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40 CFR Part 60

**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;
Proposed Rule**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[EPA-HQ-2006-0699; FRL-8239-9]

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: Proposed rule.

SUMMARY: Pursuant to section 111(b)(1)(B) of the Clean Air Act, the EPA has reviewed the emission standards for volatile organic compounds contained in the standards of performance for equipment leaks of volatile organic compounds in the synthetic organic chemicals manufacturing industry and equipment leaks of volatile organic compounds in petroleum refineries. This action proposes amendments to these standards based on this review. Specifically, we are proposing amendments to increase the stringency of the leak definitions for pumps and valves. We are also proposing several technical clarifications and corrections to existing provisions. The clarifications and corrections in the regulations would apply to all sources that are subject to rules that reference these regulations.

DATES: Comments. Comments on the proposed amendments must be received on or before January 8, 2007.

Public hearing. If anyone contacts EPA requesting to speak at a public hearing by November 27, 2006, a public hearing will be held on December 7, 2006.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2006-0699, by one of the following methods:

- *www.regulations.gov*: Follow the on-line instructions for submitting comments.
- *E-mail*: a-and-r-docket@epa.gov.
- *Fax*: (202) 566-1741.
- *Mail*: U.S. Postal Service, send comments to: Air and Radiation Docket (6102T), Docket No. EPA-HQ-OAR-

2006-0699, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St., NW., Washington, DC 20460.

- *Hand Delivery*: In person or by Courier, deliver comments to: Air and Radiation Docket (6102T), EPA West Building, Room B-102, 1301 Constitution Ave., NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2006-0699. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information

about EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: 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, *i.e.*, 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 B-102, 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.

Note: The EPA Docket Center suffered damage due to flooding during the last week of June 2006. The Docket Center is continuing to operate. However, during the cleanup, there will be temporary changes to Docket Center telephone numbers, addresses, and hours of operation for people who wish to make hand deliveries or visit the Public Reading Room to view documents. Consult EPA's **Federal Register** notice at 71 FR 38147 (July 5, 2006) or the EPA Web site at <http://www.epa.gov/epahome/dockets.htm> for current information on docket operations, locations, and telephone numbers. The Docket Center's mailing address for U.S. mail and the procedure for submitting comments to www.regulations.gov are not affected by the flooding and will remain the same.

FOR FURTHER INFORMATION CONTACT: Ms. Karen Rackley, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Coatings and Chemicals Group (E143-01), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number (919) 541-0634; fax number (919) 541-0246; e-mail address: rackley.karen@epa.gov.

SUPPLEMENTARY INFORMATION:

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

Category	NAICS* code	Examples of potentially regulated entities
Industry	32411 Primarily 325110, 325192, 325193, and 325199.	Petroleum refiners Synthetic organic chemicals manufacturing industry (SOCMI) units, e.g., producers of benzene, toluene, or any other chemical listed in 40 CFR 60.489.

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 and 40 CFR 60.590. If you have any questions regarding the applicability of the proposed amendments to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Submitting CBI. Do not submit information that you consider to be CBI electronically through www.regulations.gov or e-mail. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), U.S. EPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, Attention Docket ID EPA-HQ-OAR-2006-0699. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket.

If you have any questions about CBI or the procedures for claiming CBI, please consult the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of the proposed amendments is available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of the proposed amendments will be posted 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.

Public Hearing. If a public hearing is held, it will begin at 10 a.m. and will be held at EPA's campus located at 109 T.W. Alexander Drive, Research Triangle Park, NC, or at an alternate facility nearby. Persons interested in presenting oral testimony or inquiring as to whether a public hearing is to be held should contact Ms. Karen Rackley,

listed in the **FOR FURTHER INFORMATION CONTACT** section, at least 2 days in advance of the hearing.

Docket. The docket number for the proposed amendments to the standards of performance (40 CFR part 60, subpart VV and 40 CFR part 60, subpart GGG) is Docket ID No. OAR-2006-0699. Legacy dockets for the standards of performance include Docket ID Nos. A-79-32 and A-80-44.

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

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 - G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
 - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use
 - I. National Technology Transfer and Advancement Act

I. Background Information

A. What is the statutory authority for the proposed amendments?

New source performance standards (NSPS) implement Clean Air Act (CAA) section 111(b) 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 the EPA periodically to review and revise the standards of performance, as necessary, to reflect improvements in methods for reducing emissions.

B. What are the current equipment leak NSPS?

New source performance standards for equipment leaks of volatile organic compounds (VOC) have been developed for four source categories. Subpart VV to 40 CFR part 60 applies to SOCM process units. Subpart DDD to 40 CFR part 60, Standards of Performance for VOC Emissions from the Polymer Manufacturing Industry, applies to polypropylene, polyethylene, polystyrene, and poly (ethylene terephthalate) process units. Subpart GGG to 40 CFR part 60 applies to petroleum refining process units. Subpart KKK to 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 40 CFR part 60, subpart VV, and they specify source-category-specific definitions and exceptions to the requirements in 40 CFR part 60, subpart VV.

The NSPS for equipment leaks of VOC in the SOCM (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 synthetic organic chemicals manufacturing industry (SOCMI) that commenced construction, reconstruction, or modification after January 5, 1981. For the purpose of 40 CFR part 60, subpart VV, the SOCM 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 lines, 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 to 40 CFR part 60 or other equivalent monitoring techniques. Owners and operators must keep records that identify the equipment that are subject to the standards, identify equipment that are 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) for equipment leaks (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.

II. Summary of the Proposed Amendments

We are proposing a variety of amendments to 40 CFR part 60, subpart VV; most of these amendments would also apply to affected sources under other NSPS that cross-reference 40 CFR part 60, subpart VV (*i.e.*, 40 CFR part 60, subparts DDD, GGG, and KKK). Some of the amendments to 40 CFR part 60, subpart VV would change the leak detection and repair (LDAR) standards for pumps and valves in SOCOMI process units that commence construction, reconstruction, or modification as of today's date. We are also proposing amendments to 40 CFR part 60, subpart GGG that would make the same changes in the LDAR standards for pumps and valves in new petroleum refining process units, but these changes would not apply to affected sources under 40 CFR part 60, subparts DDD and KKK. Other amendments to 40 CFR part 60, subpart VV would add compliance options, add new provisions to ensure that existing standards achieve the expected emission reductions, clarify

ambiguous provisions, and correct miscellaneous errors. These proposed amendments to 40 CFR part 60, subpart VV would apply to affected sources under all other NSPS that cross-reference 40 CFR part 60, subpart VV (*i.e.*, 40 CFR part 60, subparts DDD, GGG, and KKK).

We are proposing amendments to the LDAR requirements for pumps and valves in SOCOMI process units that are subject to 40 CFR part 60, subpart VV and begin construction, reconstruction, or modification after November 7, 2006. These amendments would increase the stringency of the leak definition for pumps in light liquid service from 10,000 parts per million (ppm) to 2,000 ppm (5,000 ppm for pumps handling polymerizing monomers) and increase the stringency of the leak definition for valves in gas/vapor service or light liquid service from 10,000 ppm to 500 ppm. We are also proposing to amend subpart GGG to 40 CFR part 60 to specify that the above changes also apply to petroleum refining process units that begin construction, reconstruction, or modification after November 7, 2006. These proposed amendments reflect BDT for these sources based on the performance and cost of the LDAR programs.

We are proposing several amendments to subpart VV of 40 CFR part 60 which would add provisions designed to ensure that expected emissions reductions under the existing standards are being achieved. For example, these amendments would require an owner or operator to monitor the cap, plug, blind flange, or second valve on open-ended lines once per year. In addition, a calibration drift assessment would be required at the end of each day of monitoring, and records of monitoring instrument calibrations would be required. Finally, flow indicators or closure devices would be required on bypass lines that could divert flow away from control devices, consistent with requirements in the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks (HON) (40 CFR part 63, subpart H), the National Emission Standards for Equipment Leaks-Control Level 2 Standards (Generic MACT) (40 CFR part 63, subpart UU), and the CAR (40 CFR part 65, subpart F), hereafter referred to as "other equipment leak rules." All of these proposed changes would apply to affected sources under rules that cross-reference 40 CFR part 60, subpart VV (*i.e.*, 40 CFR part 60, subparts DDD, GGG, and KKK).

We are proposing an amendment to simplify the compliance requirements for pumps. When indications of liquids

dripping are observed during weekly inspections, 40 CFR part 60, subpart VV currently requires repair of the leak following the same procedures as if the leak were detected by monitoring. The proposed amendment would allow 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 or other equivalent monitoring techniques. This change would make the requirements in subpart VV consistent with the requirements in other equipment leak rules. This option would also be available for affected sources under subparts DDD, GGG, and KKK of 40 CFR part 40.

We are proposing an alternative compliance option consisting of less frequent monitoring for pumps and valves in process units that operate part-time during the year. This alternative would apply to currently required monthly, quarterly, and semiannual monitoring intervals; less frequent monitoring would not be allowed for monitoring that is currently required on an annual or less frequent basis. For example, pumps in a process that operates 5,250 hours per year (about 60 percent of full-time operation) could be monitored every other month rather than monthly. This alternative is consistent with options in other equipment leak rules, and it would be available for affected facilities at sources subject to other NSPS that cross-reference 40 CFR part 60, subpart VV.

Several proposed amendments are intended to clarify the requirements in 40 CFR part 60, subpart VV. These changes would make the rule language consistent with language that has been included in more recent equipment leak rules. These amendments include clarification of the definition of "process unit," requirements for new equipment added to a process unit, requirements for containers in closed-purge sampling systems, monitoring requirements for pumps for which repair has been delayed, and examples of actions considered to be first attempts at repair of pumps. We are also proposing a clarification of the definition of "process unit" in 40 CFR part 60, subpart GGG that is comparable to the proposed clarification of the definition in subpart VV.

Finally, the proposed amendments include a few technical corrections to fix references and other miscellaneous errors in both subpart VV and subpart GGG of 40 CFR part 60. The specific changes are detailed in sections III.A and III.B of this preamble.

III. Rationale for the Proposed Amendments

To determine the need for revisions to 40 CFR part 60, subpart VV, we reviewed requirements in other Federal equipment leak rules (e.g., recent National Emission Standards for Hazardous Air Pollutants (NESHAP) and the CAR), State rules, and recent consent decrees between many petroleum refiners and the United States government (representing EPA and various individual States, depending on the petroleum refining company). State rules that were reviewed included rule 1173 in California's South Coast Air Quality Management District, rule 8-18 in California's Bay Area Air Quality Management District, and requirements for highly reactive VOC in title 30, part 1, chapter 115, subchapter H of the Texas Administrative Code (TAC). An example of the equipment leak provisions included in the petroleum refinery consent decrees (from the consent decree for Sunoco, Inc.) can be found in Docket ID No. EPA-HQ-OAR-2006-0699. The consent decrees in their entirety are located at <http://cfpub.epa.gov/compliance/cases/>. As a result of this review, we developed amendments to improve the performance of the Equipment Leak NSPS that would require lower leak definitions for pumps in light liquid service and valves in gas/vapor service or light liquid service. We also considered a second option that would require monitoring of connectors in gas/vapor or light liquid service and define a leak for all connectors as an instrument reading of 500 ppm or greater. We have decided not to propose this second option at this time. See section IV of this preamble for a discussion of this option.

As a result of the review, we identified several other changes that would help ensure that the existing standards achieve the intended level of control. We also noted the need for a number of clarifications to make the requirements in the NSPS consistent with requirements in other equipment leak rules.

A. How did EPA determine the amended standards for equipment leaks in the SOCMIs (40 CFR part 60, subpart VV)?

1. Amended Work Practice Standards

Leak definition for pumps and valves. Typically, reducing the leak definition reduces emissions because leaks are identified and fixed when they are smaller. Leak definitions for pumps and valves in numerous other regulations and requirements are much lower than the 10,000 ppm leak definitions in 40

CFR part 60, subpart VV. For example, all NESHAP for SOCMIs sources (e.g., the HON, Generic MACT, and the CAR) specify leak definitions of 500 ppm for valves in gas/vapor service and light liquid service. The NESHAP also specify a leak definition of 1,000 ppm for pumps in light liquid service (except for pumps handling polymerizing monomers or in food/medical service, which have leak definitions of 5,000 ppm and 2,000 ppm, respectively). Although a pump is considered to be leaking at 1,000 ppm, repairs are required only if the instrument reading is at least 2,000 ppm.

Requirements in documents other than Federal NESHAP also have lower leak definitions than subpart VV. For example, most of the consent decrees for petroleum refineries specify leak definitions of 500 ppm for valves and 2,000 ppm for pumps. The consent decrees also require first attempts to repair valves when instrument readings exceed 100 ppm or 200 ppm. This effort has been only marginally successful because evidence to date shows such attempts are almost as likely to make emissions worse as to fix the valve. These results suggest that there are limits below which lowering the leak definition results in significantly diminished returns.

Finally, some State rules also have leak definitions that are lower than in 40 CFR part 60, subpart VV. For example, Air Quality Management Districts in California (e.g., BAAQMD rule 8-18) specify leak definitions as low as 100 ppm for valves and 500 ppm for pumps. Data on leak frequencies and other performance measures for facilities implementing LDAR programs with these very low leak definitions are not available.

Based on our experience with NESHAP and the consent decrees with petroleum refiners, we have concluded that BDT for pumps and valves includes lower leak definitions than in 40 CFR part 60, subpart VV as currently written. Specifically, these regulations and other requirements indicate BDT includes leak definitions of 500 ppm for valves and 2,000 ppm for pumps. Even lower leak definitions theoretically would result in lower emissions, but available evidence to date does not support selection of lower values. Our impacts analysis indicates that lowering the leak definitions to 500 ppm for valves and 2,000 ppm for pumps would reduce emissions from new SOCMIs sources by 230 Mg/yr in the fifth year after implementation of such requirements, and the cost would be \$310/Mg removed. This cost is considered to be reasonable. Therefore, we are proposing

to lower the leak definitions in 40 CFR part 60, subpart VV to 2,000 ppm for pumps and to 500 ppm for valves.

2. New Compliance Demonstration Requirements

As mentioned previously, the proposed amendments include provisions to ensure that intended emissions reductions are being achieved. The proposed clarifications summarized in this section would apply to all process units subject to 40 CFR part 60, subpart VV as well as units subject to subparts that reference subpart VV.

Open-ended lines. Section 60.482-6(a)(1) specifies that, except in certain situations, each open-ended valve or line shall be equipped with a cap, plug, blind flange, or a second valve. If installed properly, the control efficiency of these measures is assumed to be essentially 100 percent. Inspections conducted by enforcement agencies, however, have found that many of these components are leaking due to improper installation. In order to increase compliance with the original standards for open-ended lines and achieve the intended emission reductions, we are proposing a requirement to monitor each open-ended line once per year. An instrument reading of 500 ppm or greater would be considered a leak. The 500 ppm level was selected because this requirement is comparable to the "no detectable emissions" option for pumps, compressors, and valves. Repair of leaks would be required within 15 days after the leak is detected. Examples of repair attempts include tightening or replacing the cap, plug, blind flange, or second valve. Records of all monitoring results, each leak detected, and each repair attempted would be required.

Documentation of the total number of leaks and number for which repair was delayed would be required in semiannual reports.

Requirements for Pumps. Sections 60.482-2(b)(2) and (d)(6)(i) of subpart VV currently specify that a leak is detected if indications of liquids dripping from the pump seal are observed during weekly inspections. These leaks must be repaired just as leaks detected by instrument readings greater than the leak definition must be repaired. We have determined that this requirement is overly burdensome because not all liquids dripping are process fluids, and not all drips of process fluids would create emissions concentrations greater than the applicable leak definitions. To mitigate this burden, we are proposing to revise the weekly inspection requirements in a

manner similar to the requirements in the CAR.

The proposed amendments would require the owner or operator to either monitor the pump or designate visual indications of liquids dripping as a leak. If the owner or operator chooses to monitor the pump and the instrument reading is greater than or equal to the applicable leak definition, then a leak is detected, and it must be repaired following the same procedures as any other leak. If the instrument reading is less than the applicable leak definition, the indications of drips are not a leak, and no further action would be required. If the indications of liquids dripping are designated as a leak, then the owner or operator would have to repair the leak by eliminating the visual indications of liquids dripping. Eliminating visual indications of liquids dripping is less burdensome than meeting the definition of "repaired" because monitoring is not required to verify that the repair was successful. (Note that we are also proposing to revise the definition of the term "repaired" to be consistent with the definition in other equipment leak rules and to further clarify the definition. See section III.A.3 of this preamble.) Although 40 CFR part 60, subpart VV does not explicitly specify procedures to follow when indications of liquids dripping are observed between scheduled weekly inspections, the Agency has determined that owners and operators must follow the same requirements as when indications of liquids dripping are found during the weekly inspection.

The most obvious difference between the proposed amendments and the requirements in the CAR and Generic MACT is that the proposed amendments would explicitly require the owner or operator to designate visual indications of liquids dripping as a leak if monitoring is not conducted. However, this language is consistent with the intent of the CAR and Generic MACT. In the preamble to the proposed CAR (63 FR 57448, October 28, 1998), we explained that the new option to eliminate visual indications of liquids dripping constitutes leak repair for such situations. Another difference between the proposed amendments and the CAR is that the CAR essentially requires monitoring twice per month for pumps with continuing indications of liquids dripping (i.e., according to § 65.107(b)(4)(i), monitoring is required after the first weekly inspection each month). The proposed language in 40 CFR part 60, subpart VV would require monitoring after only the first weekly inspection that revealed indications of

liquids dripping. For subsequent months, routine monitoring in accordance with § 60.482–2(a)(1) is still required, but no monitoring would be required after any of the weekly inspections. Note, however, that if the pump is repaired (by either eliminating indications of liquids dripping or other means), then the clock resets and monitoring would again be required after the first weekly inspection during which indications of liquids dripping are observed.

Requirements for Closed-vent Systems. We are proposing to add a paragraph to the end of § 60.482–10 requiring owners and operators to ensure that there is no flow through bypass lines that could divert flow away from control devices. This requirement may be fulfilled by installing a flow indicator on each bypass line or securing the bypass line valve in the non-diverting position. Corresponding recordkeeping requirements are being proposed in 40 CFR 60.486(d)(6) and include either hourly records of whether the flow indicator was operating and whether a diversion into the bypass line was detected or records of monthly visual inspections and whether the seal is broken. We are also proposing that semiannual reports include records of all periods when the vent stream is diverted from the control device through a bypass line and all times when maintenance is performed in car-sealed valves, when the seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out. The changes to the monitoring, recordkeeping, and reporting requirements for bypass lines on closed-vent systems are being proposed to make 40 CFR part 60, subpart VV consistent with other equipment leak rules.

Testing Requirements. We are proposing two changes to the testing methods and procedures in 40 CFR 60.485 of subpart VV: addition of a daily calibration drift assessment and clarification of the calibration gases that must be used.

Section 60.485(b)(1) of subpart VV specifies that monitoring instruments must be calibrated before use each day. To ensure that the monitoring results are as accurate as possible, we are proposing to require a drift assessment at the end of each monitoring shift. The instrument would be checked with the same calibration gases as before use, and the percent difference from the initial calibration value would be calculated. If the drift assessment shows a negative drift of more than 10 percent, equipment monitored since the previous

calibration that showed readings between the leak definition and 20 percent of the leak definition must be re-monitored. For example, equipment with readings between 100 ppm and 500 ppm would have to be re-monitored if the leak definition is 500 ppm, and equipment with readings between 400 ppm and 2,000 ppm would have to be re-monitored if the leak definition is 2,000 ppm. We are specifically requesting comments on the proposed calibration drift requirement. In particular, we are requesting information on the environmental benefit of this assessment and any alternatives that should also be considered.

Section 60.485(b)(1)(ii) of subpart VV currently requires calibration with a mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. This is appropriate for the 10,000 ppm leak definitions as currently specified in the rule. However, because we are proposing lower leak definitions for pumps and valves, we are also proposing to revise the calibration gas requirements to match the requirements in other equipment leak rules that specify a variety of leak definition levels, such as the Generic MACT (40 CFR 63.1023(b)(4)) and the CAR (40 CFR 65.104(b)(4)).

The proposed amendments would require a mixture of methane or n-hexane and air at a concentration of no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. Alternatively, if the monitoring instrument allows for multiple calibration scales, then the lower scale should be calibrated with a calibration gas that is no higher than 2,000 ppm above the applicable leak definition, and the highest scale should be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale will be used during a day's monitoring, then only that scale will need to be calibrated.

Records of Instrument Calibrations. EPA Method 21 specifies instrument calibration requirements, and as discussed above, we are proposing additional calibration requirements in 40 CFR part 60, subpart VV. Neither the method nor subpart VV, however, require records of the calibrations. This information is needed by enforcement agencies to ensure compliance. Therefore, we are proposing to amend 40 CFR 60.486(e) of subpart VV to require records of calibrations. The proposed amendments would require an owner or operator to maintain records of the calibration dates, identification of the operator performing the calibration,

information about the cylinder gas(es) used, a description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value, and results of calibration drift assessments.

3. Technical Corrections and Clarifications

We are proposing several technical corrections to the current subpart VV of 40 CFR part 60 requirements in the proposed amendments. These amendments are being proposed to clarify the intent of the current requirements, correct inaccuracies, and correct oversights in previous versions that were promulgated. The proposed clarifications summarized in this section are consistent with other equipment leak rules and apply to all process units subject to subpart VV as well as units subject to subparts that reference subpart VV.

Pumps. We are proposing several clarifications to the standards for pumps in light liquid service (40 CFR 60.482–2). The current provisions are unclear regarding when a new pump on an affected process unit must be monitored for the first time, especially if the new pump is added to the process unit between monitoring cycles. We are proposing to revise 40 CFR 60.482–2(a)(1) to specify that a new pump must be monitored for the first time during the next regularly scheduled monitoring cycle for existing pumps.

We are also proposing to amend the delay of repair requirements specific to pumps. We are proposing to add 40 CFR 60.482–9(f) to clarify that an owner or operator may elect to discontinue monitoring for a pump for which repair has been delayed; if this option is chosen, the pump is presumed to be leaking until repaired. Alternatively, an owner or operator may choose to continue monitoring and consider the pump to be repaired if two consecutive monthly monitoring instrument readings are below the leak definition.

Finally, we are proposing several minor clarifications for pumps. We are proposing to add specific examples of practices that are considered to be options for first attempt at repair. The examples are consistent with other equipment leak rules. In a related amendment, we are proposing to amend 40 CFR 60.482–8(d) to include a reference to 40 CFR 60.482–2(c)(2) where first attempt at repair is discussed. We are also proposing to add 40 CFR 60.486(e)(6) to state explicitly that records of the weekly visual inspections must be kept.

Valves. Similar to pumps, the current provisions are unclear regarding when a

new valve on an affected process unit must be monitored for the first time. We are proposing to add 40 CFR 60.482–7(a)(2) to specify that a new valve must be monitored for the first time within 1 month after installation to ensure that the valve has been properly installed, except for valves that are designated for no detectable emissions, as unsafe to monitor, or as difficult to monitor. Subsequent monitoring for the new valve would begin during the next regularly scheduled monitoring cycle for that process unit. Unlike when a process unit first becomes subject to 40 CFR part 60, subpart VV, monitoring in two consecutive months before implementing less frequent monitoring would not be required. Similarly, we are proposing to add 40 CFR 60.483–2(b)(7) to indicate that monitoring is required within 1 month after installation of a new valve on a process unit being monitored according to the skip period frequency; subsequent monitoring for the new valve would begin during the quarter in which the existing valves on that process unit are monitored. The proposed amendments are consistent with the requirement to monitor valves monthly within a month after a process becomes subject to subpart VV, and they will ensure that a valve added to a process unit complying with 40 CFR 60.482–7(c) or 40 CFR 60.483–2 does not leak for up to 3 months or 1 year, respectively, before being monitored.

We are also proposing to amend the delay of repair requirements specific to valves. Similar to pumps, we are proposing to add 40 CFR 60.482–9(f) to clarify that an owner or operator may elect to discontinue monitoring for a valve for which repair has been delayed; if this option is chosen, the valve is presumed to be leaking until repaired. Alternatively, an owner or operator may choose to continue monitoring and consider the valve to be repaired once two consecutive monthly monitoring instrument readings are below the leak definition.

Sampling Connection Systems. For consistency with other equipment leak rules, we are proposing to add definitions of “closed-loop system” and “closed purge system” that are consistent with the definitions in other equipment leak rules. In addition, we are proposing to clarify that containers that are part of a closed-purge system must be covered when not being filled or emptied. Stating this requirement explicitly in the rule language is consistent with previous amendments to other equipment leak rules. Finally, we are proposing to rearrange the paragraphs in 40 CFR 60.482–5 for clarity.

Intermittent Process Operation. When process units operate on a variable, part-time basis during the year, there are issues about the monitoring requirements, particularly for batch processes. One issue is whether the monitoring frequency should be the same as for processes operating continuously, and another is how to monitor when the process does not operate during a normally scheduled monitoring period. For example, it is not clear what an owner or operator should do if a process unit is not operating during the first month of a quarter when valve monitoring would normally be required. To address these issues, we are proposing to add provisions like those in § 63.1036(c)(3)(iii) and (iv) of the Generic MACT for equipment leaks (40 CFR part 63, subpart UU). These provisions reduce the frequency of monitoring required for part time operation, and specify that the monitoring intervals may be adjusted to accommodate process operations, provided the monitoring is conducted at a “reasonable interval” after completion of the last monitoring campaign. For example, monitoring pumps in a process that operates about 70 percent of the days in a year may be done every other month rather than monthly. In addition, for a process that is not operating in the first month of a quarter, a “reasonable interval” is defined as within a period equal to 30 percent of the monitoring interval (*i.e.*, 30 percent of 3 months, if quarterly monitoring is otherwise required).

Definitions. The current rule does not clearly specify whether equipment in lines between storage tanks and process vessels are part of the process and therefore part of the affected source. We are proposing to revise the definition of “process unit” to clarify our intent that the pipes and ducts connecting storage tanks and transfer racks to process vessels are included as part of a process unit. We are also proposing to add definitions of “storage vessel” and “transfer rack” to further clarify the definition of “process unit.” All of the above definitions are similar to the definitions found in other equipment leak rules.

In a related amendment, we are proposing to add 40 CFR 60.485(b)(3) to allow flexibility in the monitoring of the equipment in a process unit. At some facilities, the storage tanks and transfer racks may be located far from the process vessels. Although the equipment on the pipes connecting the storage tanks and transfer racks to the process vessels are considered part of the same process unit, it may not make

geographic sense to monitor all the equipment at the same time. Instead, it may be more efficient to monitor all equipment on pipes or ducts near the tanks at a different time than the equipment on the process vessel. For example, a facility complying with quarterly monitoring for valves may choose to monitor the valves near the tanks in January and April and monitor the process vessel valves in February and May. Our intent in proposing a revision to the definition of "process unit" is not to remove any monitoring flexibility. As long as all the equipment that is part of one process unit is monitored at the applicable leak definition for that process unit and the overall monitoring frequency is maintained as specified by the applicable provisions (such as in the example provided above), the process unit would be considered to be in compliance with the monitoring requirements of 40 CFR part 60, subpart VV.

We are also proposing a revised definition of "repaired" to reflect our clarifications regarding how a leak is determined. The current definition does not explicitly explain how to verify that a repair has been successful. One interpretation of this language is that a successful repair is any action taken to address one of the three indications of a leak as stated in the definition of "repaired." However, this interpretation is not consistent with our intent or the language in other equipment leak rules. In addition, the current definition does not accurately reflect our proposed amendments to clarify the procedures when indications of liquids dripping from pumps are detected and to lower the leak definitions for new valves and pumps. Therefore, we are proposing to revise the definition of "repaired" to address these concerns. The proposed definition does not include a specific reference to a leak definition of 10,000 ppm and clarifies that, typically, equipment must be monitored after it is repaired to verify that it is no longer leaking. The only exception is that pumps for which visual indications of liquids dripping were observed during weekly inspections may be repaired by eliminating the visual indications of liquids dripping.

Recordkeeping. As specified above, 40 CFR 60.486 would be amended to correspond with particular proposed amendments for pumps in light liquid service, closed-vent systems with bypass lines, and calibration procedures. Specifically, we are proposing to amend 40 CFR 60.486 to require records of the weekly visual inspections for pumps and

documentation of the monitoring of bypass lines on closed-vent systems (either continuous records for a flow indicator or monthly visual inspections of the valve position).

We are also proposing to add a requirement to keep records of all instrument readings. The information to record would include identification of the monitoring instrument, operator, and equipment monitored; date and time of monitoring; and the instrument reading. This information would be useful as a means of verifying that the monitoring was performed, and it would be useful for assessing leak growth rates and leak distributions. Many facilities already record this information; therefore, we expect this requirement to impose minimal burden.

In addition, we are proposing to amend 40 CFR 60.486(c), which specifies the information to record when a leak is detected. Currently, 40 CFR 60.486(c)(4) requires only a note if an instrument reading above 10,000 ppm is detected after a repair attempt (i.e., a note that the repair attempt was unsuccessful). We are proposing to amend this paragraph to require a record of the maximum instrument reading once the leak is either repaired or determined to be nonrepairable. This change would take into account changes in the leak definitions, as well as the fact that the leak definitions may not be the same for all components. This language would make this requirement consistent with other equipment leak rules.

Reporting. As specified above, 40 CFR 60.487 would be amended to correspond with the proposed amendments for closed-vent systems with bypass lines and open-ended lines. Specifically, we are proposing to amend 40 CFR 60.487 to require semiannual reports to include records of all periods when the vent stream is diverted from the control device through a bypass line; records of all times when maintenance is performed in car-sealed valves, when the seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out; the number of open-ended lines for which leaks were detected; and the number of open-ended lines for which leaks were not repaired as required.

Miscellaneous Corrections. We are proposing the following miscellaneous technical corrections throughout 40 CFR part 60, subpart VV:

- Replacing "construction or modification" with "construction, reconstruction, or modification" throughout subpart VV;

- adding the word "Value" to the table in the definition of the term "capital expenditure";
- correcting the spelling of the word "judgment" in the definition of the term "hard piping";
- replacing "\$ 60.482(a), (b), (c), (d), (e), and (h)" with "paragraphs (a) through (e) and (h) of this section" in 40 CFR 60.482-3;
- correcting the spelling of the word "equivalence" in 40 CFR 60.484(a); and
- replacing "demonstrate that an equipment" with "demonstrate that a piece of equipment" in 40 CFR 60.485(e) to correct a grammatical error.

B. How did EPA determine the amended standards for equipment leaks in other NSPS?

Of the four subparts in part 60 that contain NSPS for equipment leak emissions, our current review examines only subparts VV and GGG. We will review and determine the need for source-specific amendments to subparts DDD and KKK of 40 CFR part 60 at a later date. Except for the changes to the LDAR standards for pumps and valves, all of the other proposed amendments to subpart VV would apply to sources subject to any rule that cross-references subpart VV. Other proposed changes to subpart GGG are discussed below.

1. LDAR for Pumps and Valves

The proposed amendments to the standards in 40 CFR part 60, subpart VV (i.e., the increased stringency of the leak definitions for pumps and valves) have been written in such a way that they apply only to SO2 affected sources that commence construction, reconstruction, or modification after today's publication of the proposed amendments. Based on the requirements in consent decrees and the Petroleum Refineries NESHAP (40 CFR part 63, subpart CC), however, it is clear that these proposed provisions are also technically viable and in widespread use for equipment leaks from petroleum refineries. Our impacts analysis (see section VI of this preamble) indicates that their implementation would reduce VOC emissions by 13 Mg/yr from new process units at refineries in the fifth year after implementing such requirements, and the cost to achieve these reductions would be \$3,400/Mg removed. The annual emissions reductions are relatively small because more than 76 percent of the refiners are currently complying with consent decrees that require compliance with comparable leak definitions. If these consent decrees expire at some point in the future, the potential emissions reductions would greatly increase. The

cost to achieve these reductions is considered reasonable. Therefore, we are proposing to add an exception in 40 CFR 60.593(f) of subpart GGG to specify that these changes to the standards in 40 CFR part 60, subpart VV would also apply to petroleum refining process units that commence construction, reconstruction, or modification after today's publication of proposed amendments.

2. Clarifications for Valves

Section 60.592(b) of 40 CFR part 60, subpart GGG currently allows a petroleum refiner to comply with the alternative standards for valves in 40 CFR 60.483-1 or 40 CFR 60.483-2 of subpart VV. We are proposing to allow compliance with the Phase III provisions in 40 CFR 63.168 of subpart H in the HON as an additional option. The Phase III provisions specify a leak definition of 500 ppm for valves, which we are proposing for new petroleum refining process units, as noted above. Many other Phase III requirements for monitoring and repairing leaking valves also are comparable to the requirements in subpart VV, but the Phase III provisions have slightly different "skip monitoring" options. Similarities include the requirement to conduct monitoring in accordance with EPA Method 21, to monitor monthly initially, and, if more than 2 percent leak when conducting "skip-monitoring," to make a first attempt at repair no later than 5 calendar days after a leak is detected and complete repair no later than 15 calendar days after a leak is detected, and the requirements for valves that are unsafe-to-monitor or difficult-to-monitor. The Phase III "skip monitoring" options allow an owner or operator to choose a monitoring frequency depending on the percentage of valves found to be leaking (e.g., if less than 1 percent of the valves in a process unit are leaking, the owner or operator may monitor once every two quarters; if less than 0.5 percent of the valves in a process unit are leaking, the owner or operator may monitor once every four quarters). Subpart VV allows an owner or operator to skip quarterly monitoring periods until annual monitoring is established as long as the number of leaking valves remains below 2 percent for a process unit.

Compliance with this option would achieve essentially the same emissions reductions as compliance with the proposed changes to 40 CFR part 60, subpart VV. Many petroleum refiners already have process units subject to 40 CFR part 63, subpart H, as well as other petroleum refining process units that are subject to equivalent requirements

under 40 CFR part 63, subpart CC. Allowing compliance with subpart H for petroleum refining process units that are subject only to the NSPS (i.e., no hazardous air pollutant (HAP) emissions) may reduce their burden if it reduces the number of different LDAR programs they must implement.

3. Clarifications for Open-Ended Lines

There is a potential safety concern with requiring a cap, blind flange, plug, or a second valve on an open-ended line containing asphalt. Plugs may become stuck and require removal with a torch. If a secondary valve is used, some residual asphalt may remain in the line between the primary and secondary valves following sampling. This residual asphalt can harden in the line, resulting in no flow when the secondary valve is opened to obtain the next sample. When the secondary valve is opened wider to encourage flow, the hardened asphalt may be forced out of the line, splattering hot asphalt on the sampling technicians. Because of this safety issue, and because asphalt has a lower volatility than other petroleum products, we are proposing to add an exemption to the open-ended line requirements for process lines containing asphalt. We are also proposing to add a definition of "asphalt" to subpart GGG to clarify which open-ended lines qualify for this exemption. Since asphalt is highly variable depending on the crude oil from which it is derived and the processing steps, we are specifically requesting comment on whether this definition adequately defines asphalt at petroleum refineries and whether the exemption should be limited to specific types of asphalt.

4. Clarification of Definitions

We are proposing to make changes to the definition of "process unit" in 40 CFR 60.591 of subpart GGG consistent with the proposed changes to this definition in 40 CFR part 60, subpart VV. These changes would specify that storage tanks and transfer racks are included as part of a process unit. As in subpart VV, these changes are needed to clarify that equipment in the lines between feed or product storage tanks and process units, between process units and transfer racks, or between product storage tanks and transfer racks are subject to the equipment leak standards. This change will make the definition of "process unit" in the NSPS consistent with the definition of "process unit" in the subpart CC to 40 CFR part 63.

5. Miscellaneous Corrections

We are proposing the following miscellaneous technical corrections throughout 40 CFR part 60, subpart GGG:

- Replacing "construction or modification" with "construction, reconstruction, or modification" in 40 CFR 60.590;
- changing "Each compressor is presumed not be in hydrogen service" to "Each compressor is presumed not to be in hydrogen service" in 40 CFR 60.593(b)(2);
- changing the reference to the section in 40 CFR part 60, subpart VV regarding compressors from §§ 60.482 through 60.482-3 in 40 CFR 60.593(c); and
- changing the reference to the section incorporating test methods by reference from §§ 60.18 through 60.17 in 40 CFR 60.593(d).

IV. Request for Comments

We welcome comments on all aspects of the proposed amendments. We are specifically requesting comments on two potential amendments that we have decided not to propose at this time. These potential amendments involve required repair attempts for valves and monitoring for connectors in gas/vapor service and light liquid service.

1. Drill and Tap Repair Attempts

The State of Texas recently promulgated a rule requiring "extraordinary efforts" to repair leaking valves in highly reactive volatile organic compound (VOC) service in eight counties before delay of repair is allowed (30 TAC 115.780 through 115.789). Similarly, recent consent decrees with petroleum refiners also require "extraordinary efforts" to fix valves that are leaking at concentrations of either 50,000 ppm or 10,000 ppm before delay of repair is allowed. In both the Texas rule and the consent decrees, drill and tap procedures are identified as an example of an extraordinary repair method. We considered amending 40 CFR part 60, subpart VV to include a similar requirement. However, available information indicates that sealant injection procedures such as drill and tap methods have advanced in recent years to the point that they are a viable on-line repair technique for many leaking valves. Vendors market these services for valves in a wide range of service, and they indicate success rates greater than 90 percent. Based on this information, we believe that drill and tap procedures have evolved past "extraordinary" methods and are more widely feasible. Therefore, we believe

that an amendment is not needed because subpart VV, as currently written, can be interpreted to require drill and tap repair attempts, at least for valves with leaks at or above the current leak definition of 10,000 ppm.

According to 40 CFR 60.482-9(a) of subpart VV, delay of repair is allowed if repair is technically infeasible without a process unit shutdown, and 40 CFR 60.482-9(c) of subpart VV allows delay of repair of valves if emissions associated with immediate repair would exceed continued emissions from the leak. Since drill and tap is technically feasible, and emissions associated with such a repair attempt would be negligible, one interpretation of these provisions is that drill and tap repair attempts are required before delay of repair is allowed.

We are soliciting comment on our interpretation of the delay of repair provisions in 40 CFR part 60, subpart VV and that an explicit requirement to use drill and tap procedures would be redundant. We are specifically interested in information regarding any types of valves or applications where drill and tap repair attempts are inherently unsafe or unlikely to be successful. In addition, given that we are proposing to lower the leak definition for valves from 10,000 ppm to 500 ppm, we are also interested in whether the interpretation that drill and tap is feasible should extend to valves with monitoring instrument readings in this range. Information on any other repair techniques that should be considered "extraordinary" and whether the rule should include a provision to require such techniques in certain situations is also of interest.

2. Leak Detection and Repair for Connectors

We have considered amending 40 CFR part 60, subpart VV (and possibly 40 CFR part 60, subpart GGG) to require monitoring of connectors in gas vapor service and light liquid service. Arguments in favor of such amendments are that NESHAP for chemical manufacturing sources already require connector monitoring for new processes that emit HAP, and our impacts analysis shows the cost of such monitoring would be reasonable, at least for SOCMI processes. Furthermore, the potential emission reductions from connector LDAR are greater than the potential reductions for the proposed amendments to the LDAR for pumps and valves. However, because of uncertainties regarding the leak frequencies and emission factors, we have decided not to propose LDAR

requirements for connectors at this time. We are soliciting comments on this decision and the underlying data and assumptions; these data and the accompanying analyses can be found in Docket ID No. EPA-HQ-OAR-2006-0699. Based on information provided by commenters, we may decide to propose connector LDAR in the future.

Many of the SOCMI processes listed in 40 CFR 60.489 of subpart VV and subject to subpart VV will also be subject to the HON, the NESHAP for Miscellaneous Organic Chemical Manufacturing (MON) (40 CFR part 63, subpart FFFF), or the NESHAP for Source Categories: Generic Maximum Achievable Control Technology Standards (Ethylene NESHAP) (40 CFR part 63, subpart YY). All of these NESHAP require monitoring of connectors at new sources, and the leak definition in each rule is 500 ppm. About 62 percent of the SOCMI chemicals are chemicals that are also listed in Table 1 to subpart F of the HON, 8 percent are ethylene or propylene, and the remainder are materials meeting the criteria listed in 40 CFR 63.2435 of the MON. Only three types of processes would not be subject to one of these NESHAP: (1) Processes at area sources for HAP emissions; (2) processes that emit VOC, but no HAP; and (3) processes making MON materials that are not part of a new affected source under the MON. Of the existing SOCMI process units, we estimated that 15 percent of them are at area sources based on information in the 2002 National Emission Inventory database; see Docket ID No. EPA-HQ-OAR-2006-0699 for details regarding how this estimate was developed. Except for a small percentage of the processes making MON materials, we assumed that all of the processes use or generate HAP and, thus, would be subject to the NESHAP if other applicability requirements are met. In the absence of process-specific emissions information, we assumed that 20 percent of the processes making MON materials would emit VOC but no HAP. A new affected source under subpart VV would be part of a new affected source under the MON only if it were part of a greenfield facility or it was a dedicated process unit that by itself has the potential to emit HAP at levels above one of the major source thresholds (*i.e.*, 10 tons per year (tpy) of one HAP or 25 tpy of a combination of HAP). Due to the prevalence of batch operations for specialty chemical manufacturing, we anticipate that most new process units that make MON materials will be part of existing sources

under the MON. Therefore, we assumed that only 20 percent of the process units making MON materials would be part of a new affected source under the MON. Overall, we expect a majority of process units that become affected sources under subpart VV in the next 5 years will be subject to connector LDAR under a NESHAP. We are unaware of any technological differences that would preclude connector monitoring for the other SOCMI process units.

Petroleum refining process units, on the other hand, are not subject to connector monitoring under any NESHAP. The preamble to the final rule (40 CFR part 63, subpart CC, 60 FR 43244, August 18, 1995) states that connector monitoring was not required because of uncertainty in the emission and cost estimates. However, Texas requires monitoring of connectors in highly reactive VOC service in certain counties (see 30 TAC 115.352 and 115.781), and the leak definition is 500 ppm. Several Air Districts in California (Bay Area, Ventura County, South Coast, and San Joaquin Valley) also require connector monitoring, and the applicable leak definitions range from 100 ppm to 10,000 ppm. Although we expect few new petroleum refining process units will be subject to connector LDAR under other rules, we are unaware of any technological limitations that would preclude an LDAR requirement.

To estimate the impacts of LDAR for connectors, we estimated the number of affected processes over the next 5 years, represented these process units using model processes that were developed for NESHAP impacts analyses, estimated average uncontrolled and controlled emission rates per connector, and estimated the various monitoring and repair costs. Details of the analysis are presented in Docket ID No. EPA-HQ-OAR-2006-0699. The results show an LDAR program with a leak definition of 500 ppm would reduce emissions from connectors by about 250 megagrams per year (Mg/yr) and 83 Mg/yr for SOCMI and petroleum refining process units, respectively. In addition, the average LDAR cost-effectiveness, without considering recovery credits, is estimated to be about \$2,500/Mg of VOC controlled for SOCMI process units and \$12,000/Mg of VOC controlled for petroleum refining process units. Two factors account for most of the difference in the costs. First, although implementing LDAR would reduce emissions from connectors by nearly 50 percent in both cases, the estimated controlled and uncontrolled emission factors are about three times higher for SOCMI units than for petroleum

refining process units. This occurs even though the leak frequencies were estimated to be lower for SOCOMI units. The second reason the costs for SOCOMI units are lower is that the lower leak frequency means the SOCOMI units could be monitored every 4 years while connectors in petroleum refining process units would have to be monitored annually (assuming the LDAR program includes skip monitoring as in other rules like the HON and Generic MACT). Based on this analysis, the costs of connector LDAR for SOCOMI units are considered to be reasonable, but the costs for petroleum refining process units are unreasonable.

Given the information presented above, we considered amending 40 CFR part 60, subpart VV to require connector LDAR for SOCOMI units and exempt affected facilities subject to other rules that cross-reference subpart VV. However, we have not yet proposed such amendments because we have reservations about some of the data and assumptions used in the impacts analysis. We are requesting comments and data to either bolster support for the existing analysis or provide rationale for changes to it. One of our concerns involves the emission factors for uncontrolled and controlled connectors in SOCOMI units. The uncontrolled factor was derived from initial leak fraction data (for a variety of chemical and polymer manufacturing processes) that were provided by industry in comments on the proposed MON (Docket Number A-96-04, Docket Item IV-D-123). Since this initial leak fraction was less than 0.5 percent (well below the performance level of 2 percent in other rules), we assumed the final leak fraction after implementing LDAR would not be any lower. We also assumed that after repair, the leak fraction would not return to this level until the end of the 4-year monitoring cycle, and that it would increase in direct proportion to the time elapsed. This means the average leak fraction over the 4-year cycle was 1 one-half of the initial leak fraction. We also assumed these leak fractions are what an affected source would measure when implementing an LDAR program, but enforcement inspectors would measure higher leak fractions. We assumed the actual leak fractions would be 1.7 times higher than the measured leak fractions, based on information from enforcement inspections of valves at refineries. Average leak rates were estimated using these actual leak fractions and the procedures in "Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017). As a result, we estimated

uncontrolled and controlled leak rates of 0.000307 kilograms per hour per connector (kg/hr/connector) and 0.000162 kg/hr/connector, respectively, which indicated the LDAR would reduce emissions by nearly 50 percent. Another issue is whether there are any specific technological or economic factors that should change the analysis for area sources relative to major sources. We also are interested in any other arguments for or against amending 40 CFR part 60, subparts VV and GGG to include LDAR for connectors.

V. Modification and Reconstruction Provisions

Existing affected sources that are modified or reconstructed would be subject to today's proposed amendments. A modification is any physical or operational change to an existing facility which results in an increase in the facility's emission rate (40 CFR 60.14 of subpart A). Changes to an existing facility that do not result in an increase in the emission rate, either because the nature of the change has no effect on emissions or because additional control technology is employed to offset an increase in the emission rate, are not considered modifications. In addition, certain changes have been exempted under the General Provisions (40 CFR 60.14 of subpart A). These exemptions include an increase in the hours of operation, addition or replacement of equipment for emission control (as long as the replacement does not increase the emission rate), and use of an alternative fuel if the existing facility was designed to accommodate it.

Rebuilt SOCOMI and petroleum refinery process units would become subject to the proposed amendments under the reconstruction provisions, regardless of changes in emission rate. Reconstruction means the replacement of components of an affected facility such that; (1) the fixed capital cost of the new components exceeds 50 percent of the cost of an entirely new SOCOMI or petroleum refinery process unit of comparable design, and (2) it is technologically and economically feasible to meet the applicable standard (40 CFR 60.15 of subpart A).

VI. 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 request comment on whether we have identified the appropriate alternatives and whether the proposed

standards adequately take into consideration the incremental effects in terms of emission reductions, energy, and other effects of these alternatives. The EPA will consider the available information in developing the final rule.

We are presenting estimates of the impacts for the proposed amendments that change the performance standards: the 500 ppm leak definition for valves and the 2,000 ppm leak definition for pumps. The other proposed amendments are clarifications to the existing 40 CFR part 60, subparts VV and GGG to ensure that the expected emission reductions are being achieved and have no emission reduction impacts. The costs, environmental, and economic impacts of the amendments are expressed as incremental differences between the impacts of SOCOMI and petroleum refining process units complying with the proposed amendments and the current NSPS requirements (*i.e.*, baseline). The impacts are presented for new SOCOMI and petroleum refining process units constructed over the next 5 years. The analyses and the documents referenced below can be found in Docket ID No. EPA-HQ-OAR-2006-0699.

The EPA estimates that there are no significant energy or secondary environmental impacts as a result of the proposed amendments. The proposed amendments are changes to work practice requirements and do not require changes to equipment or control devices. Use of fuel or electricity is not expected to increase significantly as a result of the proposed amendments. The proposed amendments would not increase wastewater or solid waste from SOCOMI or petroleum refinery process units.

A. What are the impacts for SOCOMI process units?

Using the 2004 SRI Consulting Directory of Chemical Manufacturers and the list of chemicals provided in 40 CFR 60.489 of subpart VV, we estimated that there are currently 1,272 total SOCOMI process units potentially subject to subpart VV. To estimate the number of new and reconstructed SOCOMI process units, we assumed that the SOCOMI industry would grow proportionally to the projected increase in the gross domestic product (GDP). Estimates of the annual increase in the GDP over the next 5 years range from 2.7 to 3.4 percent. Assuming an annual average growth rate of 3 percent, we estimate that there will be 191 new or reconstructed SOCOMI process units over the next 5 years.

SOCMI process units subject to the HON, the MON, or the Ethylene

NESHAP are already subject to the lower leak definitions proposed for 40 CFR part 60, subpart VV. Therefore, the baseline impacts for process units subject to these standards are equivalent to the impacts of the proposed amendment. As previously discussed (see section IV of this preamble), we assumed that 15 percent of the new or reconstructed SOCMU process units would be located at area sources and that 20 percent of the processes making MON chemicals would emit VOC but no HAP. An estimated 39 process units meet these criteria and would not be subject to a NESHAP.

Our analysis included several other assumptions and estimates as well. The basic structure for the impacts analysis was adapted from the analysis performed to estimate impacts for other

equipment leak rules, and several assumptions were kept, including the percentage of the process units represented by the small, medium, and large process unit models and the monitoring costs. We also assumed that of the 191 new or reconstructed sources over the next 5 years, 60 percent will be new and 40 percent will be reconstructed. Initial costs of lowering the leak definition for a reconstructed process unit are expected to be lower than initial costs of beginning an LDAR program for a new process unit. Initial leak fraction data were provided by industry in comments on the proposed MON (Docket Number A-96-04, Docket Item IV-D-123), and the methodology for estimating emissions was based on procedures in "Protocol for Equipment Leak Emission Estimates" (EPA-453/R-

95-017, November 1995) (the Protocol document).

Based on the assumptions described above, we estimate that the proposed amendments will reduce emissions of VOC about 230 Mg/yr from the baseline. The estimated increase in annual cost, including annualized initial costs, is about \$72,000. The cost-effectiveness is about \$310 per ton of VOC removed. The estimated nationwide 5-year incremental emissions reductions and cost impacts for the proposed amendments are summarized in Table 1 of this preamble. In addition to the annual cost for the proposed lower leak definitions for valves and pumps, the estimated increase in annual cost for the proposed record keeping and reporting requirements is \$369,000.

TABLE 1.—NATIONAL EMISSION REDUCTIONS AND COST IMPACTS FOR SOCMU UNITS SUBJECT TO AMENDED STANDARDS UNDER SUBPART VV OF 40 CFR PART 60 (5TH YEAR AFTER PROPOSAL)

Amendment	Annual emissions reductions (Mg/yr)	Total initial cost (\$/yr)	Annual cost (\$/yr)	Cost-effectiveness (\$/Mg)
Lower leak definition for valves and pumps	230	130,000	72,000	310

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

We estimated that there are currently 150 petroleum refineries, based on the 2004 Oil and Gas Journal and the Energy Information Administration 2004 Refinery Capacity Report, and we estimated the average number of process units at each refinery from information presented in the 2004 Oil and Gas Journal. To project the number of new or reconstructed petroleum refinery process units, we assumed that the growth will be proportional to the distribution of process units at an average refinery. We estimated that about three refineries' worth of process units would become subject to 40 CFR part 60, subpart GGG per year (equivalent to a 2 percent growth rate), with 60 percent of those being new process units. We estimate that there will be 195 new or reconstructed process units that emit VOC over the next 5 years.

In estimating the impacts of the proposed amendments for petroleum refineries, we took into account that a large number of petroleum refineries (equivalent to 76.5 percent of the

industry capacity) currently comply with a consent decree, and new or reconstructed units at these facilities will be subject to requirements equivalent to the proposed amendments to 40 CFR part 60, subparts VV and GGG. Therefore, the baseline impacts for process units subject to a consent decree are equivalent to the impacts of the proposed amendment (i.e., there are no incremental impacts for these process units). Subpart CC to 40 CFR part 63 includes lower leak definitions for valves and pumps on new sources since July 14, 1994, so the baseline impacts for process units subject to this standard are also equivalent to the impacts of the proposed amendment. Therefore, we estimated the impacts of the proposed amendments to lower the leak definition for valves and pumps for the 17 new or reconstructed process units not subject to subpart CC or a consent decree.

Our analysis included several other assumptions and estimates as well. Most are similar to the assumptions described above for the SOCMU analysis, including the monitoring costs per component. There are, however, a few major differences. One difference is that the model is based on number of process

units subject to a certain scenario (e.g., number of new process units subject to a consent decree) rather than size of the process unit (although the model does consider the differences in number of components on a process unit at a small refinery versus a unit at a large refinery). Also, emissions estimates are based on data provided in *Analysis of Refinery Screening Data* (American Petroleum Institute, November 1997) as well as the Protocol document.

Based on the assumptions described above, we estimate that the proposed amendments will reduce emissions of VOC about 13 Mg/yr from the baseline. The estimated increase in annual cost, including annualized initial costs, is about \$45,000. The cost-effectiveness is about \$3,400 per ton of VOC removed. The estimated nationwide 5-year incremental emissions reductions and cost impacts for the proposed amendments are summarized in Table 2 of this preamble. In addition to the annual cost for the proposed lower leak definitions for valves and pumps, the estimated increase in annual cost for the proposed record keeping and reporting requirements is \$120,000.

TABLE 2.—NATIONAL EMISSIONS REDUCTIONS AND COST IMPACTS FOR PETROLEUM REFINERY UNITS SUBJECT TO AMENDED STANDARDS UNDER SUBPART GGG OF 40 CFR PART 60 (5TH YEAR AFTER PROPOSAL)

Amendment	Annual emissions reductions (Mg/yr)	Total initial cost (\$/yr)	Annual cost (\$/yr)	Cost-effectiveness (\$/Mg)
Lower leak definition for valves and pumps	13	27,000	45,000	3,400

C. What are the economic impacts?

An economic impacts analysis was performed to compare the control costs associated with producing a product at petroleum refineries and various types of SOCOMI facilities to the average value of shipments from such facilities. Since we are unable to associate projected control costs with specific facilities, we examined the polar costs of all of the affected process units being at one facility in the industry versus 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 0.2 percent of the facility value of shipments is if all the national costs for SOCOMI fell on one average ethyl alcohol manufacturing facility. 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 because of the proposed amendments to standards of performance for equipment leaks of VOC for the petroleum refining industry and SOCOMI.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

This action is not a “significant regulatory action” under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under the Executive Order.

B. Paperwork Reduction Act

The OMB has previously approved the information collection requirements in the existing rules (40 CFR part 60, subparts VV and GGG). The information collection requirements in this proposed rule have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR number 1854.05 for the consolidation of all ICRs related to rule that apply to the SOCOMI, including 40 CFR part 60, subpart VV and EPA

ICR number 0983.09 for 40 CFR part 60, subpart GGG.

The information to be collected for the proposed amendments to 40 CFR part 60, subparts VV and GGG 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 new source performance standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the 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.

The proposed amendments to 40 CFR part 60, subparts VV and GGG would require sources to maintain records of leaking open-ended lines, instrument calibration activities, all instrument readings, the results of weekly pump inspections, and information about possible flow in lines that bypass control devices. Additionally, the sources would be required to include information about leaking open-ended lines and flow in bypass lines in semi-annual compliance reports.

The annual projected burden for EPA ICR number 1854.05 (40 CFR part 60, subpart VV) to owners and operators of affected sources subject to the final rule is estimated to be 1,999,723 labor-hours per year, with a total annual cost of \$95.3 million per year. The hour burden is based on an estimated 199.6 hours per response on a semi-annual basis by 3,349 respondents.

The annual projected burden for EPA ICR number 0983.06 (40 CFR part 60, subpart GGG) to owners and operators of affected sources subject to the final rule is estimated to be 8,317 labor-hours per year. The hour burden is based on an estimated 82 hours per response on a semi-annual basis by 49 respondents.

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 are listed in 40 CFR part 9.

To comment on the Agency’s need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this rule, which includes this ICR, under Docket ID number EPA–HQ–OAR–2006–0699. Submit any comments related to the ICR for this proposed rule to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after November 7, 2006, a comment to OMB is best assured of having its full effect if OMB receives it by December 7, 2006. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

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 proposed amendments on small entities, small entity is defined as: (1) A small business according to Small Business Administration size standards by the 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 SOCOMI, 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 today's proposed amendments on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analysis is to identify and address regulatory alternatives "which minimize any significant economic impact of the rule on small entities." 5 U.S.C. 603 and 604. Thus an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule.

An economic impacts analysis was performed to compare the control costs associated with producing a product at petroleum refineries and various types of SOCOMI facilities to the average value of shipments from such facilities. In all cases, the costs are small relative to facility sales figures. Thus, any price increases or loss of profit would be quite small. While the distribution of costs to small entities is unknown, no significant impact is expected for facilities of any size. For more information on the results of the analysis of small entity impacts, please refer to the economic impact analysis in the docket.

Although the proposed NSPS would not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to

reduce the impact of the proposed amendments on small entities. In the proposed amendments, the Agency is applying the minimum level of control and the minimum level of monitoring, recordkeeping, and reporting to affected sources allowed by the CAA. This provision should reduce the size of small entity impacts. We continue to be interested in the potential impacts of the proposed amendments on small entities and welcome comments on issues related to such impacts.

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 the proposed amendments do 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, the estimated expenditures for the private sector in the fifth year after proposal are \$72,000 for SOCOMI units and \$41,000 for petroleum refineries. Thus, the proposed amendments are not subject to the requirements of section 202 and 205 of the UMRA.

In addition, EPA has determined that the proposed amendments contain no regulatory requirements that might significantly or uniquely affect small governments. The proposed amendments contain no requirements that apply to such governments, impose no obligations upon them, and would not result in expenditures by them of \$100 million or more in any 1 year or any disproportionate impacts on them. Therefore, the proposed amendments are 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 proposed amendments do not have federalism implications. They 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 the proposed amendments.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on these proposed amendments from State and local officials.

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 proposed amendments do not have tribal implications, as specified in Executive Order 13175. They 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 the proposed amendments.

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 interpret 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. The proposed amendments are not subject to Executive Order 13045 because they 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 rule is not subject to Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355, May 22, 2001), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement

Act of 1995 (NTTAA), Public Law 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.

The proposed amendments do not involve technical standards. Therefore, EPA is not considering the use of any VCS.

List of Subjects in 40 CFR Part 60

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

Dated: October 31, 2006.

Stephen L. Johnson,
Administrator.

For the reasons cited in the preamble, title 40, chapter I, part 60 of the Code of Federal Regulations is proposed to be 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 VV—[Amended]

2. Section 60.480 is amended by revising paragraph (b) 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, shall be subject to the requirements of this subpart.

* * * * *

3. Section 60.481 is amended in paragraph (a)(3) by:

a. Revising the table heading “Table for Determining Applicable for B” to read “Table for Determining Applicable Value for B” in the definition of “Capital expenditure”;

b. Revising the word “judgement” to read “judgment” in the definition of “Hard-piping”;

c. Revising the definitions “Process unit” and “Repaired”;

d. Adding, in alphabetical order, new definitions “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 and is not vented directly to the atmosphere.

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

* * * * *

Process unit means the equipment 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 of this part. 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 product storage vessels, product transfer racks, and connected ducts and piping. A process unit includes pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems.

* * * * *

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 as otherwise specified in § 60.482–2(c)(2)(ii) and (d)(6), 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 products, or generated as wastes.

* * * * *

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.

* * * * *

4. Section 60.482–1 is amended by adding paragraph (e) to read as follows:

§ 60.482–1 Standards: General.

* * * * *

(e)(1) If a dedicated 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 (% of days 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 times	Semiannually.
75 to <100%	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more process units that are part of an affected facility as defined in § 60.480 may be monitored at the frequencies specified in paragraph (e)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (e)(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. For example, if the equipment is not operating during the first month of a quarter when valve monitoring is normally scheduled, the monitoring may be done within a period equal to 30 percent of the applicable monitoring period after startup. Similarly, if a process is not operating during the second week of a month when pump monitoring is normally scheduled, the monitoring can be done within 30 percent of the applicable monitoring period after startup.

5. Section 60.482–2 is amended by:
 a. Revising paragraph (a)(1);
 b. Revising paragraph (b);
 c. Revising paragraph (c)(2);
 d. Revising paragraphs (d) introductory text, (d)(4), (d)(5), and (d)(6) 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 paragraphs (d), (e), and (f) of this section. A pump that is placed into light liquid service after the initial startup date for the process unit must be monitored for the first time during the next monthly monitoring period for the existing pumps in the process unit, except as provided in

§ 60.482–1(c) and paragraphs (d), (e), and (f) of this section.

* * * * *

(b)(1)(i) Except as specified in paragraph (b)(1)(ii) of this section, if an instrument reading of 10,000 parts per million (ppm) or greater is measured, a leak is detected.

(ii) If the affected facility as defined in § 60.480 commences construction, reconstruction, or modification after November 7, 2006, the instrument reading that defines a leak is specified in paragraphs (b)(1)(ii)(A) and (B) of this section.

(A) 5,000 ppm or greater for pumps handling polymerizing monomers;

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

(2) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (b)(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 the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable, and the pump was not repaired since that monitoring event.

(i) Monitor the pump as specified in § 60.485(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) * * *

(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), provided the requirements specified in paragraphs (d)(1) through (6) of this section are met.

* * * * *

(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) The owner or operator shall monitor the pump as specified in § 60.485(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) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) or (d)(5)(iii) of this section, it shall be repaired as specified in paragraph (c) of this section. A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired either as specified in paragraph (c) of this section or by

eliminating visual indications of liquids dripping.

* * * * *

6. Section 60.482-3 is amended by revising paragraph (j) to read as follows:

§ 60.482-3 Standards: Compressors.

* * * * *

(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.

7. 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).

(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 (3) 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) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(3)(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 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; or

(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.

* * * * *

8. Section 60.482-6 is amended by adding paragraph (a)(3) to read as follows:

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

(a) * * *

(3) Each open-ended valve or line shall be monitored annually to detect leaks by the methods specified in § 60.485(b), except as provided in § 60.482-1(c) and paragraphs (d) and (e) of this section. If the open-ended valve or line is equipped with a cap, blind flange, or plug, monitoring shall occur at the interface of the cap, blind flange, or plug and the end of the line. If the open-ended valve or line is equipped with a second valve, monitoring shall occur at the open end of the line. If an instrument reading of 500 ppm or greater is measured, a leak is detected. 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 § 60.482-9. Examples of attempts at repair include replacing gaskets, adding Teflon tape, or tightening or replacing the cap, plug, blind flange, or second valve.

* * * * *

9. Section 60.482-7 is amended by revising paragraphs (a), (b), 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), except as provided in paragraphs (f), (g), and (h) of this section; § 60.483-1 and 2; and § 60.482-1(c).

(2) A valve that is placed into gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored for the first time within 1 month after being placed into service to ensure proper installation, except as provided in paragraphs (f), (g), and (h) of this section. Subsequent monitoring must be on the same schedule as monitoring for existing valves in the process unit, except as provided in paragraphs (f), (g), and (h) of this section; § 60.483-1 and 2; and § 60.482-1(c).

(b)(1) Except as specified in paragraph (b)(2) of this section, if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If the affected facility as defined in § 60.480 commences construction, reconstruction, or modification after November 7, 2006 and an instrument reading of 500 ppm or greater is measured, a leak is detected.

(c)(1) 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 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.

* * * * *

10. Section 60.482-8 is amended by revising paragraph (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.

* * * * *

(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).

11. Section 60.482-9 is amended by adding paragraph (f) to read as follows:

§ 60.482-9 Standards: Delay of repair.

* * * * *

(f) When delay of repair is allowed for a leaking pump or valve that remains in service, the owner or operator may elect to discontinue monitoring the pump or valve until it is repaired. If the owner or operator elects to continue monitoring, the pump or valve may be considered to be repaired if two consecutive monthly monitoring instrument readings are below the leak definition.

12. Section 60.482-10 is amended by adding paragraph (n) to read as follows:

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

* * * * *

(n) Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines, the owner or operator shall comply with the provisions of either paragraphs (n)(1) or (2) of this section for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes.

Records shall be generated as specified in § 60.486(d)(6)(i). The flow indicator shall be installed at the entrance to any bypass line.

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line. Records shall be generated as specified in § 60.486(d)(6)(ii).

13. Section 60.483-1 is amended by revising paragraph (c)(2) to read as follows:

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

* * * * *

(c) * * *

(2)(i) Except as specified in paragraph (c)(2)(ii) of this section, if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(ii) If the affected facility as defined in § 60.480 commences construction, reconstruction, or modification after November 7, 2006 and an instrument reading of 500 ppm or greater is measured, a leak is detected.

* * * * *

14. 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 valve-skip period leak detection and repair.

* * * * *

(b) * * *

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during the current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section. If the process unit has been subdivided in accordance with § 60.482-7(c)(1), the sum of valves found leaking during the current monitoring includes all subgroups.

* * * * *

(7) A valve that is placed into gas/vapor service or light liquid service after implementing the provisions in this § 60.483-2 must be monitored for the first time within 1 month after being placed into service to ensure proper installation. Subsequent monitoring must begin in the next quarter during which all existing valves in the process unit must be monitored.

§ 60.484 [Amended]

15. Section 60.484 is amended by revising "equivalence" to read "equivalence" in paragraph (a).

16. Section 60.485 is amended by:

- a. Revising paragraph (b)(1)(ii);
- b. Adding paragraph (b)(2); and
- c. Revising paragraph (e) introductory text to read as follows:

§ 60.485 Test methods and procedures.

* * * * *

(b) * * *

(1) * * *

(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 shift. Check the instrument using the same calibration gases that were used to calibrate the instrument before use. Follow the procedures specified in Method 21, 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 § 60.486(e)(7), and calculate the percent difference from the initial calibration value. 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 20 percent of the leak definition must be re-monitored.

* * * * *

(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:

* * * * *

17. Section 60.486 is amended by:

- a. Adding paragraph (a)(3);
- b. Revising paragraphs (b) introductory text, (c) introductory text, and (c)(4); and
- c. Adding paragraphs (d)(6), (e)(6), and (e)(7) to read as follows:

§ 60.486 Recordkeeping requirements.

(a) * * *

(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 §§ 60.482-2, 60.482-3, 60.482-6, 60.482-7, 60.482-8, and 60.483-2.

(i) Monitoring instrument identification.

(ii) Operator identification.

(iii) Equipment identification.

(iv) Date and time of monitoring.

(v) Instrument reading.

(b) When each leak is detected as specified in §§ 60.482-2, 60.482-3, 60.482-6, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply:

* * * * *

(c) When each leak is detected as specified in §§ 60.482-2, 60.482-3, 60.482-6, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

* * * * *

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

* * * * *

(d) * * *

(6) For each closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (d)(6)(i) or (ii) of this section, as applicable.

(i) Hourly records of whether the flow indicator specified under § 60.482-10(n)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the starting and ending times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(ii) Where a seal mechanism is used to comply with § 60.482-10(n)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has been broken.

(e) * * *

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

(7) Records of the information specified in paragraphs (e)(7)(i) through (vi) of this section for monitoring

instrument calibrations conducted according to sections 8.1.2 and 10 of EPA Method 21 and § 60.485(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 EPA Method 21.

(v) Results of each calibration drift assessment required by § 60.485(b)(2) (i.e., instrument reading for calibration at end of monitoring shift 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.

* * * * *

18. Section 60.487 is amended by:

a. Revising paragraphs (c)(2)(iii),

(c)(2)(iv), and (c)(2)(vi);

b. Redesignating paragraph (c)(2)(vii) as paragraph (c)(2)(xi); and

c. Adding new paragraphs (c)(2)(vii) through (c)(2)(x) to read as follows:

§ 60.487 Reporting requirements.

* * * * *

(c) * * *

(2) * * *

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

* * * * *

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

(vii) Number of open-ended lines for which leaks were detected as described in § 60.482–6(a)(3),

(viii) Number of open-ended lines for which leaks were not repaired as required in § 60.482–6(a)(3),

(ix) Starting and ending times of all periods recorded under § 60.486(d)(6)(i) when the vent stream is diverted from the control device through a bypass line,

(x) Instances recorded under § 60.486(d)(6)(ii) when maintenance is performed in car-sealed valves, when the seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out, and

(xi) The facts that explain each delay of repair and, where appropriate, why a

process unit shutdown was technically infeasible.

* * * * *

Subpart GGG—[Amended]

19. Section 60.590 is amended by revising paragraph (b) 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, is subject to the requirements of this subpart.

* * * * *

20. Section 60.591 is amended by adding a definition in alphabetical order for “Asphalt” 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 equipment 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 product storage vessels, product transfer racks, and connected ducts and piping. A process unit includes pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems.

21. 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.

* * * * *

22. Section 60.593 is amended by:

a. Revising the first sentence of paragraph (b)(2) and paragraphs (c) and (d); and

b. Adding paragraphs (f) and (g) 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) When §§ 60.482(b)(1)(ii), 60.482–7(b)(2), and 60.483–1(c)(2)(ii) refer to an affected facility as defined in § 60.480, it means an affected facility as defined in § 60.590 for the purposes of this subpart.

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

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