOCMI, the estimated emission reductions are 94 tons of VOC per year at a cost savings of $380/ton. For petroleum refineries, the estimated emission reductions are 13 tons of VOC per year at a cost of $1,600/ton. The cost to achieve these emission reductions is still considered to be reasonable; therefore, we maintain our original conclusion that EPA Method 21 monitoring of pumps and valves and repair of leaks above 2,000 ppm for pumps and 500 ppm for valves is BDT.

We have also evaluated the cost-effectiveness of lowering the leak definitions even further for valves because there are some state rules and petroleum refinery consent decrees at lower levels. The results of that analysis show that an LDAR program for valves at a leak definition lower than 500 ppm is not cost-effective. The analysis shows emission reductions of 26 tons of additional VOC per year at a cost-effectiveness of $5,700/ton for SOCMI and emission reductions of 8 tons of additional VOC per year at a cost-effectiveness of $16,000/ton for refineries. The additional VOC emission reductions at a leak definition lower than 500 ppm is not cost-effective. The results of the impacts analysis is provided in the docket (Docket ID No. EPA–HQ–OAR–2006–0699).

We decided not to consider a lower leak definition for pumps because we do not have evidence that it will achieve significant emission reductions at reasonable cost and because such a requirement would impose an unwarranted increase in the compliance burden. No other Federal or state rules require repair of pumps with leaks below 2,000 ppm, and concerns have been expressed in the past that repair of pumps with lower concentrations could result in significant and costly maintenance. We also cannot estimate the emission reductions because we are unsure how effective repairs will be for pumps with low leak concentrations. In addition, many facilities that will be subject to the new standards have other process units that are subject to other standards. Including a leak definition in the new standards that differs from the leak definitions in all other rules would make compliance more challenging at such facilities and unnecessarily increase the potential for inadvertent errors.

We also did not consider increasing the number of times per year that valves and pumps must be monitored. Valves and pumps are already subject to monthly monitoring. The cost to monitor more frequently would outweigh the possible emission reductions. Additionally, pumps are subject to weekly inspections for indications of liquids dripping. Therefore, the monitoring frequency was not changed and is still considered BDT.

2. Other New Standards in 40 CFR Part 60, Subpart VVa

Connector Monitoring. The current NSPS in 40 CFR part 60, subpart VV limits VOC emissions from connectors by specifying that if a potential leak is found by visual, audible, olfactory, or any other detection method, the owner or operator must eliminate the indications of the potential leak or monitor the connector to determine whether the potential leak is leaking VOC greater than 10,000 ppm. If the potential leak is actually a leak, it must be repaired. When the current NSPS were promulgated, we concluded that this procedure would reduce emissions by correcting major leaks.

After consideration of current operating practices, we concluded that repairing connector leaks as they are discovered is still the predominant method for reduction of VOC from connectors. However, during our review of the current requirements, we found a

number of Federal and state regulations that require additional efforts to reduce emissions, including regular monitoring and repair. Therefore, we evaluated options to achieve further emission reductions from connectors. Federal rules in which connector monitoring and repair of leaks above 500 ppm is required include the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks (HON) in 40 CFR part 63, subpart H, the National Emission Standards for Equipment Leaks—Control Level 2 Standards (Generic MACT) in 40 CFR part 63, subpart UU, the National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards (Ethylene NESHAP) in 40 CFR part 63, subpart YY, and the CAR. The National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (MON) in 40 CFR part 63, subpart FFFF also includes connector monitoring and repair of leaks above 500 ppm for new sources. In addition, the National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries (Refinery NESHAP) in 40 CFR part 63, subpart CC provides a higher maximum value for percent of leaking valves under which an owner or operator may use the skip period provisions if connector monitoring is included in the LDAR program. Based on this information, we felt that additional VOC control could be achieved by requiring connector monitoring and repair, but we needed additional information to determine whether connector monitoring is BDT. As a result, we requested comment on whether we should require periodic monitoring and repair of connectors to ensure that any leaks are corrected more quickly.

Upon consideration and review of the public comments, we evaluated whether the connector monitoring and repair provisions included in the Generic MACT are BDT for 40 CFR part 60, subparts VVa and GGGa. The Generic MACT provisions include a leak definition of 500 ppm and a monitoring frequency based on the number of connectors found to be leaking during the initial monitoring campaign.

For SOCMI, the estimated emission reductions achieved by connector monitoring and repair of leaks above 500 ppm are 230 tons of VOC per year at a cost of $2,500/ton. For petroleum refineries, the estimated emission reductions are 92 tons of VOC per year at a cost of $20,000/ton. The cost to achieve these emission reductions is considered to be reasonable for SOCMI sources but is not reasonable for petroleum refineries. Based on these impacts and consideration of current operating practices, we concluded that BDT for connectors at SOCMI sources is monitoring using EPA Method 21 or another approved alternative method at a frequency based on the number of connectors found leaking during initial monitoring and repair of leaks above 500 ppm. We concluded that BDT for connectors at petroleum refineries is equivalent to the current 40 CFR part 60, subpart GGG requirements. Therefore, we are promulgating connector monitoring and repair standards consistent with this determination for SOCMI sources subject to 40 CFR part 60, subpart VVa that will not apply to petroleum refinery sources subject to 40 CFR part 60, subpart GGGa.

B. How did EPA develop the new compliance requirements in 40 CFR part 60, subparts VVa and GGGa?

The recordkeeping requirements in the final amendments and new standards are authorized by section 114 of the CAA. Section 114 of the CAA allows EPA to require one-time, periodic, or continuous records for the purpose of determining if the owner or operator is in compliance with the standard. The recordkeeping requirements in the final amendments are the minimum necessary for affected facilities to demonstrate compliance and for EPA to enforce the rule. The recordkeeping requirements in the new standards include a few requirements in addition to the requirements in the final amendments. Most of these requirements are associated with new monitoring and repair requirements; other additional requirements are minimal and are necessary for EPA to enforce the rule. Further rationale for the new requirements is available below and in section IV.D of this preamble.

We have made significant changes to the proposed recordkeeping requirements as a result of the changes made to the scope and applicability of the standards. Because the final amendments to 40 CFR part 60, subparts VV and GGG include only clarifications to existing requirements, burden reducing provisions, and new compliance options, no changes or additions to the recordkeeping requirements in subpart VV or GGG are needed to document and/or enforce these amendments.

Sources subject to the new standards in 40 CFR part 60, subpart VVa are required to keep records of the same information required by 40 CFR part 60, subpart VV and certain additional information described below. Sources subject to 40 CFR part 60, subpart GGGa must comply with the requirements in subpart VVa except for the monitoring requirements applicable to connectors (and the associated recordkeeping requirements). Facilities subject to 40 CFR part 60, subparts DDD, GGG, or KKK are excluded from the requirement to comply with the recordkeeping provisions of subpart VVa because these subparts are not being amended to reference the new standards in subpart VVa.

The new recordkeeping provisions in 40 CFR part 60, subpart VVa require general identifying information for each monitoring activity required by the rule. As explained in the preamble to the proposed amendments (71 FR 65308, November 7, 2006), many facilities already record this information. This information requirement is consistent with other equipment leak standards and is needed by enforcement representatives to determine if the facility is complying with the standards. Specifically, EPA found that the results of the LDAR review demonstrated that the current requirements are not sufficient to verify that all monitoring requirements have been performed. For example, EPA enforcement initiatives have found missed monitoring (monitoring at an inappropriate interval, monitoring late, or not monitoring), understated leak rates, leaks not found or repaired, and monitoring records indicating that more equipment was monitored than physically possible given the time needed to meet EPA Method 21 requirements, among other issues. Since we cannot physically inspect every facility on the schedule required by the LDAR program, these additional records will provide safeguards that the program is being implemented as intended.

Other new recordkeeping requirements include specific information that is necessary to demonstrate compliance with the new monitoring provisions for connectors and pumps in light liquid service (weekly visual inspections for indications of dripping liquids). Records are also required to demonstrate compliance with the requirement for a calibration drift assessment at the end of each day and comparison of the results of the assessment with the most recent calibration results. We eliminated the proposed requirement to keep records of information on bypass lines because the new subpart does not include the requirement to monitor bypass lines. In addition, records of information related to the proposed initial monitoring requirement for pumps and valves

added to a process unit are not required because this monitoring requirement was revised since proposal, making additional records unnecessary.

We have reviewed the recordkeeping requirements and believe that these are the minimum needed to ensure compliance and that the requirements do not impose excessive costs. The costs of the recordkeeping requirements for 40 CFR part 60, subpart VVa, including the time required to enter and store additional information, are included in the information collection request (ICR) (see section V.B of this preamble).

C. How did EPA develop the final amendments to 40 CFR part 60, subparts VV and GGG?

The amendments to 40 CFR part 60, subpart VV are listed in Table 1 of this preamble. Most of the technical corrections for 40 CFR part 60, subparts VV and GGG were discussed in the preamble to the proposed amendments (71 FR 65302, November 7, 2006). Other technical corrections and amendments are the result of public comments, and these are discussed in detail in the responses to the applicable comments. For each amendment that is more significant than an editorial or grammatical correction, Table 1 to this preamble includes a reference to the rule language and a reference to the location of the detailed explanation.

TABLE 1.—SUMMARY OF FINAL AMENDMENTS TO 40 CFR PART 60, SUBPART VV AND RATIONALE FOR CLARIFICATIONS, ADDITIONAL COMPLIANCE OPTIONS, AND TECHNICAL CORRECTIONS

Citation	Explanation or location of explanation[1]	Amendment
Heading		Revised to clarify applicability of subpart.
60.480(b)		Revised to identify applicability to affected facilities that were constructed, reconstructed, or modified after January 5, 1981 and on or before November 7, 2006.
60.480(d)(2)		Clarified that design capacity refers to a chemical listed in 40 CFR 60.489.
60.480(d)(2)–(5)		Revised reference to nonexistent 40 CFR 60.482 to refer to 40 CFR 60.482–1 through 60.482–10.
60.480(e)(1)		Renumbered paragraph (e)(1) as (e)(1)(i) and paragraph (e)(2) as (e)(1)(ii); changed reference to paragraph (e)(2) to (e)(1)(ii).
60.480(e)(2)		Added paragraph that allows owners or operators to comply with 40 CFR part 60, subpart VVa as an alternative to 40 CFR part 60, subpart VV.
60.481	71 FR 65308, column 3	Corrected editorial errors in definition of ''Capital expenditures.''
60.481	71 FR 65307, column 2 and section 5.4.3 of RTC.	Added new definition for ''Closed-loop system.''
60.481	71 FR 65307, column 2 and section 5.4.3 of RTC.	Added new definition for ''Closed-purge system.''
60.481	Section 5.3.2 of RTC	Revised definition of ''Connector.''
60.481	Added missing word ''the'' before the word ''atmosphere'' and removed the word ''rapid''.	Revised definition of ''First attempt at repair.''
60.481	71 FR 65308, column 3 and updated the mailing address for ASME.	Revised definition of ''Hard piping.''
60.481	Section IV.A.2 of this preamble	Revised definition of ''Process unit.''
60.481	Section 5.9.3 of RTC	Revised definition of ''Process unit shutdown.''
60.481	71 FR 65308, column 1	Revised definition of ''Repaired.''
60.481	Section 3.2.1 of RTC	Added new definition for ''Storage vessel.''
60.481	71 FR 65307, column 3	Added new definition for ''Transfer rack.''
60.482–1(e)	Section 3.3 of RTC	Added paragraph (e) to address equipment in service less than 300 hours per year.
60.482–1(f)	71 FR 65304, column 3 and sections 5.6.1 and 5.6.2 of RTC.	Added paragraph (f) that allows less frequent monitoring of pumps and valves on batch process units that operate less than 365 days per year.
60.482–1(g)	Section IV.A.2 of this preamble	Added paragraph that clarifies inclusion of shared tanks in a process unit subject to this subpart.
60.482–2(a)(1)	71 FR 65307, column 1, and section IV.B.1 of this preamble.	Added clarification for pumps that begin operation in light liquid service after the initial startup date for the process unit.
60.482–2(a)(2)		Added reference to 40 CFR 60.482–1(f) as an exception to the requirement for weekly visual inspections of pumps in light liquid service.
60.482–2(b)(2)	71 FR 65304, column 2, 71 FR 65306, column 1, and section 5.2.2 of RTC.	Added monitoring and repair requirements if weekly visual inspection of pumps in light liquid service indicates liquids dripping from pump seal.
60.482–2(c)(2)	71 FR 65307, column 1	Added examples of first attempt at repair practices for pumps in light liquid service.
60.482–2(d)		Editorial correction and clarification to address renumbering of paragraphs (d)(1) through (6).
60.482–2(d)(1)(ii)		Replaced first word ''Equipment'' with ''Equipped.''
60.482–2(d)(4)(i)		Renumbered paragraph (d)(4) as (d)(4)(i).
60.482–2(d)(4)(ii)	71 FR 65304, column 2, 71 FR 65306, column 1, and section 5.2.2 of RTC.	Added monitoring and repair requirements if weekly visual inspection of a pump equipped with dual mechanical seals indicates liquids dripping from pump seal.
60.482–2(d)(5)(i)		Removed ''and'' from end of sentence.

TABLE 1.—SUMMARY OF FINAL AMENDMENTS TO 40 CFR PART 60, SUBPART VV AND RATIONALE FOR CLARIFICATIONS, ADDITIONAL COMPLIANCE OPTIONS, AND TECHNICAL CORRECTIONS—Continued

Citation	Explanation or location of explanation[1]	Amendment
60.482–2(d)(5)(iii)		Added paragraph to specify how a leak is detected.
60.482–2(d)(6)	71 FR 65304, column 2 and 71 FR 65306, column 1.	Revised to clarify procedure and time allowed for repair of leaks.
60.482–2(e)		Revised to add ''s'' to the end of ''no detectable emission.''
60.482–3(a)	Section 5.3.5 of RTC	Added reference to exemption in 40 CFR 60.482–3(j).
60.482–3(j)	71 FR 65308, column 3	Editorial clarification of section and paragraph references.
60.482–5(a) and (b)	71 FR 65307, column 2 and section 5.3.5 of RTC.	Rearranged paragraphs within these two paragraphs and made editorial corrections to provide clarity.
60.482–5(b)(2)	71 FR 65307, column 2, and section 5.4.3 of RTC.	Added provision that containers part of a closed-purge system must be covered or closed when not being filled or emptied.
60.482–5(b)(3)	Section 5.4.1 of RTC	Added provision that gases remaining in the tubing or other apparatus once the closed-purge system valve(s) and sample container valve(s) are closed are not required to be collected or captured.
60.482–5(b)(4)–(b)(4)(iv)(A)–(C)	Rearranged paragraph numbering and made a few editorial clarifications.	Same as current paragraph (b)(4) except for editorial clarifications.
60.482–5(b)(4)(iv)(D)	Section 5.4.2 of RTC	Added provision for use of a waste management unit meeting the requirements of 40 CFR 61.348(a).
60.482–5(b)(4)(iv)(E)	Section 5.4.2 of RTC	Added provision for use of a device used to burn off-specification used fuel oil in accordance with 40 CFR part 279, subpart G.
60.482–6(a)(1)	Section 5.3.5 of RTC	Added reference to exemptions in 40 CFR 60.482–6(d) and (e).
60.482–7(a)(1)	Corrected section designations	Clarified current paragraph (a) to specify that valves must be monitored monthly except as provided in 40 CFR 60.482–7(f), (g), and (h); 40 CFR 60.482–1(c) and (e); and 40 CFR 60.483–1 and 2.
60.482–7(a)(2)(i) and (ii)	71 FR 65307, column 1, and section IV.B.1 of this preamble.	Added clarification for valves that begin operation in light liquid service after the initial startup date for the process unit.
60.482–7(c)(1)(i)		Paragraph (c)(1) redesignated as paragraph (c)(1)(i).
60.482–7(c)(1)(ii)	71 FR 65307, column 3 through 71 FR 65308, column 1, and section 5.1.2 of RTC.	Added paragraph to allow an owner or operator to subdivide valves in a process unit.
60.482–8(a)(2)	Section 5.7 of RTC	Added clarification that audio visual olfactory indications of potential leaks should be eliminated within 5 calendar days of detection.
60.482–8(d)	71 FR 65307, column 1	Revised to require that first attempt at repair of pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors must include best practices under 40 CFR 60.482–2(c)(2) and 40 CFR 60.482–7(e).
60.482–9(a)	Section 5.9.3 of RTC	Clarified that for repair that occurs during a process unit shutdown, monitoring to verify that repair must occur within 15 days after startup of the process unit.
60.482–9(f)	Section 5.9.3 of RTC	Added new paragraph for a leaking pump or valve for which a delay in repair is allowed.
60.483–1(d) and 60.483–2(b)(5)		Added reference to new 40 CFR 60.485(h) that provides more detailed explanation for calculating the percent of valves leaking.
60.483–2(a)(7)	71 FR 65307, column 1, and section IV.B.1 of this preamble.	Added clarification for valves that begin operation in light liquid service after the initial startup date for the process unit.
60.483–2(b)(7)		Added paragraph to specify that a new valve must be monitored according to 40 CFR 60.482–7(a)(2)(i) or (ii) before the provisions of 40 CFR 60.483–2 can be applied to the valve.
60.484(a)	71 FR 65308, column 3	Editorial correction.
60.484(b)(2)		Editorial clarification.
60.485(b)		Revised reference to nonexistent 40 CFR 60.482 to refer to 40 CFR 60.482–1 through 40 CFR 60.482–10.
60.485(e)	71 FR 65308	Clarified that the requirements apply to a piece of equipment.
60.485(e)(1) and (2)	Section 6.3 of RTC	Clarified to specify that light liquids are organic compounds.
60.485(g)(4)	Corrected exponents in equation	Corrected equation for the net heating value of the gas being combusted in a flare.
60.485(g)(5)		Added ASTM D6420–99 as an alternative to EPA Method 18.
60.485(h)	Section 5.1.4 of RTC	Added equation and clarifications for calculating percent of valves leaking.
60.486(e)(2)(ii)	Section 7.4 of RTC	Revised to allow an alternative to requiring a signature for the list of equipment with no detectable emissions.
60.486(e)(6)	Section 3.3 of RTC	Added recordkeeping requirements for equipment in VOC service less than 300 hours per year.
60.487(c)(2)(i), 60.487(c)(2)(iii), 60.487(c)(2)(iv).	These changes are related to rearranging of paragraphs in 60.482–2.	Corrected references to specific sections and other editorial corrections.

[1] RTC refers to *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry and Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries. Background Information for Final Standards. Summary of Public Comments and Responses.* See Docket ID No. EPA–HQ–OAR–2006–0699.

IV. Summary of Comments and Responses

We proposed amendments to 40 CFR part 60, subpart VV and 40 CFR part 60, subpart GGG on November 7, 2006 (71 FR 65302). We published a NODA regarding OEL on July 9, 2007 (72 FR 37157). A total of 28 comment letters were received during the comment periods for the two notices. In response to these public comments, several changes were made in developing these final amendments and new standards. The major comments and our responses are summarized in the following sections. A summary of the remainder of the comments received during the comment period and responses thereto can be found in the docket for the final amendments and new standards (EPA–OAR–HQ–2006–0699).

A. Applicability

1. Affected Sources Under the Current NSPS

Comment: Numerous commenters objected to the proposed application of substantive new requirements to affected sources that became subject to 40 CFR part 60, subpart VV (or any of the subparts that reference subpart VV) on or before November 7, 2006 (hereafter referred to as ''subpart VV sources''). Proposed provisions that these commenters considered to be substantive are: (1) Changes to the definition of process unit; (2) annual EPA Method 21 monitoring of OEL; (3) bypass monitoring requirements for closed vent systems to control devices; (4) calibration drift assessments; (5) initial monitoring requirements for pumps and valves; and (6) maintaining records of all monitoring results. The commenters argued that applying the new provisions to subpart VV sources is unlawful.

To address the issue of compliance dates, several commenters recommended that EPA amend 40 CFR part 60, subpart VV so that it applies only to existing sources and develop a new 40 CFR part 60, subpart VVa that applies to affected sources that commence construction, reconstruction, or modification after November 7, 2006.

In contrast, two commenters urged EPA to apply the proposed requirements to all existing SOCMI and refinery process units, and a third commenter recommended applying the proposed leak definitions for pumps and valves to all SOCMI and refinery affected sources. All of these commenters noted that existing facilities are more likely than new sources to have problems with leaks and, thus, should receive extra scrutiny.

Response: In this action, EPA has decided to include any new requirements in a new 40 CFR part 60, subpart VVa, consistent with the commenter's suggestions. The new standards in subpart VVa include lower leak definitions for pumps (2,000 ppm) and valves (500 ppm), monitoring of connectors, a calibration drift assessment, and expanded recordkeeping requirements. The proposed requirement to monitor bypass lines has not been included in the new standards because few facilities capture and vent equipment leak emissions to a control device. Additionally, most control devices would be subject to other standards. The proposed requirement to monitor OEL has not been included in the new standards because this requirement has been determined to not be cost-effective. The cost-effectiveness for SOCMI was found to be $3,800/ton for 25 tons/yr of VOC emission reductions. For petroleum refineries, the cost-effectiveness was found to be $14,700/ton for 2.4 tons/yr of VOC emission reductions. Taking the low emission reductions into consideration, the Agency has determined that monitoring OEL is not BDT. As discussed in sections IV.B.1 and IV.A.2 of this preamble, the initial monitoring requirements for new pumps and valves and the changes to the definition of ''process unit'' are not new standards, and these changes are retained in the final amendments to 40 CFR part 60, subpart VV as well as being included in the new subpart VVa.

Instead of referencing 40 CFR part 60, subpart VVa from 40 CFR part 60, subpart GGG, we decided to create a new 40 CFR part 60, subpart GGGa that applies to new petroleum refining affected sources. This new subpart GGGa references all of the new standards in subpart VVa except for the monitoring requirements for connectors. Reasons for the differences in standards between subparts VVa and GGGa are described elsewhere in this preamble.

Sources subject to 40 CFR part 60, subpart DDD and 40 CFR part 60, subpart KKK, and sources subject to the Refinery NESHAP (40 CFR part 63, subpart CC), but not subject to 40 CFR part 60, subparts VV or GGG, are not required to comply with 40 CFR part 60, subpart VVa at this time.

While we understand there is a concern that existing sources are more likely to leak, there is no provision in section 111 of the CAA that allows us to retroactively apply new standards to sources already subject to the NSPS. EPA agrees with the statements made by the commenters that relate to the application of new requirements under NSPS to existing sources. Section 111 of the CAA does state that NSPS will apply only to new, reconstructed, or modified sources after the date of proposal. The authority to regulate existing sources under section 111(d) of the CAA does not authorize EPA to regulate criteria pollutants or precursors to such pollutants. Therefore, we have not included any new requirements for existing sources in the final amendments to 40 CFR part 60, subpart VV and subpart GGG. These requirements will apply only to sources that commence construction, reconstruction, or modification after the November 7, 2006 proposal date.

2. Definition of Process Unit

Comment: Numerous commenters expressed concern that the revised definition of process unit is inconsistent with EPA's original intent when 40 CFR part 60, subpart VV was proposed (i.e., it expands the scope), that it complicates compliance, or that it creates additional confusion. One commenter stated that under the existing definition, a component is part of a process unit based on its function, not whether it is classified as a specific type of equipment. The commenter indicated that since 1981, sources and their regulators have decided what constitutes a process unit based on what equipment serves the functions described in the definition, and this process unit may be different from process units under other rules.

After reading the preamble discussion of the proposed change, one commenter expressed concern that the proposed definition inadvertently includes valves and other equipment on storage tanks. Other commenters objected to the inclusion of all feed, intermediate, and product storage vessels and transfer operations in the definition because the following discussion from the original rulemaking notice for 40 CFR part 60, subpart VV (46 FR 1139, January 5, 1981) makes it clear that EPA's original intent was to include storage in the process unit only if it is within the battery limits of the process:

''A process unit is specifically defined as equipment assembled to produce one or more of the chemicals listed in proposed appendix E which can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the final product. A process unit includes intermediate storage or surge tanks and all fluid transport equipment connecting reaction, separation, and purification devices. All equipment within the battery limits is included. However,

offsite fluid transport and storage facilities are excluded.''

Several commenters described ways the proposed change could complicate compliance. For example, two commenters indicated that it would increase the difficulty of tracking equipment, process units, and applicable requirements at refineries where the storage and transfer areas are consolidated into ''logistical process units'' that support numerous process units, particularly when storage tanks are shared by multiple process units. One commenter added that it may also either restrict the ability of a facility to use its tanks as needed, because they will have been forced into an arbitrary association with a given unit, or create a useless recordkeeping exercise each time a tank switches contents or services a different process. To avoid immediate compliance problems for affected sources that are currently subject to 40 CFR part 60, subpart VV, a commenter requested that existing facilities be allowed 180 days after promulgation of the amendments so that they will have time to include the additional equipment in the applicable LDAR programs. Commenters also noted that the rule should clarify how to assign storage vessels and transfer racks that are shared by multiple processes; they suggested using language in the HON and the Refinery NESHAP as a guide. One commenter stated that EPA should clarify that a compressor is still a separate affected facility from the group of equipment in a refinery process unit under 40 CFR part 60, subpart GGG.

Response: The first sentence in the definition of ''process unit'' in the final amendments and new standards includes the term ''components'' as in the existing definition rather than ''equipment'' as in the proposed amendments. This correction distinguishes major process vessels such as reactors and distillation units (i.e., ''components'') from pieces of equipment, as defined in the rule, that are subject to the LDAR standards. In addition, the last sentence of the proposed definition has been replaced to reference ''equipment'' as it is defined in the applicable subpart. This change should address concerns that compressors at petroleum refineries are separate affected sources. Otherwise, there are no differences between the proposed and final definitions.

The amended definition of process unit clarifies EPA's original intent and is consistent with the language provided by the commenters from the January 1981 rulemaking. It is clear from the 1981 rulemaking that all equipment that is located within the battery limits is included as part of the process unit. Likewise, there is no question that any fluid transport and storage facilities located outside of the facility property are not included. However, the 1981 language also states that a process unit includes storage tanks and all fluid transport equipment. There is no specification that these components are only included if within the battery limits. There has been confusion in the past regarding the inclusion of components outside of the battery limits but within the property of the facility. To clarify this issue, EPA previously issued formal guidance (see April 6, 1994 letter from John Rasnic to Raymond Hiley in Docket ID No. EPA-HQ–OAR–2006–0699).

We agree that the determination of whether a particular tank is a storage tank, feed tank, or intermediate tank and part of a process unit must be done on a site-specific basis, dependent on how the tank functions within a particular plant site. The physical proximity of the storage tank to the other processing equipment within a process unit is not a sole determinate in establishing whether a storage tank is part of the process or not.

The final amendments and new standards include provisions for assigning a shared storage tank to a specific process unit for the purposes of an LDAR program. The owner or operator will need to determine what process units the storage tank is associated with. They will then determine which process unit, or combination of units subject to the same subpart, has the greatest annual quantity of stored materials in that tank. The subpart that the process unit (or combination of units subject to the same subpart) associated with the greatest use of that tank is subject to will be the applicable subpart for the tank. The process unit, which is subject to the same subpart as the tank, with the greatest annual quantity of stored materials in that tank will be the process unit the tank is assigned to. If a tank is shared equally between two process units that are subject to 40 CFR part 60 standards, the process unit with the most stringent requirements will be the unit the tank is assigned to. For example, if the predominant use of a storage tank is to service a process unit subject to 40 CFR part 60, subpart VV, that storage tank is a part of that process unit and subject to subpart VV and the equipment must be monitored at a leak definition of 10,000 ppm.

Comment: Two commenters wondered how the change in the definition of ''process unit'' would affect modification and reconstruction determinations. One commenter expressed concern that it will make it easier for an owner or operator to add new equipment to an existing process unit without triggering the threshold that would make the process unit a new affected source. The second commenter noted that including feed tanks in the definition changes the basis for the modification and reconstruction cost test and asked how changes that have already occurred should be handled in this determination.

Response: Since the amended definition is a clarification of our original intent with respect to applicability of 40 CFR part 60, subpart VV to equipment on storage tanks and lines between storage tanks and processing equipment, there will be no impact on modification or reconstruction determinations. If a facility believes that they have performed a previous modification or reconstruction determination in error, they should contact their delegated authority.

B. Standards

1. Initial Monitoring of Pumps and Valves

Comment: Numerous commenters objected to the proposed clarifications for the initial monitoring of pumps and valves that are installed after the startup of the process unit. Several commenters stated that the proposed provisions are significant new requirements and cannot be finalized without demonstrating that they represent BDT and giving the public a chance to comment on the supporting analyses. Two commenters indicated that they are unaware of any SOCMI facilities that routinely monitor new pumps and valves within 1 month of startup, and the supporting documentation for the proposal contains no data from SOCMI sources. Several commenters requested that EPA allow at least 90 or 180 days because complying within 1 month would be burdensome, particularly for facilities that use third party contracting for monitoring; 1 month is not enough time to integrate new equipment into the monitoring program; 40 CFR 60.8 of the General Provisions provides 180 days for performance tests; and EPA has not explicitly stated how monitoring within 1 month will reduce emissions. Two commenters noted that EPA's justification of the requirement for valves is that it is needed to ensure that the valve does not leak until its first quarterly or annual monitoring, but no data were presented to show such leakage occurs or is a problem. The

commenters also requested that when establishing the final requirement for initial monitoring of pumps and valves, the timeframe be given in days, not months.

In contrast with the above comments, three commenters supported the proposed language or more stringent requirements. One of these commenters recommended monitoring new pumps within 1 month after installation to minimize the time period for potential leaks. A second commenter recommended that monitoring be required even sooner after installation. This commenter also questioned why a clarification of the requirements for pumps was needed because the preamble to the proposed amendments did not explain how industry currently handles new pumps and why that practice is a problem. This commenter also objected to the second sentence in 40 CFR 60.482–7(a)(2) because it means valves added to a process would not have to be monitored for 2 consecutive months before implementing skip monitoring, which is less stringent than the requirements for valves in an entirely new process.

Response: The language pertaining to the initial monitoring of new pumps and valves was added to the final amendments and new standards to clarify how new equipment should be handled in the existing monitoring schedule, but these are not new requirements. Under the current rule, pumps are to be monitored monthly whether they are newly installed or installed prior to the process unit becoming an affected source (40 CFR 60.482–2(a)(1)). It is unclear to us how a facility is complying with the requirements for pumps if they are not being monitored monthly. Also under the current rule, all new valves are to be monitored monthly (i.e., base period) until two consecutive monthly readings are found below the applicable leak definition, at which point the valve may be monitored quarterly until a subsequent leak is found (40 CFR 60.482–7(a)). Finding of a subsequent leak reverts the monitoring back to monthly until two consecutive monthly readings below the applicable leak definition is reestablished. The current rule also has an alternative standard for valves at 40 CFR 60.483–2 which allows for longer ''skip'' periods based on continued performance. Again, we are uncertain that a facility is complying with the requirements for these valves if they are not monitoring new valves within the first month of operation.

However, to provide operational flexibility, we have decided to add an option for newly installed valves in the final amendments and new standards. If a new valve is placed into service during a skip period, the source has the option to either monitor the valve on the monthly schedule and establish the skip period for that valve, or count the valve as a leaker in the percent leaking calculation. If the result of the percent leaking calculation remains below 2.0 percent with the new valve counted as a leaker, the owner or operator must monitor the new valve by the next scheduled skip period or within 90 days, whichever comes first. We have stated the timeframe for these requirements in days instead of months in the final amendments and new standards (30 days for pumps and either 30 or 90 days for valves, depending on whether the owner or operator is complying with the skip monitoring option).

Comment: Three commenters requested clarification of the applicability of the proposed initial monitoring provision. Two commenters stated that the term ''placed in service'' clearly implies that pumps and valves should follow the initial monitoring schedule after they are initially installed. However, the term ''placed in service'' also implies that previously installed pumps and valves should be monitored after they have been placed back into service after maintenance, turnarounds, and repairs. Both commenters recommended changes to clarify that only newly installed or rebuilt pumps and valves should be monitored following the schedule for initial monitoring.

Response: The initial monitoring requirement is for pumps and valves that come into VOC service through a process expansion or replacement not associated with a repair (e.g., preventative maintenance). These pumps and valves may be newly purchased or they may be equipment that was previously in service elsewhere in the process unit or facility. A newly purchased, rebuilt, repaired, or remanufactured pump or valve installed to repair a leaking pump or valve is not subject to the initial monitoring requirements. Instead, the pump or valve should be monitored to verify that there is no longer a leak (as required in the definition of ''repaired'') and may be subsequently monitored according to the schedule that applied to the previously leaking pump or valve.

To further clarify this issue, we have revised 40 CFR 60.482–2(a)(1), 40 CFR 60.482–7(a)(2), 40 CFR 60.483–2(b)(7), 40 CFR 60.482–2a(a)(1), 40 CFR 60.482–7a(a)(2), and 40 CFR 60.483–2a(b)(7).

2. Weekly Pump Inspections

Comment: Numerous commenters addressed the proposed changes to the requirements for weekly inspections of pumps. One commenter supported the proposed changes, including the changes to 40 CFR 60.482–2(b)(2)(ii), which states that if a visible liquid leak is found, it may be repaired by removing the visible indication of the leak. Based on the commenter's experience, a visible leak does not always indicate a regulatory leak. Another commenter agreed with the clarification allowing facilities to determine if a leak is emitting VOC using EPA Method 21 because it will help to focus repairs on pumps leaking hydrocarbons.

Three commenters did not support the proposed changes to the weekly inspection requirements. Two of these commenters disagreed with EPA's conclusion that the existing requirements are overly burdensome. According to one commenter, an operator should be required to make a showing of an undue burden; simply stating that an operator may have to conduct more inspections and repair more leaks than absolutely necessary does not demonstrate an undue burden. Two commenters noted that eliminating evidence of liquids dripping does not guarantee that the pump is no longer leaking VOC. As a result, these two commenters stated that monitoring should be required after eliminating evidence of liquids dripping to verify that repair was successful. Even if liquids dripping are not process fluid, one commenter noted that the liquid is probably either seal barrier fluids or condensate from a pump jacket used for temperature control. Regardless of the cause or fluid, one commenter noted that any liquid dripping may be a first sign of a potential maintenance problem that is best addressed as soon as possible as a matter of good operational practice as well as good environmental practice.

Response: The aim of the LDAR program is to find and repair leaks of VOC. In some instances, the liquids found dripping from pumps are not VOC-containing liquids or otherwise would not meet the leak definition. In these cases, the pump would not be required to be repaired under the LDAR program. Adding the option to monitor allows the owner or operator to determine if the liquids dripping constitute a VOC leak, thus focusing their efforts on reducing VOC emissions. If the owner or operator chooses not to monitor the pump to determine if the liquids dripping are a VOC leak, the liquids dripping from the pump are

classified as a VOC leak. The leak must be repaired by eliminating indications of liquids dripping, and the appropriate recordkeeping and reporting requirements for leaks apply to that pump. We agree with the commenter that persistent liquids dripping may indicate an operation problem that should be addressed by maintenance. If indications of liquids dripping are noted for one pump during multiple weekly inspections, we encourage facilities to ensure that the pump is operating properly. We do not agree that more frequent EPA Method 21 monitoring is necessary because pumps are currently monitored on a monthly basis and the additional monitoring would not result in substantial emission reductions.

3. Connectors

Comment: In response to our request for comments regarding whether connector monitoring should be required, three commenters expressed support for it, and nine commenters opposed it. Supporters argued that significant reductions could be achieved at a reasonable cost. Opponents argued that the impacts analysis overstated the emission reductions and underestimated the costs. According to two of the opponents, EPA did not require connector monitoring in the MON (40 CFR part 63, subpart FFFF) because the cost was determined to be unreasonable. One commenter indicated that monitoring as proposed is not worth the effort because most connectors are adjacent to valves, and these connectors are investigated and monitored when valve monitoring results in abnormal readings.

Six commenters objected to some of the assumptions we used to estimate equipment leak emissions. Some of these commenters stated that our emission reduction estimates were high because we used assumed leak frequencies and leak rates from *Protocol for Equipment Leak Emission Estimates* (EPA–453/R–95–017, November 1995) (the Protocol document) rather than actual field data. One commenter added that these data often predict emissions an order of magnitude higher than the actual emissions. Another commenter submitted a report that concluded there is no statistical difference in average leak rates between initial and subsequent monitoring at HON and MON units. This commenter also questioned the assumption that all leaking connectors would be successfully repaired after each monitoring cycle. Several commenters objected to estimating emissions based on leak rates equal to 170 percent of actual observed leak rates. One commenter noted that one refinery monitored more than 22,000 connectors and found only four leaking at greater than 1,000 ppm. Less than 0.5 percent of the connectors in process units subject to the HON at another refinery were leaking at greater than 500 ppm.

Four commenters objected to various elements in the cost estimates. These commenters noted that more connectors than valves are difficult to monitor, and the cost analysis did not include the cost for the additional labor and equipment needed to monitor these connectors. One commenter stated that the unit cost for monitoring connectors should be more than $1.50 per connector because the time required to monitor a connector is longer than for other types of equipment. The increased monitoring time is the result of several factors: (1) The distance that must be traversed per component is greater; (2) connectors often are in hard-to-reach locations, requiring the operator to squeeze through small spaces, often having to remove the monitor backpack; and (3) connectors tend to be spread out and are hard to find. In addition, this commenter noted that recordkeeping for connectors is more burdensome and complicated than for valves. Connectors are not typically shown on process and instrumentation drawings, making them difficult to find. The commenter stated that our estimate of 10 hours per year to complete administrative tasks and reports associated just with monitoring connectors is inadequate. Finally, the commenter noted that our cost estimates omit the cost of a data collection system or monitoring device rental; the commenter estimated these costs to be $14,500 for data collection systems and $135 per day for monitor rental. The commenter stated that even if a facility has a data collection system, additional licenses are needed to add connectors. Another commenter stated that rationale for requiring monitoring at SOCMI facilities does not apply to natural gas processing plants; thus, this commenter requested that an impact analysis be performed to address natural gas processing plants before making that industry subject to connector monitoring.

In contrast with the above comments, three commenters were in favor of adding connector monitoring to the rule. One commenter suggested that connectors be monitored annually or biennially because they have significant leak potential that would go undetected without monitoring. Regardless of the uncertainties in the leak rates and emissions factors, another commenter stated that connector monitoring should be required because emissions reductions can be achieved at a relatively low cost. The third commenter supported a requirement to monitor connectors at SOCMI sources because it is technically feasible, our impacts analysis shows it is economically feasible, and it would achieve greater reductions than the proposed amendments for pumps and valves. According to this commenter, more accurate emissions data in the impacts analysis is unnecessary because emissions inventories based on monitoring data typically show emissions that are higher than the emissions estimated using engineering calculations and emission factors, which would only strengthen the argument for monitoring. This commenter also argued that refineries should be required to monitor connectors because such monitoring is technically feasible, it is already required for some refineries in Texas and California, and our impacts analysis showed connectors at refineries were more likely to leak than connectors at SOCMI sources.

Response: Both the HON and MON regulations are based on emissions of hazardous air pollutants (HAP). NSPS are based on VOC emissions (both HAP and non-HAP). When calculating the cost-effectiveness for NSPS, there are more possible emission points and a higher percentage of regulated pollutants in the emissions because the analysis is not based only on HAP emissions. This results in a different conclusion for cost-effectiveness than in the HON or MON.

The commenter's claim that we used the leak frequencies and leak rates in the Protocol document for the SOCMI analysis is incorrect. We used the same initial leak frequency (0.36 percent) as in the MON analysis. We also started with the same initial leak rate (0.000186 kilogram (kg)/hour (hr)/connector), but we then escalated it in the same manner that leak rates for pumps and valves were escalated. The leak frequencies and leak rates in the MON analysis were based on industry-supplied data for almost 165,000 connectors. We decided not to use the leak rate data in the report supplied by one of the commenters because it contains a smaller data set (29,000 connectors), and it is possible that these data are also included in the larger data set. However, our assumption that the subsequent leak frequency is the same as the initial leak frequency is consistent with the conclusion in the report cited by the commenter.

The new standards in 40 CFR part 60, subpart VVa include connector monitoring because we have determined

that it is cost-effective at SOCMI sources. The specific monitoring provisions are the same as in the Generic MACT. However, we have determined that connector monitoring is not cost-effective for petroleum refineries. Therefore, an exemption from the provisions for connector monitoring has been included in 40 CFR part 60, subpart GGGa. At this time, we are not reviewing 40 CFR part 60, subpart KKK; therefore, no cost analysis has been performed on connector monitoring for these sources, and natural gas processing plants subject to 40 CFR part 60, subpart KKK are not subject to the connector monitoring requirements in subpart VVa.

After reviewing the comments, we revised the impacts analyses to include two of the suggested changes to the cost estimates. First, we corrected an error, which increased the estimated time for reporting and administrative activities related to connectors from 10 hr/year (yr) to 50 hr/yr. Second, although we are not aware that monitoring contractors charge a higher fee for connectors than for other equipment, we accept the commenter's suggested fee of $2.50/connector because the $1.50/connector that we used in the original analysis may be closer to the low end of the range than the average. We disagree with the other changes suggested by the commenters. Details of the revised impacts analysis, including rationale for not making the suggested changes, are provided in the docket (Docket ID No. EPA–HQ–OAR–2006–0699).

C. Test Methods and Procedures

Comment: Two commenters supported the requirement to conduct calibration drift assessments and remonitor when the assessment shows a negative drift of more than 10 percent. Other commenters acknowledged that a drift check is a good practice or a useful quality assurance/quality control (QA/QC) tool, and one commenter agreed with EPA's rationale for requiring drift checks.

On the other hand, four commenters opposed the drift check requirement, saying it is unnecessary and provides no environmental benefit. One of these commenters added that monitoring instruments such as the Foxboro TVA 1000 FID/PID or Foxboro TVA 1000B are quite stable over a 24-hour period, and EPA has not presented data or an analysis showing the need for calibration assessments. A second commenter noted that instruments typically drift in a positive direction. A third commenter argued that a drift check and re-monitoring is a futile effort to make the equipment leak monitoring method more accurate than was originally intended and than the instruments can achieve because of the following: (1) The Foxboro TVA 1000B instrument accuracy is only ±25 percent for readings between 1 and 10,000 parts per million by volume (ppmv); (2) a response factor as high as 10 is allowed for compounds of interest; (3) the 10 percent drift limit is inconsistent with the level of the instrument's accuracy allowed by EPA Method 21; and (4) leaking equipment does not emit a constant concentration. In addition, this commenter noted that drift checks conducted to satisfy consent decrees have shown only about 10 percent of instruments drift more than 10 percent every 2 to 3 weeks, and the release of calibration gases would be considered a negative environmental impact.

Response: We are removing the requirement for a post-test calibration drift assessment from the final amendments but retaining the requirement for the new subparts. Post-test calibration drift assessments constitute good practice and are a useful QA/QC tool to validate the proper operation of the monitor during the monitoring period and, hence, the measurement data. The requirement for a calibration drift assessment is not an effort to make the method more accurate than was originally intended, but is intended as an additional quality assurance check.

Comment: Numerous commenters considered the proposed re-monitoring requirement to be excessive. Instead of re-monitoring when instrument readings are greater than 20 percent of the applicable leak definition, two commenters suggested changing the threshold to 75 or 80 percent. Another commenter suggested using a percentage equal to 100 minus the percent of negative drift. If re-monitoring is required when negative drift occurs, two commenters stated that an owner or operator should also have the option of re-monitoring when positive drift occurs and reclassifying leakers as nonleakers. One of these commenters also suggested four additional changes: (1) Because monitoring shifts may vary, require the assessment at the end of each day rather than the end of each monitoring shift; (2) allow an unlimited number of calibration drift assessments per day; (3) determine drift relative to the most recent calibration value rather than the initial value for the day; and (4) specify that a drift assessment is not required after re-monitoring.

Response: We agree with the suggestion to establish the retest criterion at the percentage equal to 100 minus the percent of negative drift and are modifying the requirement accordingly. We also agree with the commenter's suggestion that an owner or operator should have the option of re-monitoring when positive drift occurs and reclassifying leakers as non-leakers when the re-monitoring after recalibration due to positive drift indicates the previously identified leak is below the leak definition concentration. We agree that monitoring shifts may vary, and the new standards require the assessment at the end of each day rather than the end of each monitoring shift. The new standards allow an unlimited number of calibration drift assessments per day, and we have clarified that the drift assessment is determined relative to the most recent calibration value rather than the initial value for the day. We do not agree that a drift assessment is not required after remonitoring and have not made this change to the new standards.

D. Recordkeeping and Reporting

Comment: One commenter supported the proposed requirement to keep records of all monitoring results because more and better data can only help facility owners and operators efficiently and effectively address the problem of fugitive emissions. Another commenter stated that records of weekly pump inspections are needed to make the inspection requirement enforceable. On the other hand, many commenters either opposed or urged us to reconsider the need for one or more of the following proposed recordkeeping requirements: (1) Results of all monitoring events; (2) time of each monitoring event; (3) information related to the proposed initial monitoring requirement for pumps and valves added to a process unit; (4) results of the proposed monitoring of OEL; (5) information related to the proposed requirement to monitor bypass lines; (6) results of calibration drift checks; and (7) results of weekly pump inspections.

Several commenters stated that the additional recordkeeping would be burdensome and either would not improve the rule's effectiveness or is excessive relative to any minimal improvement in performance. In addition, one commenter stated that the proposal preamble did not adequately explain how we estimated the cost of the additional recordkeeping and reporting for SOCMI sources to be $369,000/yr, and another stated that the proposal preamble did not explain why the current monitoring requirements are not sufficient to verify that monitoring was performed. According to one commenter, recording the time of

monitoring has hindered many programs and reduced productivity, and the additional records will generate an administrative backlog of data and create issues with storage and accessibility. Although this commenter agreed that the proposed records can be useful in verifying quality control of the LDAR program, the commenter asserted that a more cost-effective way to achieve quality control is to physically monitor the program. Furthermore, this commenter stated that by requiring the records, we are specifying the means by which a facility must implement the LDAR program rather than outlining the performance standard. Another commenter expressed concern that the additional recordkeeping exposes facilities to the potential of incurring deviations for records that serve no purpose.

Response: As stated in section III.B of this preamble, the recordkeeping requirements in the final amendments and new standards are authorized by section 114 of the CAA. We have made significant changes to the proposed recordkeeping requirements as a result of the changes made to the scope and applicability of the standards. Because the final amendments to 40 CFR part 60, subparts VV and GGG include only clarifications to existing requirements, burden reducing provisions, and new compliance options, no changes or additions to the recordkeeping requirements in subpart VV or GGG are needed to document and/or enforce these amendments. The recordkeeping requirements apply to the new standards (40 CFR part 60, subparts VVa and GGGa), as proposed, with a few exceptions. First, we removed the requirement to record the time of each monitoring event because the total number of pieces of equipment that are monitored each day should be sufficient for evaluating the ability of an operator to properly perform EPA Method 21. Second, records of information on bypass lines are not required because the new subpart does not include the requirement to monitor bypass lines. Third, because sources subject to subpart GGGa are not required to comply with the monitoring requirements applicable to connectors, the associated recordkeeping requirements do not apply to those sources. CAA section 114 specifically provides that we may have access to and copy any records and inspect any monitoring equipment and compliance method.

E. Burden Estimates

Comment: According to one commenter, the burden impact analyses of the proposed new recordkeeping and reporting requirements as presented in the preamble and docket do not comply with the ICR requirements of the Paperwork Reduction Act (PRA). The proposed new requirements of concern to the commenter are the requirements to keep records of information for all monitoring events, the time of each monitoring event, the time a new pump or valve is placed in service and results of new monitoring requirements for such pumps and valves, results from the new monitoring requirement for OEL, results of the new calibration drift checks, and results of weekly pump inspections. Another commenter also stated that the ICR requirements in the PRA were not met for recordkeeping and reporting associated with the proposed initial monitoring requirement for valves. A third commenter expressed a general concern that the proposed recordkeeping requirements may not meet the administrative requirements for proposing new NSPS.

One commenter noted several specific deficiencies and concerns with the burden impact analyses. First, it is not clear if all of the proposed new requirements are addressed in the ICR for sources subject to NSPS 40 CFR part 60, subpart GGG because the ICR does not discuss the incremental effects of the new requirements. Second, the ICR for SOCMI sources appears to address impacts only for those sources that elect to comply with the CAR option, not those that would comply directly with 40 CFR part 60, subpart VV. Third, no ICR analyses were provided for sources that are subject to other rules that reference subpart VV (i.e., NSPS subparts DDD and KKK of 40 CFR part 60, and the Refinery NESHAP). Fourth, the available analyses appear to address burden impacts only for sources that become subject to subparts VV and GGG in the future, but the proposed new requirements also would apply to sources that are currently subject to subpart VV or any of the rules that reference it. Fifth, even if some facilities voluntarily collect some of the records of concern, a requirement making their collection mandatory is still subject to the PRA, Regulatory Flexibility Act, and Executive Order 12866. Sixth, the commenter noted that the claim in the preamble that records of all monitoring events would be ''useful'' is not a legal basis for imposing the recordkeeping requirement. Seventh, if the total burden for all of the sources exceeds $100 million per year, additional review is triggered under other laws and Executive Order 12866. Based on the lack of analyses, the commenter stated that proposed recordkeeping and reporting requirements cannot be imposed on any sources, except perhaps new sources subject to subpart GGG, without additional proposal notice and opportunity for public comment.

Response: We disagree with the conclusions drawn by the commenters regarding the availability of the ICR. Document number EPA–HQ–OAR–2006–0699–0038 is the ICR associated with the CAR and all subparts that reference the CAR. This supporting statement displays the burden for sources that opt to comply with the CAR and for sources that opt to comply with their own referenced subpart, including 40 CFR part 60, subpart VV. For reference, pages 2–3, 6–7, 12–16, 33, 53, 77, and 112 all provide information specific to 40 CFR part 60, subpart VV.

For the final amendments and new standards, we have made adjustments to the supporting statements for all subparts involved. The burden associated with the amended 40 CFR part 60, subpart VV and the new 40 CFR part 60, subpart VVa is included in the supporting statement for the CAR and all other referenced subparts. The burden associated with the amended 40 CFR part 60, subpart GGG and the new 40 CFR part 60, subpart GGGa is included in the supporting statement that originally just supplied information for subpart GGG.

Because this particular rulemaking did not evaluate sources subject to 40 CFR part 60, subparts DDD and KKK or the Refinery NESHAP, we have not included any changes to the associated ICR for these subparts.

V. Summary of Cost, Environmental, Energy, and Economic Impacts

In setting standards, the CAA requires us to consider alternative emission control approaches, taking into account the estimated costs and benefits, as well as the energy, solid waste, and other effects. We are presenting estimates of the impacts for the 500 ppm leak definition for valves and the 2,000 ppm leak definition for pumps in 40 CFR part 60, subparts VVa and GGGa and connector monitoring in subpart VVa. The final amendments are clarifications to the existing subpart VV and subpart GGG to 40 CFR part 60; they have no associated emission reduction impacts. The cost, environmental, and economic impacts of the new standards are expressed as incremental differences between the impacts of SOCMI and petroleum refining process units complying with the new subparts and the current NSPS requirements (i.e., baseline). The impacts are presented for SOCMI and petroleum refining process

units constructed, reconstructed, or modified over the next 5 years. The analyses and the supporting documentation referenced below can be found in Docket ID No. EPA–HQ–OAR–2006–0699.

EPA estimates that there are no significant energy or secondary environmental impacts as a result of the new standards. The new standards are changes to work practice requirements and do not require changes to equipment or control devices. Therefore, use of fuel or electricity is not expected to increase significantly as a result of the new standards. Likewise, the new standards do not require physical changes that have the potential to increase wastewater or solid waste from SOCMI or petroleum refinery process units.

A. What are the impacts for SOCMI process units?

The methodology used to estimate impacts for the lower leak definitions for pumps and valves in the new 40 CFR part 60, subpart VVa is essentially the same as the methodology described in section VI.A of the preamble for the proposed amendments (71 FR 65311, November 7, 2006). There are, however, a few changes in the assumptions. We adjusted the estimates of baseline emissions and monitoring frequencies for new, modified, and reconstructed process units not subject to the HON, the MON, or the Ethylene NESHAP to better reflect baseline conditions.

In addition, we added emission reduction and cost impacts for the monitoring of connectors. The analysis completed for the proposed amendments to 40 CFR part 60, subpart VV was documented in a technical memorandum (EPA–HQ–OAR–2006–0699–0035). Based on the leak frequencies obtained from *Revised MACT Floor, Regulatory Alternatives, and Nationwide Impacts for Equipment Leaks at Chemical Manufacturing Facilities* (EPA–HQ–OAR–2003–0121–0004) at a leak definition of 500 ppm, we estimated that connectors would be monitored once every 4 years. SOCMI process units subject to the HON are already required to monitor connectors, so the baseline impacts for process units subject to these standards were equivalent to the impacts of the new standards. The methodology did not change for the analysis of the impacts for connectors subject to the new subpart VVa of 40 CFR part 60.

Based on the assumptions described above, we estimate that the new standards will reduce emissions of VOC about 325 tons/yr from the baseline. The estimated increase in annual cost, including annualized initial costs, is about $821,000. The cost-effectiveness is about $1,700 per ton of VOC removed. The estimated nationwide 5-year incremental emissions reductions and cost impacts for each of the new standards are summarized in Table 2 of this preamble.

TABLE 2.—NATIONAL EMISSION REDUCTIONS AND COST IMPACTS FOR SOCMI UNITS SUBJECT TO STANDARDS UNDER SUBPART VVA OF 40 CFR PART 60

[5th Year After Proposal]

Requirement	Annual emission reductions, tons/yr	Total initial cost, $million	Annualized cost, $thousand/yr	Recovery credit,[1] $thousand/yr	Total annual cost, $thousand/yr	Cost-effectiveness, $/ton
Lower leak definition for valves and pumps	94	0.15	41	77	−36	−380
Monitor connectors	230	3.1	780	190	590	2,500
Total	325	3.25	821	270	554	1,700

[1]Value of recovered product is $818/ton.

B. What are the impacts for petroleum refining process units?

The methodology used to estimate impacts for the new 40 CFR part 60, subpart GGGa is essentially the same as the methodology described in section VI.B of the preamble for the proposed amendments (71 FR 65311). There are, however, a few changes in the assumptions. For example, we originally assumed that the leak definitions in the Refinery NESHAP for valves and pumps on new sources since July 14, 1994, are equivalent to the leak definitions in 40 CFR part 60, subparts VVa and GGGa. However, the leak definitions in subparts VVa and GGGa are, in fact, more stringent than the Refinery NESHAP (proposed amendments at 72 FR 50716, September 4, 2007, did not include any changes to the equipment leak standards). Therefore, process units subject to both standards will comply with the leak definitions in subpart GGGa, so we revised the analysis of the impacts for the promulgated amendments to include the impacts for sources subject to both the Refinery NESHAP and subpart GGGa. We also adjusted the estimates of baseline emissions and monitoring frequencies for process units not subject to a consent decree. The revised impacts analysis is described in detail in Docket ID No. EPA–HQ–OAR–2006–0699.

We estimate that the new standards will reduce emissions of VOC about 13 tons/yr from the baseline. The estimated increase in annual cost, including annualized initial costs, is about $26,000. The cost-effectiveness is about $1,600 per ton of VOC removed. The estimated nationwide 5-year incremental emissions reductions and cost impacts for the new standards are summarized in Table 3 of this preamble.

TABLE 3.—NATIONAL EMISSION REDUCTIONS AND COST IMPACTS FOR PETROLEUM REFINERY UNITS SUBJECT TO STANDARDS UNDER SUBPART GGGA OF 40 CFR PART 60

[5th Year After Proposal]

Requirement	Annual emission reductions, tons/yr	Total initial cost, $thousand	Total annual cost, $thousand/yr	Recovery credit,[1] $thousand/yr	Total annual cost, $thousand/yr	Cost-effectiveness, $/ton
Lower leak definition for valves and pumps	13	24	26	7	19	1,600

[1]Value of recovered product is $545/ton.

C. What are the economic impacts?

An economic impact analysis was performed to compare the control costs associated with producing a product at petroleum refineries and various types of SOCMI facilities to the average value of shipments from such facilities. Since we are unable to associate projected control costs with specific facilities, we examined two polar cases for each industry, (1) a worst-case and (2) a best-case scenario. For the SOCMI, the polar cases are: (1) No more than eight complex process units located at a single facility and (2) no more than one process unit per facility. For petroleum refineries, the polar cases are: (1) All of the affected process units associated with one facility in the industry and (2) no more than one affected process unit at any given facility. In all cases, the magnitude of the costs is quite small. The only scenario for which the control costs reach 0.3 percent of the facility value of shipments is if an average ethyl alcohol manufacturing facility (in terms of value of shipments) experienced the worst case scenario of 8 complex processing units requiring control. Therefore, while the distribution of costs to small entities is unknown, no significant impact is expected for facilities of any size. The impact of the regulation on prices and profitability depends on the extent that the costs of control are passed on in the form of higher prices or absorbed by the facility. Because the costs are so small, any price increases or loss of profit would be quite small. No significant impact is expected as a result of the final amendments or the new standards of performance for equipment leaks of VOC for the petroleum refining industry and SOCMI.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a ''significant regulatory action'' because it may raise novel legal or policy issues. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Order 12866, and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act

The final amendments to the standards of performance for SOCMI and petroleum refineries (40 CFR part 60, subparts VV and GGG) do not impose any new information collection burden. The final amendments to these existing rules contain only clarifications, burden reducing provisions, and new compliance options. OMB has previously approved the information collection requirements contained in the existing regulations under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.*, and has assigned OMB control number 2060–0443, EPA ICR number 1854.04, to the ICR for subpart VV and OMB control number 2060–0067, EPA ICR number 0983.08, to the ICR for subpart GGG. A copy of the OMB-approved ICR may be obtained from Susan Auby, Collection Strategies Division, Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW., Washington, DC 20460 or by calling (202) 566–1672.

The information collection requirements in these new final standards (40 CFR part 60, subparts VVa and GGGa) have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* The information collection requirements are not enforceable until OMB approves them.

The information to be collected for the new standards are based on recordkeeping and reporting requirements in the NSPS General Provisions in 40 CFR part 60, subpart A, which are mandatory for all operators subject to NSPS. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to EPA policies set forth in 40 CFR part 2, subpart B.

Facilities subject to 40 CFR part 60, subpart VVa are required to comply with the same monitoring, recordkeeping, and reporting requirements for equipment leaks as required by 40 CFR part 60, subpart VV, along with certain additional requirements. The new recordkeeping provisions in subpart VVa require general identifying information for each monitoring activity required by the rule and specific information needed to demonstrate compliance with the new monitoring provisions for connectors and pumps in light liquid service (weekly visual inspections for indications of dripping liquids). Records are also required to demonstrate compliance with the QA/QC requirement for a calibration drift assessment at the end of each day and comparison of the results of the assessment with the most recent calibration value. A new, reconstructed, or modified affected facility subject to 40 CFR part 60, subpart VVa or GGGa must submit a notification of compliance status report and include information about leaking connectors in semi-annual compliance reports. Affected facilities subject to subpart GGGa are required to comply with the monitoring, recordkeeping, and reporting requirements in subpart VVa except for the monitoring requirements applicable to connectors (and the associated recordkeeping/reporting requirements).

The annual average burden for the information collection requirements in 40 CFR part 60, subpart VVa is estimated at 7,194 labor-hours per year, with a total annual cost of $527,104 per year. The hour burden is based on an estimated 29 hours per response on a semi-annual basis by 76 respondents. Total capital/startup costs associated with the monitoring equipment over the 3-year period of the ICR are estimated at $4,200. The operation of the monitors is included in the monitoring costs, and maintenance costs on these units are incidental; therefore, no maintenance or operation costs are incurred.

The annual average burden for the information collection requirements in 40 CFR part 60, subpart GGGa is estimated at 4,216 labor-hours per year, with a total annual cost of $330,353 per year. The hour burden is based on an estimated 70 hours per response on a semi-annual basis by 20 respondents. No capital/startup costs or operation and maintenance costs are associated with the information collection requirements.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. When this ICR is approved by OMB, the Agency will publish a technical amendment for the approved information collection requirements contained in the new standards.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedures Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of the final amendments and new standards on small entities, small entity is defined as: (1) A small business according to Small Business Administration size standards by the North American Industry Classification System (NAICS) category of the owning entity; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. For the SOCMI, a small business ranges from less than 500 employees to less than 1,000 employees, depending on the NAICS code. For petroleum refiners, a small business has no more than 1,500 employees and a crude oil distillation capacity of no more than 125,000 barrels per calendar day.

After considering the economic impacts of these final amendments on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. We have determined that no facilities subject to the final amendments to the standards of performance for the SOCMI (40 CFR part 60, subpart VV) and petroleum refineries (40 CFR part 60, subpart GGG), including small businesses, will incur any adverse impacts because the final amendments do not create any new requirements or burdens. The final amendments include only clarifications, burden-reducing provisions, and new compliance options. We have determined that no facilities, large or small, subject to the new standards of performance for the SOCMI (40 CFR part 60, subpart VVa) or petroleum refineries (40 CFR part 60, subpart GGGa) will incur any economic impact greater than 0.3 percent of their revenues. For more information on the results of the analysis of small entity impacts, please refer to the economic impact analysis for the final amendments and new standards in Docket ID No. EPA–HQ–OAR–2006–0699.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act (UMRA) of 1995, Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures by State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this final action does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. As discussed earlier in this preamble, no costs are associated with the final amendments, which contain only clarifications, burden-reducing provisions, and new compliance options. For the new standards, the estimated annual expenditures for the private sector in the fifth year after proposal are $821,000 for SOCMI and $26,000 for petroleum refineries. Thus, the final amendments and the new standards are not subject to the requirements of sections 202 and 205 of the UMRA.

In addition, EPA has determined that the final action contains no regulatory requirements that might significantly or uniquely affect small governments. The final action contains no requirements that apply to such governments, imposes no obligations upon them, and will not result in expenditures by them of $100 million or more in any 1 year or any disproportionate impacts on them. Therefore, the final action is not subject to the requirements of section 203 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by state and local officials in the development of

regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

The final action does not have federalism implications. The final amendments and the new standards will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. None of the affected facilities are owned or operated by State governments. Thus, Executive Order 13132 does not apply to this final action.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' The final action does not have tribal implications, as specified in Executive Order 13175. The final amendments and the new standards will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this final action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to any rule that: (1) Is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This final action is not subject to Executive Order 13045 because the final amendments and the new standards are based on technology performance and not on health or safety risks.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This final action is not a ''significant energy action'' as defined in Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, we have concluded that this final action is not likely to have any adverse energy effects. The final action will not have any significant or adverse energy impacts because no additional pollution controls or other equipment that consume energy are required by the final amendments or new standards.

I. National Technology Transfer and Advancement Act

As noted in the proposal, section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Public Law No. 104–113, 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable VCS.

This rulemaking involves technical standards. The EPA cites the following methods: EPA Method 2, 2A, 2C, 2D, 18, 21, and 22 of 40 CFR part 60, appendix A.

In addition, the EPA cites the following ASTM methods that are also VCS: ASTM E260–73, E260–91, E260–96 (reapproved 2006), E168–67, E168–77, E168–92, E169–63, E169–77, and E169–93 when determining if a piece of equipment is in VOC service; ASTM D2879–83, D2879–96, and D2879–97 (reapproved 2007) when determining if a piece of equipment is in light liquid service, and ASTM D2504–67, D2504–77, D2504–88 (reapproved 1993), D2382–76, D2382–88, and D4809–95 when determining the maximum permitted velocity for air-assisted flares; ASTM E260–73, E260–91, E260–96, E168–67, E168–77, E168–92, E169–63, E169–77, and E169–93 when determining if a piece of equipment is in hydrogen service; and ASTM D86–78, D86–82, D86–90, D86–95, and D86–96 when determining if a piece of equipment is in light liquid service. These VCS will be incorporated by reference into § 60.17.

Consistent with the NTTAA, EPA conducted searches to identify VCS in addition to these EPA methods. No applicable VCS were identified for EPA Methods 2A, 2D, 21, and 22. The search and review results are in the docket for this rule.

The search identified one VCS as an acceptable alternative to an EPA Method. The standard ASTM D6420–99 (2004), ''Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry,'' is cited in this rule as an alternative to EPA Method 18 for measuring gaseous organic HAP.

Similar to EPA's performance-based Method 18, ASTM D6420–99 is also a performance-based method for measurement of gaseous organic compounds. However, ASTM D6420–99 was written to support the specific use of highly portable and automated gas chromatography (GC)/mass spectrometry (MS). While offering advantages over the traditional EPA Method 18, the ASTM method does allow some less stringent criteria for accepting GC/MS results than required by EPA Method 18. Therefore, ASTM D6420–99 is a suitable alternative to EPA Method 18 only where:

(1) The target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and

(2) The target concentration is between 150 parts per billion by volume and 100 ppmv.

For target compound(s) not listed in Section 1.1 of ASTM D6420–99, but potentially detected by mass spectrometry, the regulation specifies that the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble. For target

compound(s) not listed in Section 1.1 of ASTM D6420–99, and not amenable to detection by mass spectrometry, ASTM D6420–99 does not apply.

As a result, EPA will cite ASTM D6420–99 in this rule. The EPA will also cite EPA Method 18 as a GC option in addition to ASTM D6420–99. This will allow the continued use of GC configurations other than GC/MS.

The search for emissions measurement procedures identified four other VCS. The EPA determined that these four standards identified for measuring emissions of the HAP or surrogates subject to emission standards in this rule were impractical alternatives to EPA test methods for the purposes of this rule. Therefore, EPA does not intend to adopt these standards for this purpose. The reasons for the determinations for the four methods are discussed in the docket to this rule.

A source may apply to EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures. Potential standards are reviewed to determine if they meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering, and policy equivalence to procedures in EPA reference methods.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final action will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations. The final amendments to the standards of performance for SOCMI (40 CFR part 60, subpart VV) and petroleum refineries (40 CFR part 60, subpart GGG) are comprised of clarifications, burden-reducing provisions, and new compliance options that do not affect the current level of control at facilities subject these rules. The new standards of performance for SOCMI (40 CFR part 60, subpart VVa) and petroleum refineries (40 CFR part 60, subpart GGGa) will increase the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The new subparts will increase the stringency of the standards of performance by reducing the leak definitions for certain pumps and valves, and subpart VVa will increase the stringency further by requiring the monitoring of certain connectors.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801, *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of Congress and to the Comptroller General of the United States. EPA will submit a report containing this final action and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of the final action in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This final rule is effective on November 16, 2007.

List of Subjects

40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

40 CFR Part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Intergovernmental relations.

Dated: October 31, 2007.

Stephen L. Johnson,

Administrator.

■ For the reasons cited in the preamble, title 40, chapter I, parts 60 and 63 of the Code of Federal Regulations are amended as follows:

PART 60—[AMENDED]

■ 1. The authority citation for part 60 continues to read as follows:

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

Subpart A—[Amended]

■ 2. Section 60.17 is amended by revising paragraphs (a)(7), (35), (36), (41), (70), (88), (89), and (90) to read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(a) * * *

(7) ASTM D86–78, 82, 90, 93, 95, 96, Distillation of Petroleum Products, IBR approved for §§ 60.562–2(d), 60.593(d), 60.593a(d), and 60.633(h).

* * * * *

(35) ASTM D2382–76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§ 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(e)(4), 60.664(e)(4), and 60.704(d)(4).

(36) ASTM D2504–67, 77, 88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§ 60.485(g)(5) and 60.485a(g)(5).

* * * * *

(41) ASTM D2879–83, 96, 97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§ 60.111b(f)(3), 60.116b(e)(3)(ii), 60.116b(f)(2)(i), 60.485(e)(1), and 60.485a(e)(1).

* * * * *

(70) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for §§ 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(d)(4), 60.664(e)(4), and 60.704(d)(4).

* * * * *

(88) ASTM E168–67, 77, 92, General Techniques of Infrared Quantitative Analysis, IBR approved for §§ 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).

(89) ASTM E169–63, 77, 93, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§ 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).

(90) ASTM E260–73, 91, 96, General Gas Chromatography Procedures, IBR approved for §§ 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).

* * * * *

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

■ 3. The heading for Subpart VV is revised as set out above.

■ 4. Section 60.480 is amended by revising paragraphs (b), (d)(2) through (d)(5), and (e) to read as follows:

§ 60.480 Applicability and designation of affected facility.

* * * * *

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 5, 1981, and on or before November 7, 2006, shall be subject to the requirements of this subpart.

* * * * *

(d) * * *

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in § 60.489 is exempt from §§ 60.482–1 through 60.482–10.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§ 60.482–1 through 60.482–10.

(4) Any affected facility that produces beverage alcohol is exempt from §§ 60.482–1 through 60.482–10.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§ 60.482–1 through 60.482–10.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§ 60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of § 60.485(d), (e), and (f) and § 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners and operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Subpart VVa.* Owners or operators may choose to comply with the provisions of subpart VVa of this part 60 to satisfy the requirements of this subpart VV for an affected facility.

■ 5. Section 60.481 is amended by:

■ a. In the definition of ''Capital expenditure'' remove the table heading in paragraph (a)(3) and add in its place the heading ''Table for Determining Applicable Value for B'';

■ b. Revising the definitions for the terms ''Connector,'' ''First attempt at repair,'' ''Hard piping,'' ''Process unit,'' ''Process unit shutdown,'' and ''Repaired''; and

■ c. Adding, in alphabetical order, new definitions for the terms ''Closed-loop system,'' ''Closed-purge system,'' ''Storage vessel,'' and ''Transfer rack'' to read as follows:

§ 60.481 Definitions.

* * * * *

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

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

* * * * *

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this subpart.

* * * * *

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

* * * * *

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2300, Fairfield, NJ 07007–2300).

* * * * *

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

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 accomplished. The following are not considered process unit shutdowns:

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

(2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

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

* * * * *

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§ 60.482–2(b)(2)(ii) and (d)(6)(ii) and (iii), 60.482–3(f), and 60.482–10(f)(1)(ii), is re-monitored as specified in § 60.485(b) to verify that emissions from the equipment are below the applicable leak definition.

* * * * *

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges, or ships.

* * * * *

Transfer rack means the collection of loading arms and loading hoses, at a

single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

* * * * *

■ 6. Section 60.482–1 is amended by adding paragraphs (e), (f), and (g) to read as follows:

§ 60.482–1 Standards: General.

* * * * *

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hours (hr)/yr is excluded from the requirements of §§ 60.482–2 through 60.482–10 if it is identified as required in § 60.486(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps and valves at the frequency specified in the following table instead of monitoring as specified in §§ 60.482–2, 60.482–7, and 60.483–2:

Operating time (percent of hours during year)	Equivalent 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 quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) 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 at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

(i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.

(ii) When monitoring is conducted semiannually (*i.e.*, once every 2 quarters), monitoring events must be separated by at least 60 calendar days.

(iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.

(iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.

(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to subpart VVa of this part, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to subpart VVa of this part, the storage vessel is assigned to any process unit subject to this subpart. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

■ 7. Section 60.482–2 is amended by:

■ a. Revising paragraph (a);

■ b. Revising paragraph(b)(2);

■ c. Revising paragraph (c)(2);

■ d. Revising paragraphs (d) introductory text, (d)(1)(ii), (d)(4), (d)(5), and (d)(6); and

■ e. Revising paragraph (e) introductory text to read as follows:

§ 60.482–2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in § 60.485(b), except as provided in § 60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in § 60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in § 60.482–1(f).

(b) * * *

(2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event.

(i) Monitor the pump within 5 days as specified in § 60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping.

(c) * * *

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section are met.

(1) * * *

(ii) 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 § 60.482–10; or

* * * * *

(4)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section.

(A) Monitor the pump within 5 days as specified in § 60.485(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

(5)(i) Each sensor as described in paragraph (d)(3) of this section is checked daily or is equipped with an audible alarm.

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.

(6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.

(ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.

(iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

(e) Any pump that is designated, as described in § 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

* * * * *

■ 8. Section 60.482–3 is amended by revising paragraphs (a) and (j) to read as follows:

§ 60.482–3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in § 60.482–1(c) and paragraphs (h), (i), and (j) of this section.

* * * * *

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

■ 9. Section 60.482–5 is amended by revising paragraphs (a) and (b) to read as follows:

§ 60.482–5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in § 60.482–1(c) and paragraph (c) of this section.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section.

(1) Gases displaced during filling of the sample container are not required to be collected or captured.

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

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of § 60.482–10.

(iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(A) A waste management unit as defined in § 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

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

(C) 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;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of § 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of §§ 61.343 through 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR part 261.

* * * * *

■ 10. Section 60.482–6 is amended by revising paragraph (a)(1) to read as follows:

§ 60.482–6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 60.482–1(c) and paragraphs (d) and (e) of this section.

* * * * *

■ 11. Section 60.482–7 is amended by revising paragraphs (a) and (c)(1) to read as follows:

§ 60.482–7 Standards: Valves in gas/vapor service and in light liquid service.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in § 60.485(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1(c) and (f), and §§ 60.483–1 and 60.483–2.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1(c), and §§ 60.483–1 and 60.483–2.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be

monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the valves on the process unit are monitored in accordance with § 60.483–1 or § 60.483–2, count the new valve as leaking when calculating the percentage of valves leaking as described in § 60.483–2(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

* * * * *

(c)(1)(i) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into 2 or 3 subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

* * * * *

■ 12. Section 60.482–8 is amended by revising paragraphs (a)(2) and (d) to read as follows:

§ 60.482–8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) * * *

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

* * * * *

(d) First attempts at repair include, but are not limited to, the best practices described under §§ 60.482–2(c)(2) and 60.482–7(e).

■ 13. Section 60.482–9 is amended by revising paragraph (a) and adding paragraph (f) to read as follows:

§ 60.482–9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

* * * * *

(f) When delay of repair is allowed for a leaking pump or valve that remains in service, the pump or valve may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

■ 14. Section 60.483–1 is amended by revising paragraph (d) to read as follows:

§ 60.483–1 Alternative standards for valves—allowable percentage of valves leaking.

* * * * *

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in § 60.485(h).

■ 15. Section 60.483–2 is amended by revising paragraph (b)(5) and adding paragraph (b)(7) to read as follows:

§ 60.483–2 Alternative standards for valves—skip period leak detection and repair.

* * * * *

(b) * * *

(5) The percent of valves leaking shall be determined as described in § 60.485(h).

* * * * *

(7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with § 60.482–7(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

■ 16. Section 60.484 is amended by:

■ a. Removing the word ''equivalance'' and adding in its place the word ''equivalence'' in paragraph (a); and

■ b. Revising paragraph (b)(2) to read as follows:

§ 60.484 Equivalence of means of emission limitation.

* * * * *

(b) * * *

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

* * * * *

■ 17. Section 60.485 is amended by:

■ a. Revising paragraph (b) introductory text;

■ b. Revising paragraphs (e) introductory text, (e)(1) and (e)(2);

■ c. Revising paragraphs (g)(4) and (5); and

■ d. Adding paragraph (h) to read as follows:

§ 60.485 Test methods and procedures.

* * * * *

(b) The owner or operator shall determine compliance with the standards in §§ 60.482–1 through 60.482–10, 60.483, and 60.484 as follows:

* * * * *

(e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

* * * * *

(g) * * *

(4) The net heating value (H_T) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component ''i,'' ppm

H_i = Net heat of combustion of sample component ''i'' at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 parts per million by volume) and ASTM D2504–67, 77 or 88 (Reapproved 1993) (incorporated by reference—see § 60.17) shall be used to determine the concentration of sample component ''i.''

* * * * *

(h) The owner or operator shall determine compliance with § 60.483–1 or § 60.483–2 as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$$\%V_L = (V_L/V_T) * 100$$

Where:

$\%V_L$ = Percent leaking valves

V_L = Number of valves found leaking

V_T = The sum of the total number of valves monitored

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves

only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with § 60.482–7(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

■ 18. Section 60.486 is amended by revising paragraph (e)(2)(ii) and adding paragraph (e)(6) to read as follows:

§ 60.486 Recordkeeping requirements.

* * * * *

(e) * * *

(2) * * *

(ii) The designation of equipment as subject to the requirements of § 60.482–2(e), § 60.482–3(i), or § 60.482–7(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.

* * * * *

(6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with § 60.482–1(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

* * * * *

■ 19. Section 60.487 is amended by:

■ a. Revising paragraphs (c)(2)(i), (c)(2)(iii), and (c)(2)(iv) to read as follows:

§ 60.487 Reporting requirements.

* * * * *

(c) * * *

(2) * * *

(i) Number of valves for which leaks were detected as described in § 60.482–7(b) or § 60.483–2,

* * * * *

(iii) Number of pumps for which leaks were detected as described in § 60.482–2(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),

(iv) Number of pumps for which leaks were not repaired as required in § 60.482–2(c)(1) and (d)(6),

* * * * *

■ 20. Part 60 is amended by adding subpart VVa to read as follows:

Subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Sec.

§ 60.480a Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in § 60.481a) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in § 60.486a(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in § 60.489 is exempt from §§ 60.482–1a through 60.482–11a.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§ 60.482–1a through 60.482–11a.

(4) Any affected facility that produces beverage alcohol is exempt from §§ 60.482–1a through 60.482–11a.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§ 60.482–1a through 60.482–11a.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§ 60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §§ 60.485a(d), (e), and (f), and 60.486a(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Part 63, subpart H.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 63, subpart H, to satisfy the requirements of §§ 60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 63, subpart H, the requirements of § 60.485a(d), (e), and (f), and § 60.486a(i) and (j) still apply.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 63, subpart H must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2)(ii) do not apply to owners or operators of equipment subject to this

subpart complying with 40 CFR part 63, subpart H, except that provisions required to be met prior to implementing 40 CFR part 63 still apply. Owners and operators who choose to comply with 40 CFR part 63, subpart H, must comply with 40 CFR part 63, subpart A.

§ 60.481a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA) or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where:

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$A = Y \times (B \div 100)$;

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

TABLE FOR DETERMINING APPLICABLE VALUE FOR B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

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

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

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

Control device means an enclosed combustion device, vapor recovery system, or flare.

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.

Duct work 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.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

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.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, P.O. Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.485a(e).

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

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of § 60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in § 60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety 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.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

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 accomplished. The following are not considered process unit shutdowns:

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

(2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

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

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§ 60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in § 60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

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.

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.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in § 60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in § 60.2 Definitions.

§ 60.482–1a Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 60.482–1a through 60.482–10a or § 60.480a(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§ 60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.485a.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§ 60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, and 60.482–10a as provided in § 60.484a.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§ 60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, or 60.482–10a, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§ 60.482–2a through 60.482–10a if it is identified as required in § 60.486a(e)(5).

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§ 60.482–2a through 60.482–11a if it is identified as required in § 60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§ 60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent 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 quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) 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 at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

(i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.

(ii) When monitoring is conducted semiannually (*i.e.*, once every 2 quarters), monitoring events must be separated by at least 60 calendar days.

(iii) When monitoring is conducted in 3 quarters per year, monitoring events

must be separated by at least 90 calendar days.

(iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.

(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

§ 60.482–2a Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in § 60.485a(b), except as provided in § 60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in § 60.482–1a(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in § 60.482–1a(f).

(b)(1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.

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

(ii) 2,000 ppm or greater for all other pumps.

(2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.

(i) Monitor the pump within 5 days as specified in § 60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section are met.

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) 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 § 60.482–10a; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

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

(4)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section prior to the next required inspection.

(A) Monitor the pump within 5 days as specified in § 60.485a(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm.

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.

(6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.

(ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.

(iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

(e) Any pump that is designated, as described in § 60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing;

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in § 60.485a(c); and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of § 60.482–10a, it is exempt from

paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable 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 paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

§ 60.482–3a Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in § 60.482–1a(c) and paragraphs (h), (i), and (j) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; 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 complies with the requirements of § 60.482–10a; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm.

(2) 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.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of § 60.482–10a, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in § 60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in § 60.485a(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

§ 60.482–4a Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in § 60.485a(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in § 60.482–9a.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in § 60.485a(c).

(c) 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 through the pressure relief device to a control device as described in § 60.482–10a is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 60.482–9a.

§ 60.482–5a Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in § 60.482–1a(c) and paragraph (c) of this section.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section.

(1) Gases displaced during filling of the sample container are not required to be collected or captured.

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

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of § 60.482–10a.

(iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(A) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

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

(C) 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;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR 61.343 through 40 CFR 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR part 261.

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

§ 60.482–6a Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 60.482–1a(c) and paragraphs (d) and (e) of this section.

(2) 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.

(b) 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.

(c) 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 (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.

(e) Open-ended valves or lines containing materials which 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 paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ 60.482–7a Standards: Valves in gas/vapor service and in light liquid service.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in § 60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1a(c) and (f), and §§ 60.483–1a and 60.483–2a.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1a(c), and §§ 60.483–1a and 60.483–2a.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the existing valves in the process unit are monitored in accordance with § 60.483–1a or § 60.483–2a, count the new valve as leaking when calculating the percentage of valves leaking as described in § 60.483–2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

(b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(c)(1)(i) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in § 60.486a(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) of this section if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in § 60.485a(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section, and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in § 60.486a(f)(2), as a difficult-to-monitor valve is exempt

from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either:

(i) Becomes an affected facility through § 60.14 or § 60.15 and was constructed on or before January 5, 1981; or

(ii) Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482–8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in § 60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9a.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §§ 60.482–2a(c)(2) and 60.482–7a(e).

§ 60.482–9a Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves and connectors will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 60.482–10a.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

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

(e) 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, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

(f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

§ 60.482–10a Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of § 60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii) of this section:

(i) Conduct an initial inspection according to the procedures in § 60.485a(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in § 60.485a(b); and

(ii) Conduct annual inspections according to the procedures in § 60.485a(b).

(g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the

inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:

(1) 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 paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§ 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in § 60.486a(c).

(4) For each inspection conducted in accordance with § 60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

§ 60.482–11a Standards: Connectors in gas/vapor service and in light liquid service.

(a) The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, 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) Except as allowed in § 60.482–1a(c), § 60.482–10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in § 60.485a(b) and, as applicable, § 60.485a(c).

(2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.

(3) 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 section.

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

(ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.

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

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

(B) If the percent of 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 of leaking connectors within the total monitored connectors.

(C) If the percent of 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) 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 the following equation:

$\%C_L = C_L / C_t * 100$

Where:

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

C_L = Number of connectors measured at 500 ppm or greater, by the method specified in § 60.485a(b).

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

(d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.

(e) Any connector that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:

(1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and

(2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable 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 paragraph (d) of this section if a leak is detected.

(f) *Inaccessible, ceramic, or ceramic-lined connectors.* (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§ 63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:

(i) Buried;

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

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

(iv) 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;

(v) 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; or

(vi) 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.

(2) 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.

(g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

§ 60.483–1a Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in § 60.487a(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with § 60.482–7a(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in § 60.485a(b).

(2) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in § 60.485a(h).

§ 60.483–2a Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in § 60.487(d)a.

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in § 60.482–7a.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in § 60.482–7a but can again elect to use this section.

(5) The percent of valves leaking shall be determined as described in § 60.485a(h).

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

(7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with § 60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

§ 60.484a Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

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

(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.

(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the **Federal Register** and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the **Federal Register**.

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the CAA.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

§ 60.485a Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§ 60.482–1a through 60.482–11a, 60.483a, and 60.484a as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A–7 of this part. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm 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 ppm 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 ppm. 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.

(2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in § 60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

(c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§ 60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 of appendix A–7 of this part shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum

concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see § 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d)(1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

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

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 of appendix A–7 of this part shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$V_{max} = K_1 + K_2 H_T$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec).

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units).

K_2 = 0.7084 m^4/(MJ-sec) (metric units) = 0.087 ft^4/(Btu-sec) (English units).

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units).

C_i = Concentration of sample component ''i,'' ppm

H_i = net heat of combustion of sample component ''i'' at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole.

(5) Method 18 of appendix A–6 of this part or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference-see § 60.17) shall be used to determine the concentration of sample component ''i.''

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference-see § 60.17) shall be used to determine the net heat of combustion of component ''i'' if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D of appendix A–7 of this part, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

(h) The owner or operator shall determine compliance with § 60.483–1a or § 60.483–2a as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$\%V_L = (V_L / V_T) * 100$

Where:

$\%V_L$ = Percent leaking valves.

V_L = Number of valves found leaking.

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

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with § 60.482–7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

§ 60.486a Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a.

(i) Monitoring instrument identification.

(ii) Operator identification.

(iii) Equipment identification.

(iv) Date of monitoring.

(v) Instrument reading.

(b) When each leak is detected as specified in §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in § 60.482–7a(c) and no leak has been detected during those 2 months.

(3) The identification on a connector may be removed after it has been monitored as specified in § 60.482–11a(b)(3)(iv) and no leak has been detected during that monitoring.

(4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

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

(4) Maximum instrument reading measured by Method 21 of appendix A–7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.

(5) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

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

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in § 60.482–10a shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in § 60.482–10a(e), 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.

(4) Periods when the closed vent systems and control devices required in §§ 60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§ 60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a.

(e) The following information pertaining to all equipment subject to the requirements in §§ 60.482–1a to 60.482–11a shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§ 60.482–2a(e), 60.482–3a(i), and 60.482–7a(f).

(ii) The designation of equipment as subject to the requirements of § 60.482–2a(e), § 60.482–3a(i), or § 60.482–7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.

(3) A list of equipment identification numbers for pressure relief devices required to comply with § 60.482–4a.

(4)(i) The dates of each compliance test as required in §§ 60.482–2a(e), 60.482–3a(i), 60.482–4a, and 60.482–7a(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with § 60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

(7) The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.

(8) Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A–7 of this part and § 60.485a(b).

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A–7 of this part.

(v) Results of each calibration drift assessment required by § 60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).

(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

(9) The connector monitoring schedule for each process unit as specified in § 60.482–11a(b)(3)(v).

(10) Records of each release from a pressure relief device subject to § 60.482–4a.

(f) The following information pertaining to all valves subject to the requirements of § 60.482–7a(g) and (h), all pumps subject to the requirements of § 60.482–2a(g), and all connectors subject to the requirements of § 60.482–11a(e) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with § 60.483–2a:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§ 60.482–2a(d)(5) and 60.482–3a(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in § 60.480a(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded

in a log that is kept in a readily accessible location.

(k) The provisions of § 60.7(b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487a Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of § 60.482–7a, excluding those valves designated for no detectable emissions under the provisions of § 60.482–7a(f).

(3) Number of pumps subject to the requirements of § 60.482–2a, excluding those pumps designated for no detectable emissions under the provisions of § 60.482–2a(e) and those pumps complying with § 60.482–2a(f).

(4) Number of compressors subject to the requirements of § 60.482–3a, excluding those compressors designated for no detectable emissions under the provisions of § 60.482–3a(i) and those compressors complying with § 60.482–3a(h).

(5) Number of connectors subject to the requirements of § 60.482–11a.

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in § 60.486a:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in § 60.482–7a(b) or § 60.483–2a,

(ii) Number of valves for which leaks were not repaired as required in § 60.482–7a(d)(1),

(iii) Number of pumps for which leaks were detected as described in § 60.482–2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),

(iv) Number of pumps for which leaks were not repaired as required in § 60.482–2a(c)(1) and (d)(6),

(v) Number of compressors for which leaks were detected as described in § 60.482–3a(f),

(vi) Number of compressors for which leaks were not repaired as required in § 60.482–3a(g)(1),

(vii) Number of connectors for which leaks were detected as described in § 60.482–11a(b)

(viii) Number of connectors for which leaks were not repaired as required in § 60.482–11a(d), and

(xi) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§ 60.483–1a or 60.483–2a shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with § 60.8 of the General Provisions. The provisions of § 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

§ 60.488a Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital costs that would be required to construct a comparable new facility'' under § 60.15: Pump seals, nuts and bolts, rupture disks, and packings.

(b) Under § 60.15, the ''fixed capital cost of new components'' includes the fixed capital cost of all depreciable components (except components specified in § 60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the ''Applicability and designation of affected facility'' section of the appropriate subpart.) For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489a List of chemicals produced by affected facilities.

Process units that produce, as intermediates or final products, chemicals listed in § 60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006.

Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

■ 21. The heading for Subpart GGG is revised as set out above.

■ 22. Section 60.590 is amended by revising paragraphs (b) and (d) to read as follows:

§ 60.590 Applicability and designation of affected facility.

* * * * *

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 4, 1983, and on or before November 7, 2006, is subject to the requirements of this subpart.

* * * * *

(d) Facilities subject to subpart VV, subpart VVa, or subpart KKK of this part are excluded from this subpart.

* * * * *

■ 23. Section 60.591 is amended by adding a definition of ''Asphalt'' in alphabetical order and revising the definition of ''Process unit'' to read as follows:

§ 60.591 Definitions.

* * * * *

Asphalt (also known as Bitumen) is a black or dark brown solid or semi-solid thermo-plastic material possessing waterproofing and adhesive properties. It is a complex combination of higher molecular weight organic compounds containing a relatively high proportion of hydrocarbons having carbon numbers greater than C25 with a high carbon to hydrogen ratio. It is essentially non-volatile at ambient temperatures with closed cup flash point of 445 °F (230 °C) or greater.

* * * * *

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

■ 24. Section 60.592 is amended by revising paragraph (b) to read as follows:

§ 60.592 Standards.

* * * * *

(b) For a given process unit, an owner or operator may elect to comply with the requirements of paragraphs (b)(1), (2), or (3) of this section as an alternative to the requirements in § 60.482–7.

(1) Comply with § 60.483–1.

(2) Comply with § 60.483–2.

(3) Comply with the Phase III provisions in 40 CFR 63.168, except an owner or operator may elect to follow the provisions in § 60.482–7(f) instead of 40 CFR 63.168 for any valve that is designated as being leakless.

* * * * *

■ 25. Section 60.593 is amended by:

■ a. Revising the first sentence of paragraph (b)(2);

■ b. Revising paragraphs (c) and (d); and

■ c. Adding paragraph (f) to read as follows:

§ 60.593 Exceptions.

* * * * *

(b) * * *

(2) Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. * * *

* * * * *

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482–3(a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482–3(a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

* * * * *

(f) Open-ended valves or lines containing asphalt as defined in § 60.591 are exempt from the requirements of § 60.482–6(a) through (c).

■ 26. Part 60 is amended by adding subpart GGGa to read as follows:

Subpart GGGa—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Sec.

§ 60.590a Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in petroleum refineries.

(2) A compressor is an affected facility.

(3) The group of all the equipment (defined in § 60.591a) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.591a) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities subject to subpart VV, subpart VVa, subpart GGG, or subpart KKK of this part are excluded from this subpart.

§ 60.591a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act, in subpart A of part 60, or in subpart VVa of this part, and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square mile area extending from the Brooks Range to the Arctic Ocean.

Asphalt (also known as Bitumen) is a black or dark brown solid or semi-solid thermo-plastic material possessing waterproofing and adhesive properties. It is a complex combination of higher molecular weight organic compounds containing a relatively high proportion of hydrocarbons having carbon numbers greater than C25 with a high carbon to hydrogen ratio. It is essentially non-volatile at ambient temperatures with closed cup flash point of 445 ° F (230 ° C) or greater.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.

In hydrogen service means that a compressor contains a process fluid that meets the conditions specified in § 60.593a(b).

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.593a(c).

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

§ 60.592a Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.482–1a to 60.482–10a as soon as practicable, but no later than 180 days after initial startup.

(b) For a given process unit, an owner or operator may elect to comply with the requirements of paragraphs (b)(1), (2), or (3) of this section as an alternative to the requirements in § 60.482–7a.

(1) Comply with § 60.483–1a.

(2) Comply with § 60.483–2a.

(3) Comply with the Phase III provisions in § 63.168, except an owner or operator may elect to follow the provisions in § 60.482–7a(f) instead of § 63.168 for any valve that is designated as being leakless.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 60.484a.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485a except as provided in § 60.593a.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486a and 60.487a.

§ 60.593a Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VVa of this part.

(b)(1) Compressors in hydrogen service are exempt from the requirements of § 60.592a if an owner or operator demonstrates that a compressor is in hydrogen service.

(2) Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E260–73, 91, or 96, E168–67, 77, or 92, or E169–63, 77, or 93 (incorporated by reference as specified in § 60.17) shall be used.

(3)(i) An owner or operator may use engineering judgment rather than procedures in paragraph (b)(2) of this section to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph (b)(2) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures in paragraph (b)(2).

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482–3a(a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482–3a(a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485a(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86–78, 82, 90, 93, 95, or 96 (incorporated by reference as specified in § 60.17).

(e) Pumps in light liquid service and valves in gas/vapor and light liquid service within a process unit that is located in the Alaskan North Slope are exempt from the requirements of §§ 60.482–2a and 60.482–7a.

(f) Open-ended valves or lines containing asphalt as defined in § 60.591a are exempt from the requirements of § 60.482–6a(a) through (c).

(g) Connectors in gas/vapor or light liquid service are exempt from the requirements in § 60.482–11a, provided the owner or operator complies with § 60.482–8a for all connectors, not just those in heavy liquid service.

PART 63—[AMENDED]

■ 27. The authority citation for part 63 continues to read as follows:

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

Subpart A—[Amended]

■ 28. Section 63.14 is amended by revising paragraph (b)(28) to read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(b) * * *

(28) ASTM D6420–99 (Reapproved 2004), Standards Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectometry, IBR approved for §§ 60.485(g)(5), 60.485a(g)(5), 63.772(a)(1)(ii), 63.2354(b)(3)(i), 63.2354(b)(3)(ii), 63.2354(b)(3)(ii)(A), and 63.2351(b)(3)(ii)(B).

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