United States
Environmental Protection
Agency

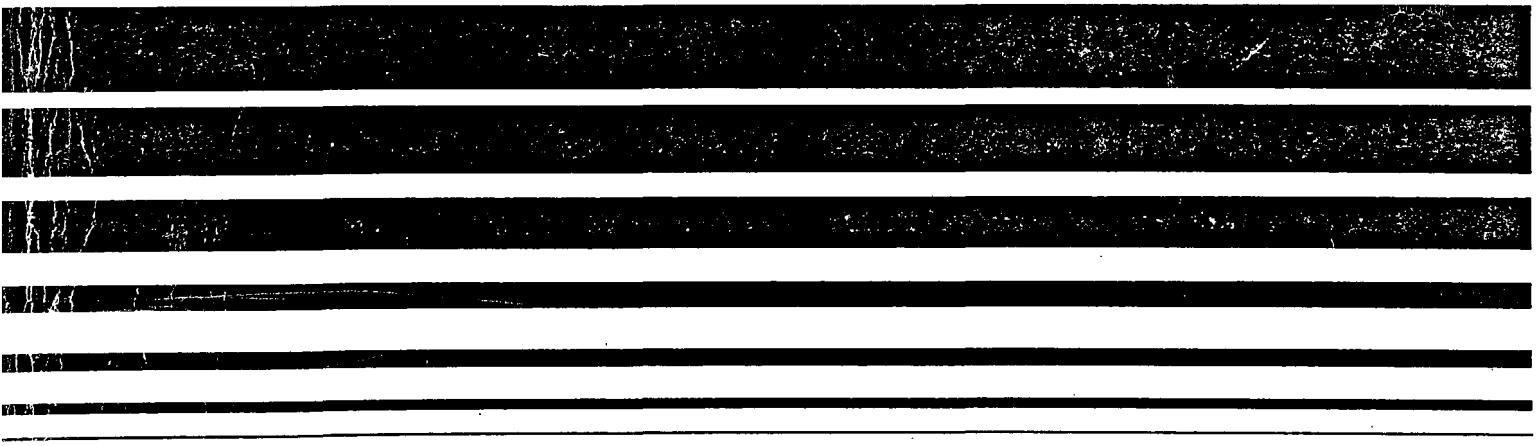
Office of Air Quality
Planning and Standards
Research Triangle Park, NC 27711

EPA-340/1-91-013
September 1991

Stationary Source Compliance Series

EPA

Regulatory and Inspection Manual for Petroleum Refinery Wastewater Systems



EPA 340/1-91-013

REGULATORY AND INSPECTION MANUAL FOR PETROLEUM REFINERY WASTEWATER SYSTEMS

Prepared for:

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September 1991

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SECTION 1
PURPOSE OF THIS MANUAL

Section 111 of the Clean Air Act, as amended in 1977, directed the U.S. Environmental Protection Agency (EPA) to set standards of performance for any newly constructed, modified, or reconstructed sources of air pollution that may endanger public health or welfare. These New Source Performance Standards (NSPS) were to be promulgated for industries recognized as being significant contributors to air pollution. Petroleum refining was identified as a significant contributor of volatile organic compound (VOC) emissions to the atmosphere, and was therefore recognized as a priority industry for standards development. Refinery fugitive emissions of VOC were further identified as a specific source category to be regulated.

In May of 1984, NSPS were promulgated to control fugitive emissions from equipment leaks in petroleum refineries. Refinery wastewater systems were recognized as an additional source of fugitive VOC emissions, and standards of performance for refinery wastewater systems were promulgated on November 23, 1988. The NSPS for refinery wastewater systems is found in Subpart QQQ of the Code of Federal Regulations (40 CFR Part 60).

The purpose of this manual is to assist federal, state, and local regulatory personnel with the enforcement of Subpart QQQ. This document contains all the information needed to enforce the standard. Section 2 describes the components of a refinery wastewater system, and specifically addresses the VOC emission sources that are subject to the NSPS. Section 3 describes the required emission controls. Section 4 presents an overview of the standard, giving a paragraph by paragraph explanation of the intent and requirements of the rule. Section 5 gives detailed requirements of the standard, including applicability checklists and tables that further explain the rule. Finally, Section 6 provides guidelines for conducting inspections and includes a series of compliance checklists that can be used by the inspector of the facility.

Several appendices are also included. Appendix A contains the general provisions (Subpart A) of 40 CFR 60. Appendix B contains the most recent version of the New Source Performance Standard for Petroleum Refinery Wastewater Systems (Subpart QQQ), while Appendix C includes a full copy of Subparts K, Ka, and Kb. Subparts K, Ka, and Kb are New Source Performance Standards for storage tanks. Appendix D summarizes the compliance issues associated with the standard, and Appendix E gives applicable test methods required by the rule. Finally, Appendix F provides additional copies of all the reference tables and checklists discussed in Sections 5 and 6. The purpose of this appendix is to provide regulatory personnel with all of the forms needed for compliance inspections in one section of the document. The forms in this section can be reproduced and used for multiple inspections.

SECTION 2
DESCRIPTION OF EMISSION SOURCES IN A REFINERY WASTEWATER SYSTEM

The design of a refinery wastewater system will vary for each facility. The components of the system will be dependent on the size of the refinery, the quantity and quality of the wastewater, and the degree of treatment necessary to meet effluent guidelines. In general, a wastewater system will include three major segments. First, there will be a collection system consisting of drains, junction boxes, and piping designed to collect and transport wastewater to the treatment processes. Second, there will be primary treatment processes consisting of oil removal and recovery in an oil-water separator. Finally, there will be additional treatment processes that can be classified as intermediate, secondary, or tertiary wastewater treatment. These may include enhanced oil removal in air floatation devices, biological treatment using trickling filters or activated sludge, and final polishing of wastewater using additional filtration or carbon adsorption. Figure 2-1 illustrates an example refinery wastewater system. Table 2-1 shows the components of the refinery wastewater treatment system.

The highest concentrations of VOC in the wastewater will be found at the source of collection and during primary treatment. Therefore, the potential for air emissions of VOCs will also be highest at these points. For this reason, Subpart QQQ focuses on the control of air emissions from process drains, junction boxes, and oil-water separators.

This section includes descriptions of the emission sources regulated by the NSPS for refinery wastewater systems, along with general descriptions of the overall wastewater treatment process.

2.1 WASTEWATER COLLECTION SYSTEMS

Refinery wastewater is collected from process units and other areas of the refinery in a network of drains. Process units are generally independent processes which cause chemical and physical changes in refinery feedstock. Wastewater is generated by a variety of sources including cooling water, condensed stripping steam, tank draw offs, and contact process water. In some older refineries, process unit wastewater is mixed with stormwater in an integrated collection system. Newer refineries have segregated collection systems that separate oily process wastewater from non-oily stormwater. The focus of the NSPS is to control emissions from oily, VOC-laden wastewater. The following sections will discuss the components of the wastewater collection system, with emphasis on the emission sources targeted by the NSPS.

2.1.1 Process Drains

Oily wastewater generated by process units enters the collection system through a network of individual process drains. A medium-sized refinery can have an many as 1000 drains. The process drains are connected to lateral sewer lines, and there may be several lateral sewer lines in a process

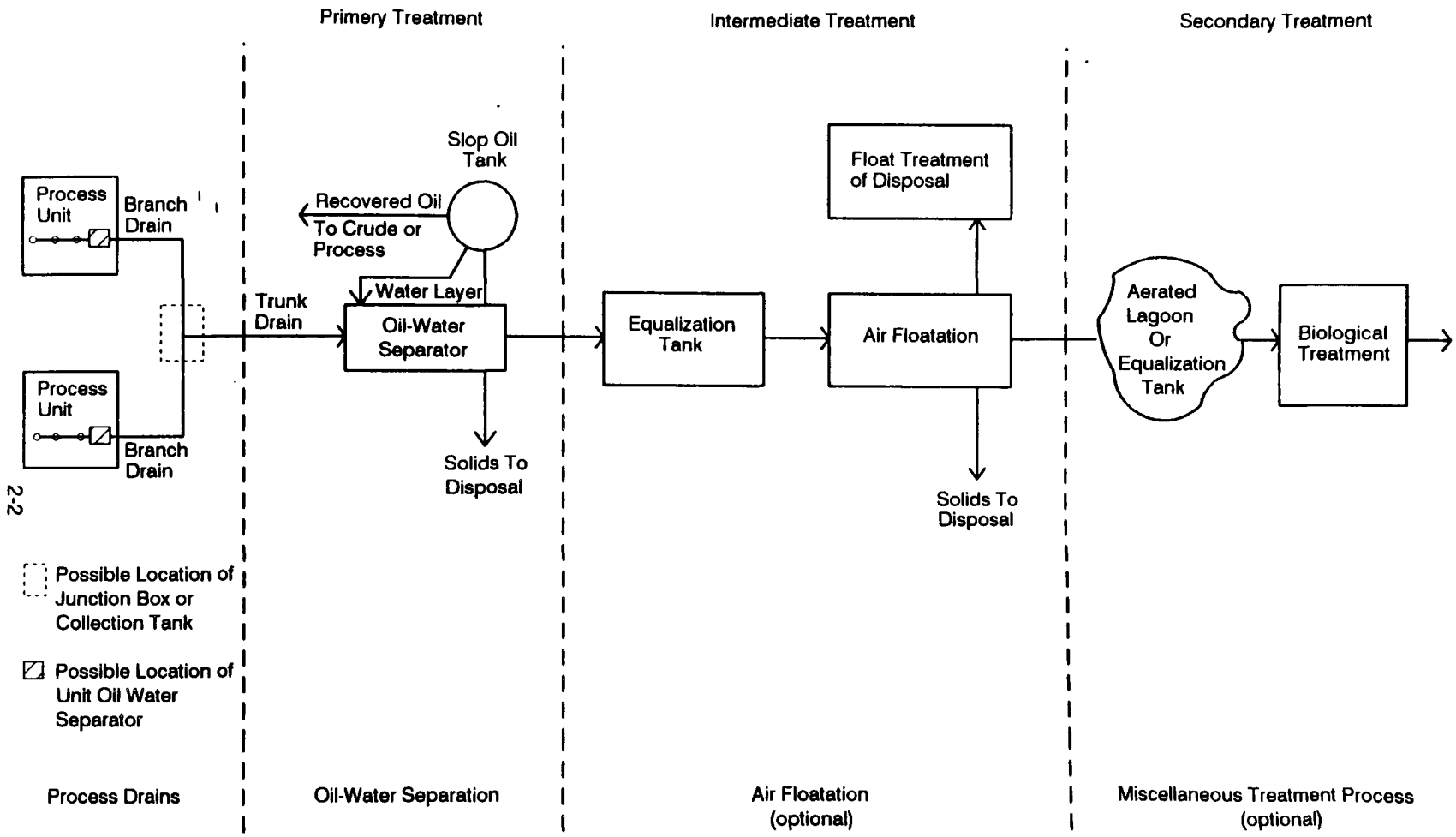


Figure 2-1. Example refinery wastewater system.

TABLE 2-1. CLASSIFICATION OF REFINERY WASTEWATER TREATMENT PROCESSES

Treatment	Objectives	Example Processes
Primary Treatment	Removal of free oil and suspended solids	API separators Parallel plate separators CPI separators
Intermediate Treatment	Removal of emulsified oil, free oil, suspended solids, and colloidal solids	Dissolved air floatation Induced air floatation Coagulation-floatation Coagulation-precipitation Filtration
Secondary Treatment	Dissolved organics removal, reduction in BOD and COD	Activated sludge Trickling filters Aerated lagoons Oxidation ponds Rotating biological contactor
Tertiary Treatment	Final polishing	Carbon adsorption Filtration

unit. The lateral sewers flow into junction boxes or manholes that are connected to the main trunk sewer. Figure 2-2 illustrates a general refinery drain system.

All process drains are potentially sources of fugitive VOC emissions. Several types of process drains are used in a refinery. The various types of drains are shown in Figure 2-3 and discussed below.

Open Drains

This type of drain is common in older refineries. A straight section of pipe, usually 4 to 6 inches in diameter, extends vertically to a height of 4 to 6 inches above grade. The pipe is connected directly to a lateral sewer line with the pipe directed either straight down or at an offset. Drain lines or piping from the various sources within the process unit generally terminate just within, at, or slightly above the mouth of the process drain. There is often more than one drain line directed to a single drain opening.

P-Leg Sealed Drains

P-leg sealed drains are similar to open drains, except that a "P" bend in the pipe is found below grade. The P-bend provides a liquid seal for the individual drain, similar to that found in household plumbing.

Seal Pot Drains

A seal pot drain has a cap covering the drain opening, and the bottom edge of the cap extends below the level of the drain entrance. Liquid from the various drain pipes falls into the drain area outside of the cap and then flows under the edge of the cap and into the drain line. The drain cap can be easily removed to clean the drain entrance and drain line.

Closed Drains

This type of drain is not common in refinery process units. The drain riser extends about 12 to 18 inches above grade. The top of the riser is completely sealed with a flange. Drain pipes are welded directly to the riser at points between grade and the flange seal. In some cases, an extra drain nozzle is also welded to the riser. This line is normally closed with a valve, but provides access to the closed drain system for intermittent and infrequent needs such as pump drainage. Hoses or flexible lines can be connected to the riser valve from the liquid source.

2.1.2 Junction Boxes

The relationship of individual process drains and junction boxes is important to applicability of the NSPS. The standard defines an individual drain system as "all process drains connected to the first common downstream junction box. The term also includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator." (40 CFR Part 60 Subpart QQQ, §60.691) Figure 2-4 illustrates this definition.

The junction box is the central converging point of the process drains before entering the trunk sewers. Junction boxes permit access to the sewer lines for cleaning and inspection, and separate sewer lines.

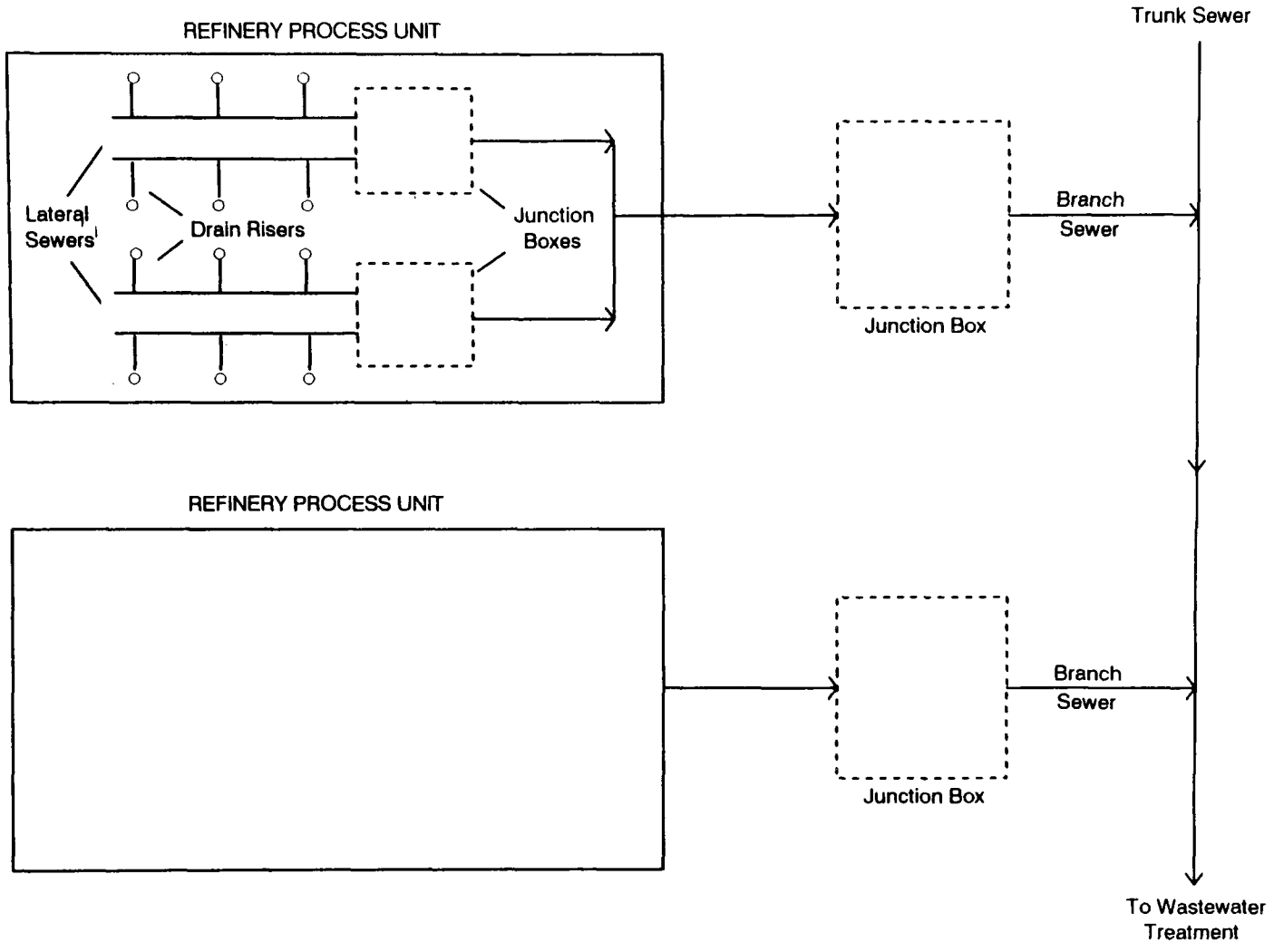
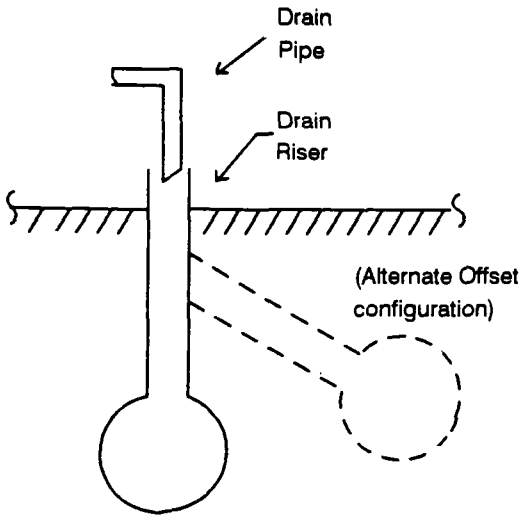
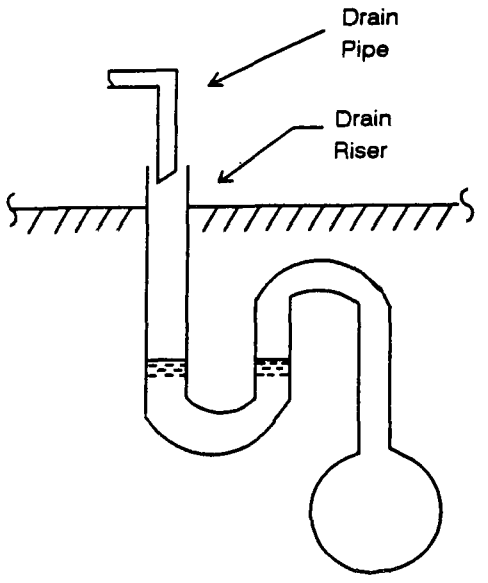


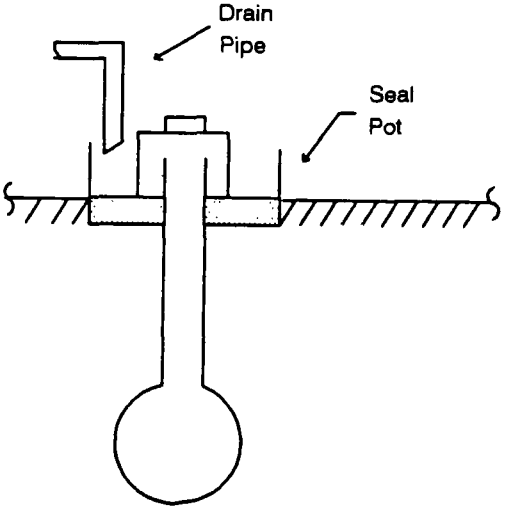
Figure 2-2. General refinery drain system.



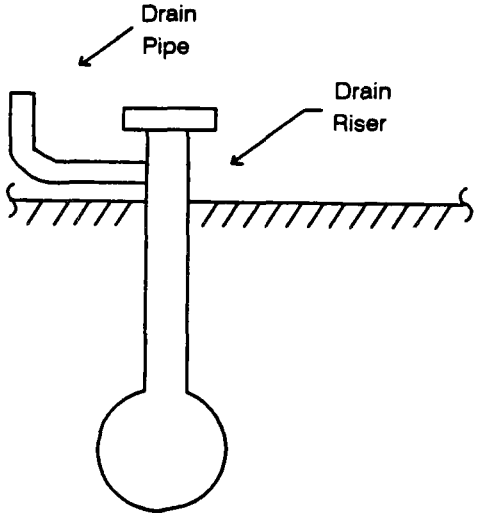
Open, Unsealed
Configuration A



P-Leg Seal
Configuration B



Seal Pot
Configuration C



Closed Drain
Configuration D

Figure 2-3. Types of Refinery Drains.

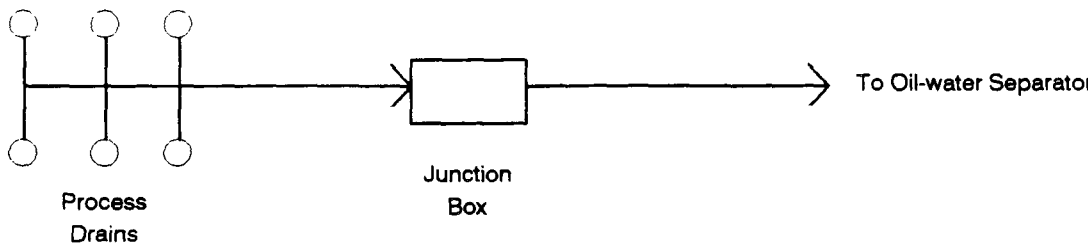


Figure 2-4. Individual drain system.

Figure 2-5 shows two types of junction boxes commonly found in a refinery. First, there is the typical junction box vented to prevent siphoning and vapor locks. Second, a junction box equipped with a water seal pot is shown. A small amount of water continually flows down the vent pipe to maintain the water seal. Finally, Figure 2-6 shows a gas trap manhole. This type of junction box includes a baffle that separates the box into two chambers. Both chambers are vented to the atmosphere.

Most refinery sewer systems are designed for gravity flow of the wastewater from the process units to the treatment processes. However, when gravity sewers are not feasible, lift stations are needed to pump wastewater within the sewer system. Lift stations are collection points for wastewater, and can be considered equivalent to junction boxes. A lift station is essentially a junction box with a pump inside. The NSPS requires lift stations to meet the same emission control specified for junction boxes.

2.2 Primary Treatment

Primary treatment in a refinery wastewater treatment system consists of removing free oil and suspended solids from the wastewater. In most cases, the free oil is recovered and returned to the refining process. The most common method for removing free oil is the use of an oil-water separator.

2.2.1 Oil-Water Separators

An oil-water separator is usually the first wastewater treatment process used in a refinery. All separators rely on the different densities of water, oil, and solids to operate successfully. Wastewater enters a quiescent zone in the separator where the various phases separate. Oils and solids with specific gravities less than water float to the surface, while heavy solids sink to the bottom.

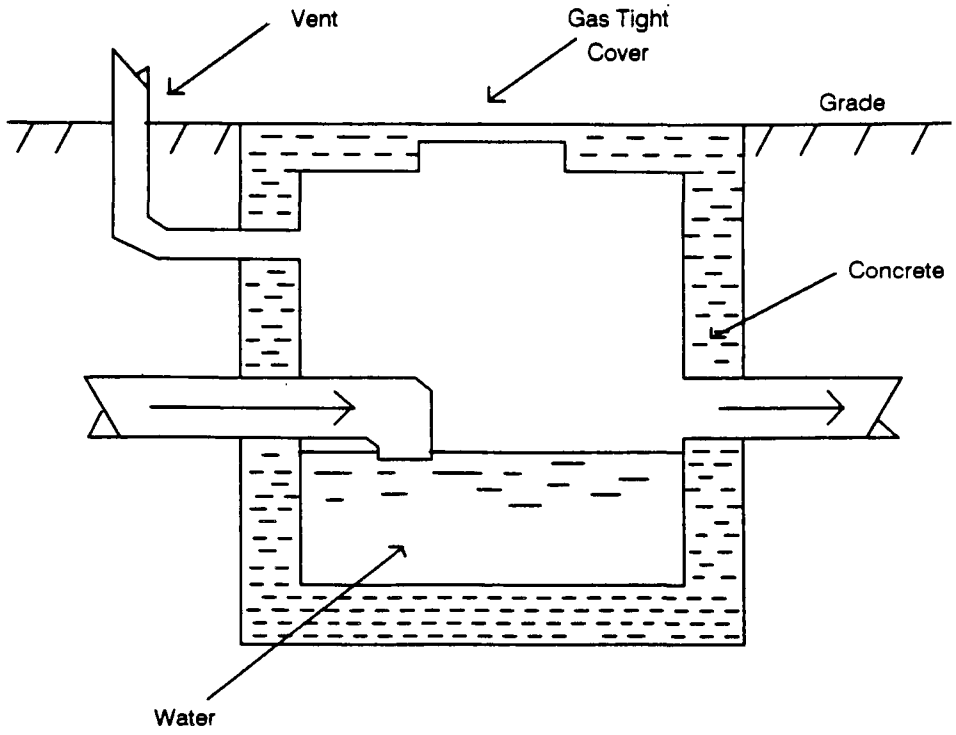
Oil-water separators are a source of VOC emissions because of the volatilization of organic compounds from the surface of the separator. There are two types of oil-water separators commonly used in a refinery. Each type is discussed below.

American Petroleum Institute (API) Separators

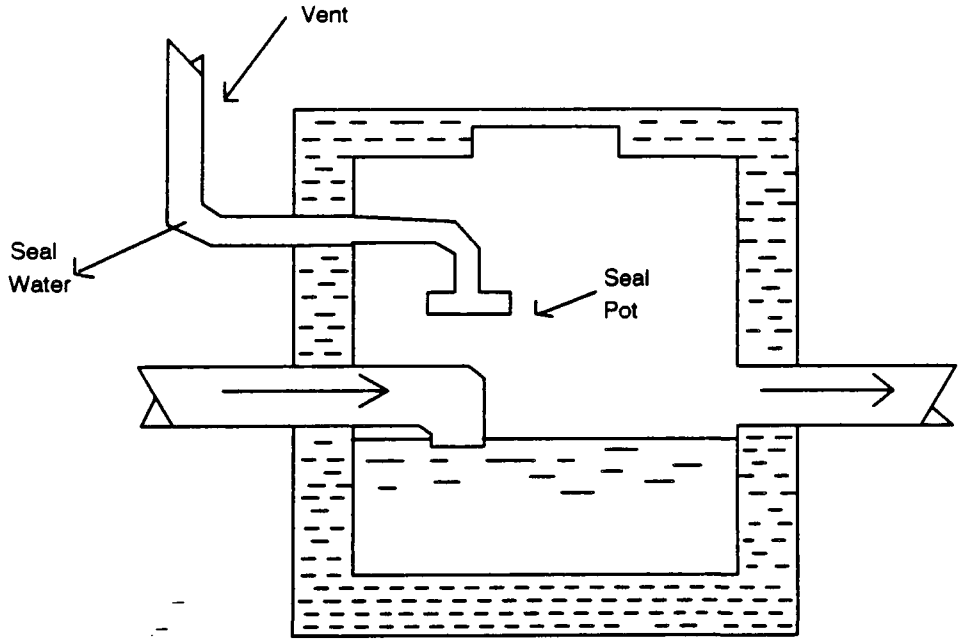
Figure 2-7 shows a typical API separator. In this separator, influent passes through trash bars and a skimmer (the forebay) before entering the quiescent zone of the main bay. In the main bay, wastewater velocity is kept very low to prevent any turbulent mixing. Free oil droplets are allowed to rise to the surface where they coalesce in an oil layer. The oil layer is then skimmed from the water surface using various types of skimming mechanisms. API separators are usually constructed of reinforced concrete, although prefabricated fiberglass units are available.

Corrugated Plate Interceptors (CPI)

Figure 2-8 shows a diagram of a CPI, which consists of corrugated parallel plates. Wastewater flows downward between the plates, with the lighter oil droplets floating upward into the tops of the



(a) TYPICAL JUNCTION BOX



(b) JUNCTION BOX WITH WATER SEAL POT

Figure 2-5. Refinery drain system junction boxes.

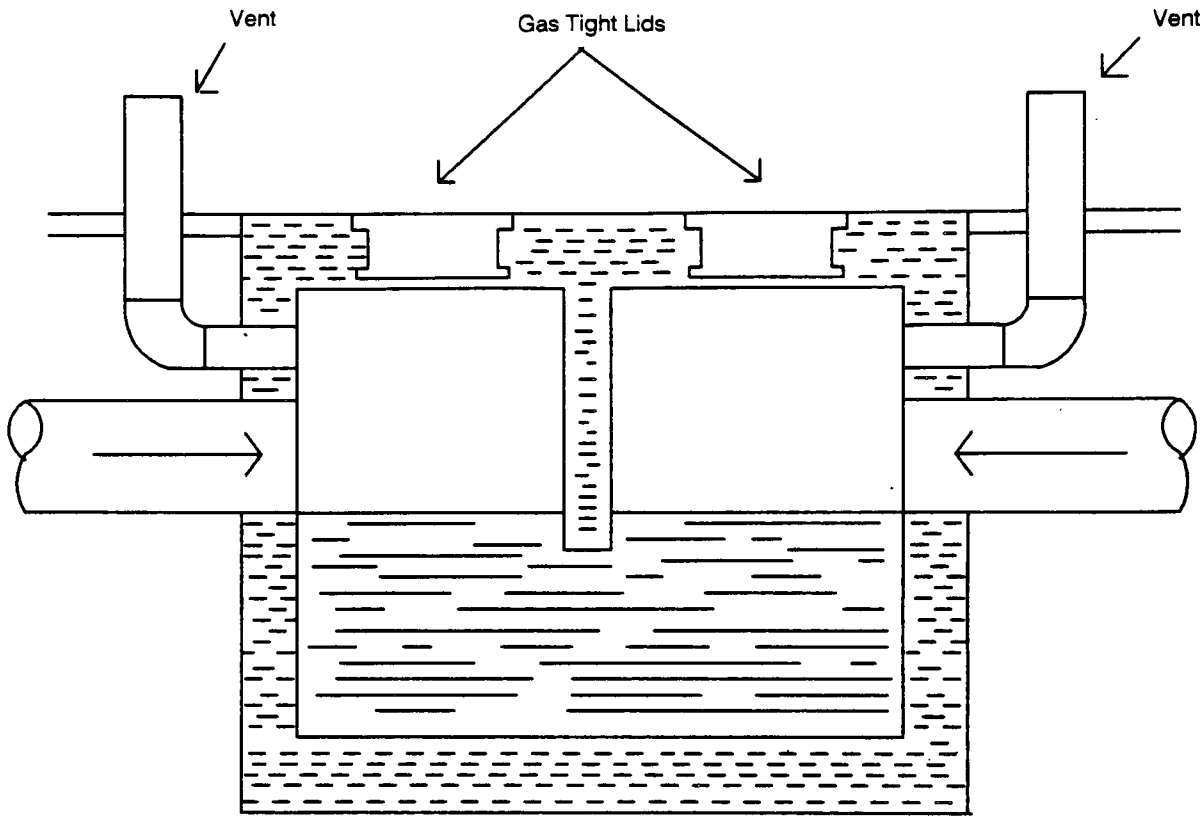
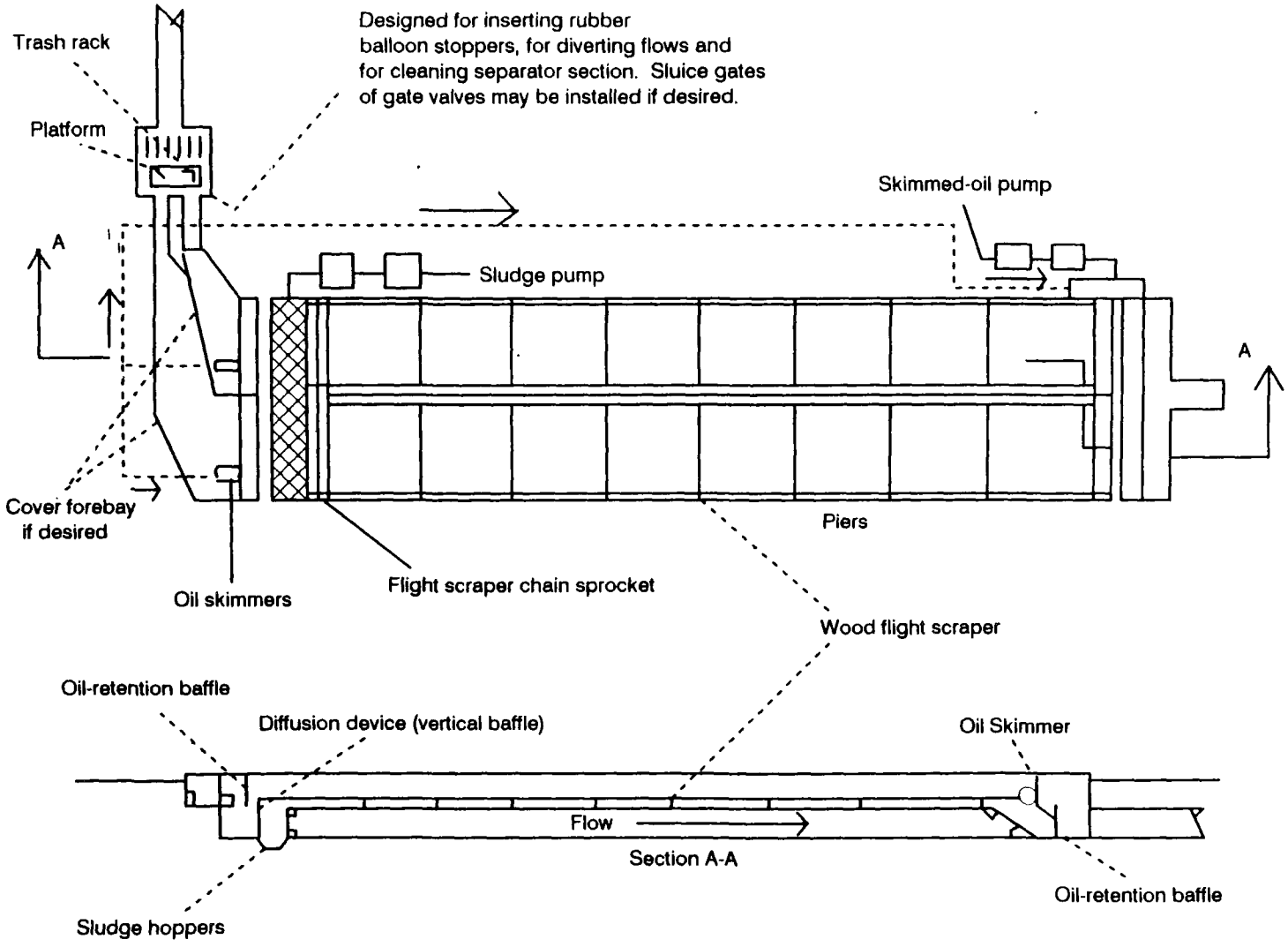


Figure 2-6. Gas Trap Manhole.



Note: This diagram is not to scale. A typical API separator is 15 feet wide by 60 feet long.

Figure 2-7. API Oil-Water Separator.

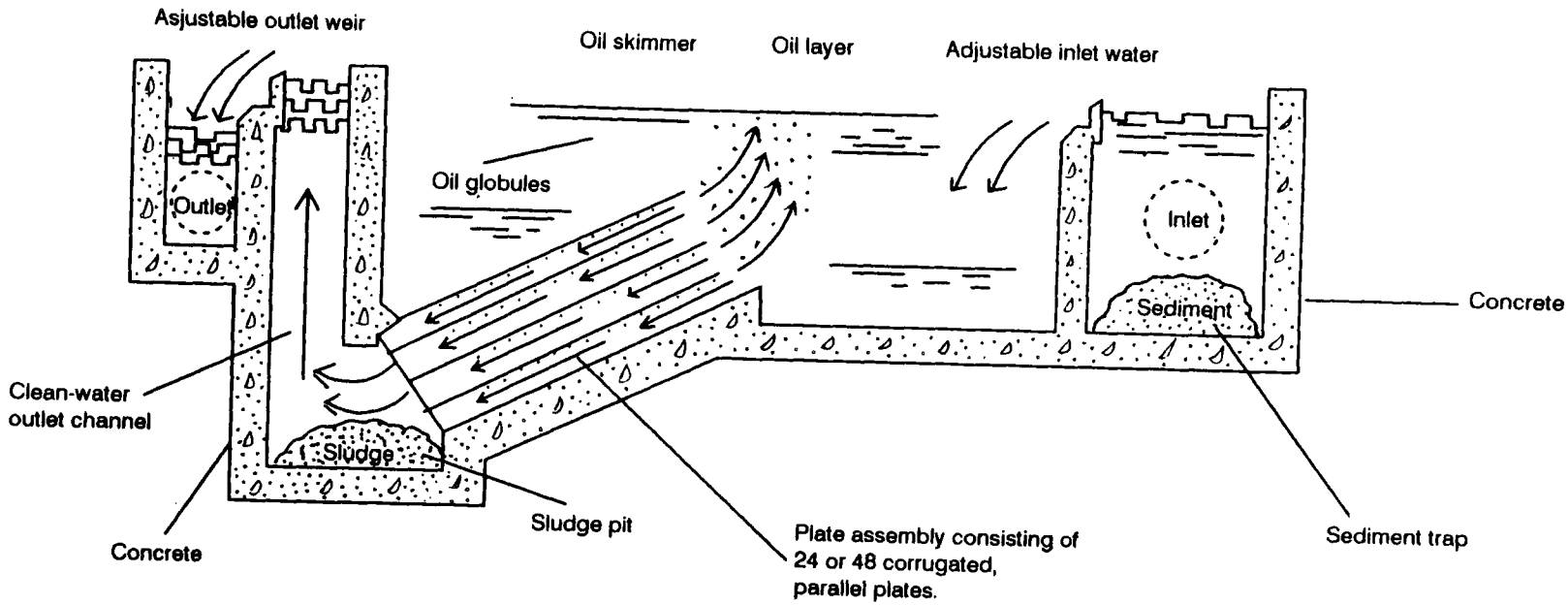


Figure 2-8. Corrugated Plate Interceptor (CPI).

corrugation where they coalesce. The oil droplets move up the plate to form a floating layer that is skimmed from the surface of the treatment tank.

2.2.2 Auxillary Equipment

Auxillary equipment associated with an oil-water separator can also be a source of emissions. Grit chambers, sludge hoppers, weirs, and slop oil storage vessels receive and/or store oily wastewater laden with VOCs. Any additional equipment located between the individual drain systems and the oil-water separator that receives and stores oily wastewater is also potential emission source. The NSPS requires emission controls for all of this equipment.

SECTION 3
EMISSION CONTROL TECHNIQUES

The standards of performance for refinery wastewater systems consist of a combination of equipment, work practice, and design and operational standards. The standards require emission control for individual drain systems and oil-water separators. Individual drain systems include process drains and junction boxes. The oil-water separator includes the separator and auxillary equipment. Emission control techniques for each emission source are discussed in this section.

3.1 Process Drains

An equipment standard with appropriate work practices will result in emission reductions from process drains. Water seal controls on drains have been found to result in up to a 50 percent reduction in VOC emissions. The water seal reduces emissions by limiting the effects of convection and diffusion on VOC in the wastewater. Water seals can be either P-legs or seal pots, as shown in Figure 2-3. Water seals will result in emission reductions only if the seals are properly maintained. Therefore, the equipment standard must be coupled with work practices to ensure maximum effectiveness.

A second method for controlling VOC emissions from process drains is to use a completely closed drain system. A closed drain was illustrated in Figure 2-3. Figure 3-1 shows a more detailed schematic of a closed system. The use of a closed drain system is generally limited to units handling extremely volatile compounds such as benzene, toluene, and xylene. The emission reduction achieved by a closed system can be as high as 95 percent, depending on the maintenance of the system and the efficiency of the control device.

3.2 Junction Boxes

The control of emissions from junction boxes can also be achieved by an equipment standard supported by appropriate work practices. The most feasible method of reducing emissions from a junction box is to install a tightly sealed cover. The cover reduces the exposure of the wastewater to the atmosphere, thereby minimizing the effects of diffusion and convection on the VOCs present in the waste stream.

Because of safety reasons, junction boxes need to be vented to the atmosphere. The design of the vent can effect VOC emissions. An evaluation of the effects of different size vent pipes resulted in the NSPS having requirements for maximum pipe diameters and minimum pipe lengths. The rates of molecular diffusion and convection are influenced by pipe design. Therefore, the design of the vent pipe can influence VOC emissions from a junction box.

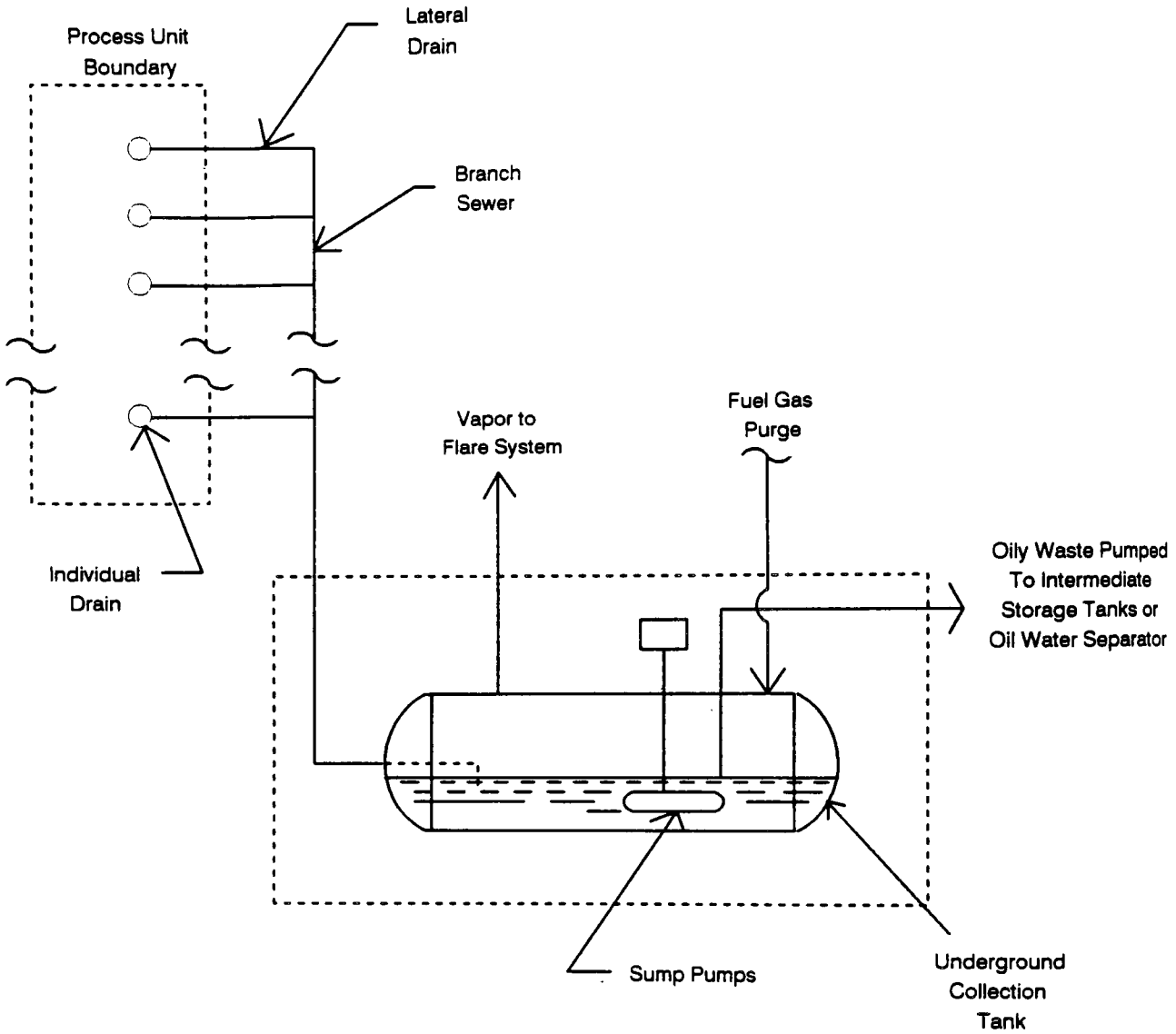


Figure 3-1. Closed Drain System.

3.3 Oil-Water Separators

The most effective way to reduce emissions from oil-water separators is to install a fixed or floating roof over the surface area of the separator. The cover reduces the effects of evaporation, wind speed, and solar radiation. Emission reductions from roofs can be greater than 85%.

Fixed roofs can be constructed of various materials. The roof can be mounted on the sides of the separator or supported by horizontal beams set in the sides of the tank. The space between the roof and the edge of the separator can be sealed with gaskets, along with the spaces around any access doors (see Figure 3-2).

The vapor space under a fixed roof may create a fire hazard or conditions resulting in an explosion. This problem can be eliminated by purging the space with an inert gas and venting the vapors to a recovery or destruction device. A fixed roof with vapors vented to a control device can greatly reduce VOC emissions.

Floating roofs actually float on the surface of the oil, thereby minimizing the vapor space above the wastewater. Floating roofs can be constructed of materials including plastic, glass foam blocks, aluminum pontoons, or fiberglass. Seals are placed between the roof and the wall of the separator to minimize VOC emissions. A primary seal consists of a foam or liquid-filled seal mounted in contact with the liquid between the floating roof and the wall of the separator. Figure 3-3 shows a diagram of a floating roof. Figure 3-4 shows primary and secondary seals on a floating roof. The effectiveness of the roofs in reducing emissions depends on various factors, the most important being maintenance of the seals around the roofs, doors, and other openings. The standard includes work practices to ensure optimal performance of the control.

3.4 Auxillary Equipment

Auxillary equipment associated with the oil-water separator can also be impacted by the standard. Any equipment that precedes the separator or handles and stores oily wastewater is subject to control. Examples of equipment that would warrant control include slop oil tanks, weirs and splitter boxes, forebays, grit chambers, or sludge hoppers. The most appropriate control for these types of equipment is a properly installed and maintained fixed roof.

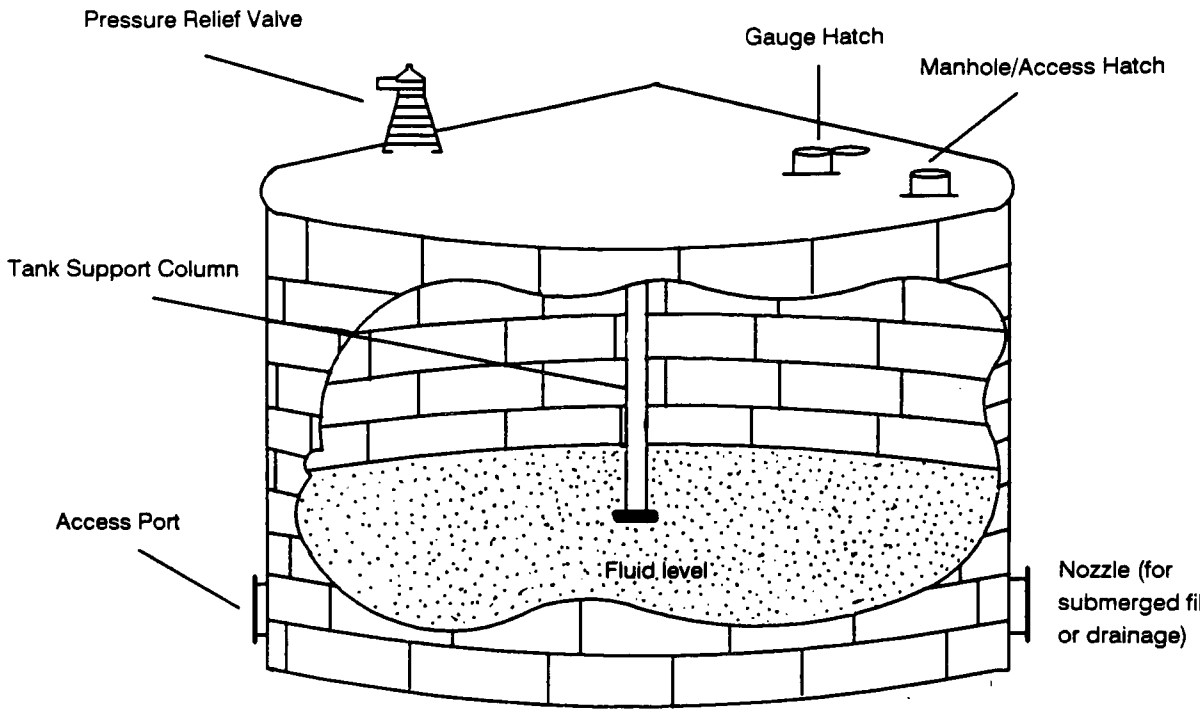
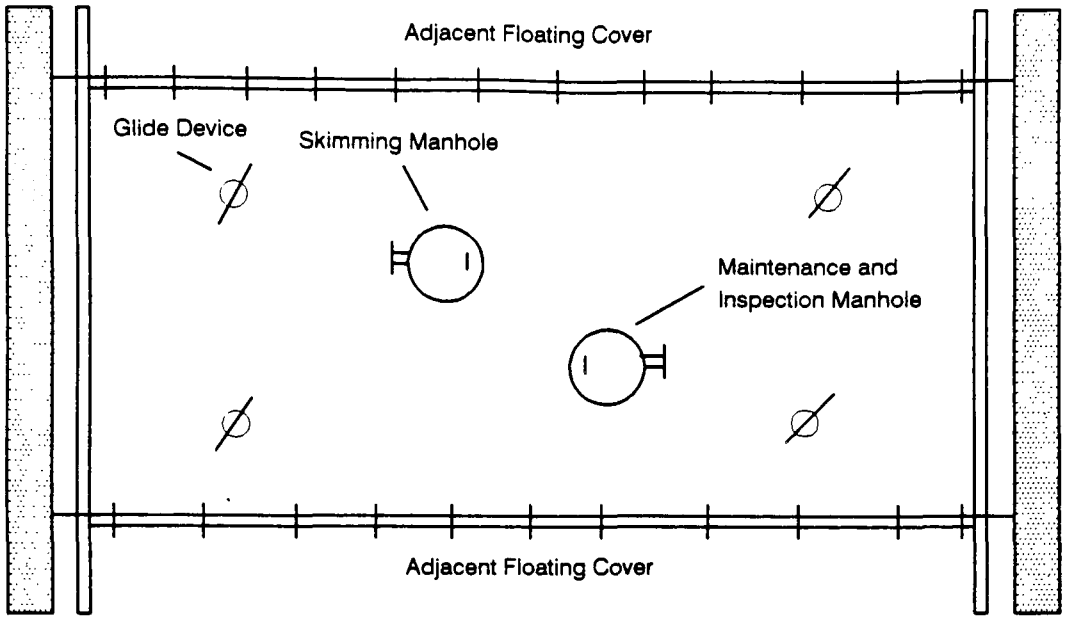


Figure 3-2. Typical fixed-roof tank (cross section).



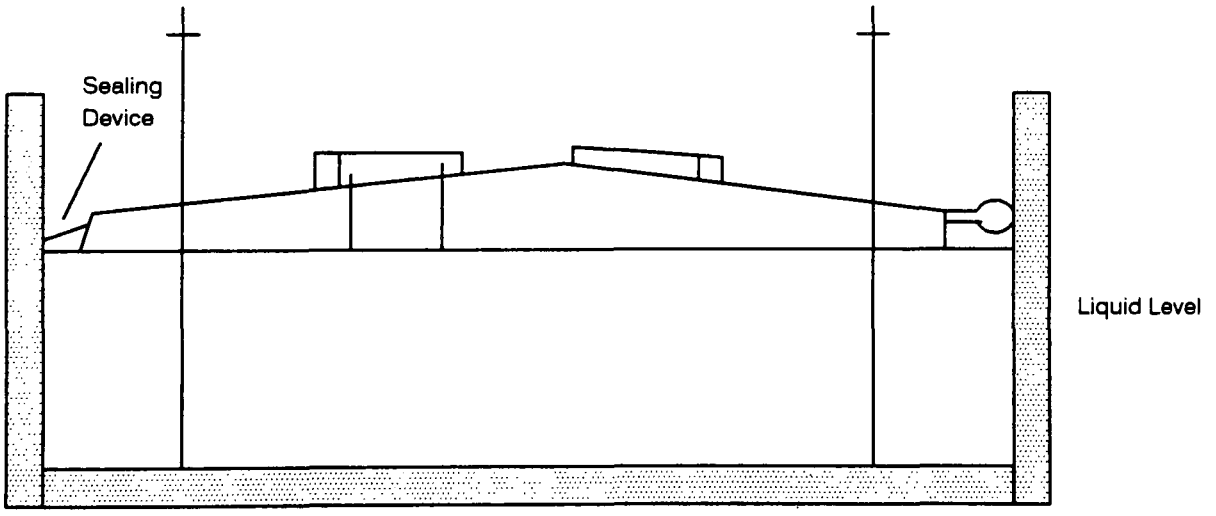


Figure 3-3. Floating Roof.

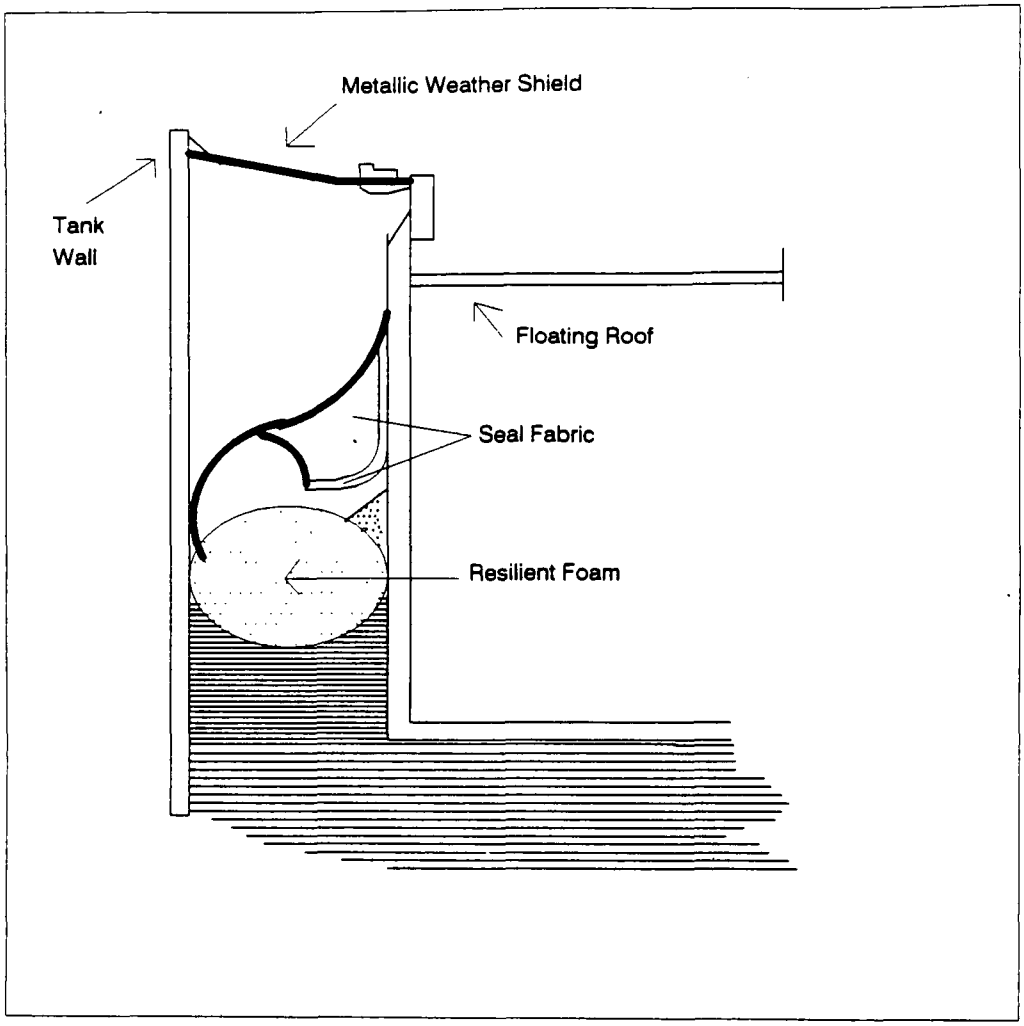


Figure 3-4. Primary and Secondary Seals.

SECTION 4
OVERVIEW OF THE STANDARD

This section provides an overview of Subpart QQQ. Each paragraph of the standard is discussed in general terms in order to present an understanding of the provisions and intent of the rule. The full text of Subpart QQQ appears in Appendix B.

§60.690 Applicability and designation of affected facility

The standards apply to any affected facility in a refinery for which construction, modification, or reconstruction began after May 4, 1987. Three separate affected facilities are identified by the standard, taking into account the complexity and interrelated nature of a refinery wastewater system. The three affected facilities are:

a. Individual Drain Systems - An individual drain system is defined as all process drains and sewer lines connected to the first common downstream junction box. It also includes sewer lines and other junction boxes down to the receiving oil-water separator. Figure 2-6 in Section 2 illustrates this definition.

b. Oil-Water Separators - Oil-water separator includes the separator along with any skimmers, basins, weirs, or sludge hoppers associated with the separator. Basically, all equipment that handles or treats oily wastewater up to and including the separator is included as the affected facility.

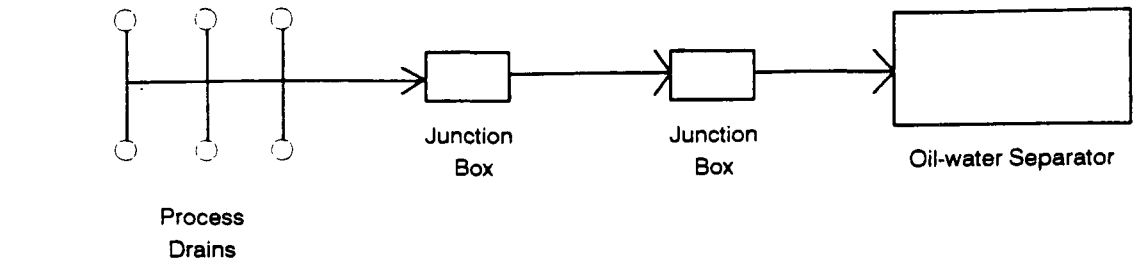
c. Aggregate Facility - An aggregate facility includes an individual drain system together with downstream sewer lines up to and including the oil-water separator. Figure 4-1 illustrates an aggregate facility. The purpose of including the aggregate facility as a separate affected facility is to control VOCs from all sources prior to and including the oil-water separator. This prevents VOC suppressed in one area of the system from being emitted from a downstream component and results in more effective control of emissions from the wastewater system.

§60.691 Definitions

This paragraph includes all definitions pertinent to the standard. Three definitions that deserve special attention are those for individual drain system, oil-water separator, and aggregate facility.

§60.692-1 Standards: General

Compliance with the standard is determined by the review of records and reports, and through visual inspections. The standards apply at all times except during startups, shutdowns, and malfunctions



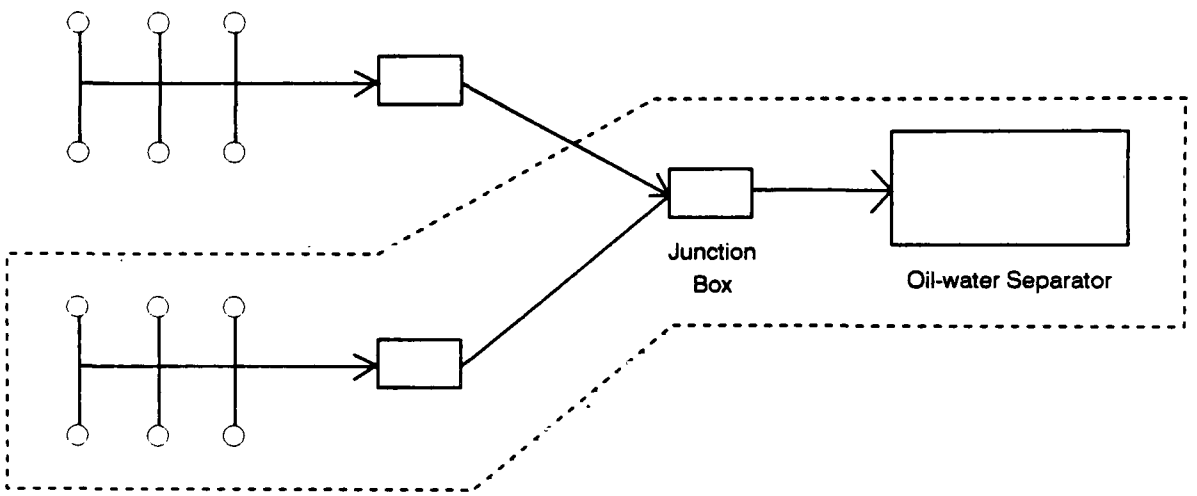


Figure 4-1. Aggregate facility.

within the process units. The standards do not apply to sewer systems that do not handle oily wastewater or to equipment that does not come into contact with oily wastewater.

§60.692-2 Standards: Individual Drain Systems

Emission controls for three specific components of an individual drain system are detailed in this paragraph. These components are process drains, junction boxes, and sewer lines.

a. Process Drains - The standard requires water seal controls on all drains. Initial and monthly inspections will be required for active drains initial and weekly inspections will be required for drains not in service. The frequency of inspection for out-of-service drains is greater because of the possibility of these drains losing their water seals through evaporation. Facilities can choose to seal or cap their out-of-service drains, with the inspection frequency reduced to once every 6 months. Drains that lose their water seal must be repaired as soon as practical, but not later than 24 hours after detection.

b. Junction Boxes - Junction boxes are required to be tightly sealed with a cover, except during inspection and maintenance. Junction boxes can be vented to the atmosphere, when the vent pipe is at least 3 feet in length and less than 4 inches in diameter. Inspections are required initially and every 6 months, and any repairs must be made within 15 days of the inspection if they are technically feasible.

c. Sewer Lines - The standard prohibits any sewer lines from being open to the atmosphere. For example, any new, modified, or reconstructed drain system will not be allowed to transport wastewater in an open trench or ditch. Any sewer lines that are above grade need to be inspected initially and every 6 months for any cracks or gaps in the joints and seals. Any repairs must be made within 15 days of the inspection.

This paragraph also allows an exception to the standard. If a modified or reconstructed individual drain system includes a catch basin in the configuration prior to the proposal date, the drain system is exempt from the provisions of this paragraph. A catch basin is an open basin that serves as a single collection point for storm water runoff. Figure 4-2 illustrates this scenario. New individual drain systems will not be allowed to be routed through an existing catch basin.

§60.692-3 Standards: Oil-Water Separators

The standard requires two levels of control for separators based on the amount of wastewater treated by the separator. This paragraph also applies to auxillary equipment preceding the separator that handles oily wastewater such as slop oil tanks and storage vessels.

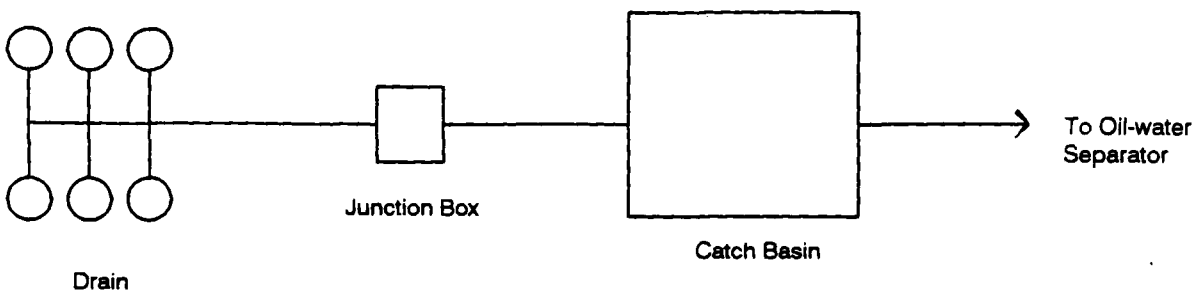


Figure 4-2. Drain system with catch basin.

New separators and auxiliary equipment that handle 250 gallons per minute or less of wastewater must be equipped with a fixed roof. The roof must be tightly sealed and inspected initially and every 6 months for any cracks, gaps, or other flaws that can result in increased emissions. Any repairs need to be made within 15 days of the inspection. The vapor space under the roof cannot be purged unless the purged gas is vented to a control device. A pressure relief valve will be allowed for safety or to allow proper operation, but the valve setting must be set at the maximum possible pressure. Continuous venting through the relief valve will result in unnecessary emissions.

New separators handling greater than 250 gallons per minute of wastewater must meet the same requirements of the small separators. In addition, vapors collected must be purged and vented to a control device. The requirements of the closed vent system are given in §60.692-5.

Special provisions are provided in the standard for modified and reconstructed separators. Modified or reconstructed separators that treat less than 600 gallons per minute of wastewater only have to be equipped and operated with a fixed roof, if the fixed roof was in place prior to proposal of the standard. If a fixed roof was not in place prior to proposal, the separators must comply with the provisions for new separators. Modified or reconstructed separators that treat 600 gallons per minute or more must comply with the requirement of a closed vent system, regardless whether a fixed roof was in place at proposal.

This paragraph also provides an exemption for any storage vessel that is impacted by the Subpart K, Ka, and Kb standards for storage tanks. These subparts require some storage tanks to be controlled for VOC emissions. The text of these subparts is given in Appendix C. In addition, slop oil storage and handling requirements are also specified in this paragraph.

§60.692-4 Standards: Aggregate Facility

The components of an aggregate facility must comply with the same requirements for individual drain systems and oil-water separators (§60.692-2 and §60.692-3). An aggregate facility is illustrated in Figure 4-1.

§60.692-5 Standards: Closed Vent Systems and Control Devices

Design and operational standards are specified for closed vent systems and their associated control devices. When vapors are purged and directed to a control device, a flow indicator must be installed to insure conveyance of the gas. All vapor recovery and combustion devices must be designed and operated to achieve a 95 percent recovery or destruction of the VOCs. As an alternative to the percent reduction standard, combustion devices can meet a design standard that requires a minimum residence time of 0.75 seconds at a minimum temperature of 816°C (1500°F). If flares are the control

device, the flares must meet the requirements of 40 CFR 60.18. These requirements can be found in Appendix A.

A closed vent system must remain gas tight during operation. Inspections of the system must be conducted initially and every 6 months to insure that the system is operating with no detectable emissions. No detectable emissions is defined as an instrument reading of less than 500 ppm. A portable VOC analyzer can be used to conduct the inspection. When emissions are detected, repair efforts must be initiated as soon as practical, but not later than 30 calendar days after detection.

§60.692-6 Standards: Delay of Repair

The standards for each affected facility call for prompt repair of any deficiencies discovered during the required inspections. However, this provision of the regulation allows repairs to be delayed if they cannot be accomplished without a complete or partial refinery or process unit shutdown. Repairs must occur before the end of the next refinery or process unit shutdown.

§60.692-7 Standards: Delay of Compliance

This paragraph allows for delays in compliance if it would result in full or partial shutdowns of the refinery or process unit. For example, a new individual drain system may result in the need for new controls on downstream equipment to meet compliance requirements for an aggregate facility. Emissions from downstream equipment would not have to be controlled immediately if a full or partial shutdown was needed to implement the controls.

§60.693-1 Alternative Standards for Individual Drain Systems

As an alternative to water seal controls, facilities may choose to install a completely closed drain system. The facility must notify the enforcement authority that such an alternative has been chosen. The closed vent system will be required to meet all of the requirements for closed systems.

§60.693-2 Alternative Standards for Oil-Water Separators

As an alternative to a fixed roof vented to a control device, facilities can choose to install floating roofs on oil-water separators. A properly installed and maintained floating roof has been shown to give equivalent emissions reductions compared to the fixed roof with a control device. Facilities must notify the enforcement authority if they choose to use this alternative.

The floating roof must have both a primary liquid mounted seal and secondary seal. Both seals must be measured for gaps between the seals and the separator wall within 60 days of installation. Gap inspections on the primary seal must be conducted at least every 5 years following the initial inspection, and gap inspections on the secondary seal must be conducted every year. In addition, any access

doors or other openings must be inspected initially and every 6 months to ensure that there is a tight fit and minimal chance for VOC emissions.

It may not be technically feasible to install a floating roof on all portions of an oil-water separator. If that is the case, fixed roofs will be allowed on portions of the separator where a floating roof is not appropriate.

Any repairs needed on a floating roof must be conducted within 30 days, unless they are not feasible as allowed by §60.692-6.

§60.694 Permission to Use Alternative Means of Emission Limitation

Facilities may propose alternative emission controls for any of the affected facilities impacted by this standard. If an alternative control is proposed, the facility must provide all of the information necessary to show that the alternative will achieve an emission reduction equivalent to the controls specified in the standard.

§60.695 Monitoring of Operations

Monitoring requirements consist of both inspections and continuous monitoring equipment for control devices such as flares and incinerators. Monitoring is essential to successful implementation of the standard.

§60.696 Performance Test Methods and Procedures and Compliance Provisions

Three types of compliance procedures are required by the standards. First, inspections are required for all control equipment. Second, measurements using Method 21 are required when closed vent systems are used. Finally, regular gap measurements are required of seals on floating roofs.

§60.697 Recordkeeping Requirements/§60.698 Reporting Requirements

These two paragraphs outline detailed recordkeeping and reporting requirements of the standard. Section 5 summarizes these requirements.

SECTION 5
DETAILED REQUIREMENTS OF THE STANDARD

This section presents a series of tables designed to simplify requirements of the regulation. The description of each table is given below, along with an explanation of how to best use each table in interpreting the standard.

Table 5-1. Affected Facilities and Facilities Exempt from the Standard in a Refinery Wastewater System

Each affected facility covered by the standard includes more than one specific piece of equipment. This table itemizes the equipment that is included in each affected facility, along with equipment that is exempt. Inspectors can use this information to clarify which equipment must be considered in complying with the standard.

Table 5-2. Applicability Checklist

This checklist provides a series of decisions for determining if the standard is applicable to a given facility. The checklist also helps to determine if a facility must meet the requirements for an aggregate facility, or just an individual drain system or oil-water separator.

The checklist progresses from general "yes" or "no" decisions applicable to all facilities, to specific decisions relative to each individually affected facility. For example, if the inspector is concerned only with a modified/reconstructed drain system in a refinery, he or she should refer to Sections I and III in the checklist. For an oil-water separator, one should refer to Sections I and IV. If miscellaneous changes were being made to a refinery wastewater system, one should refer to Sections I and V for the applicability of an aggregate facility. Table 5-2 also appears in Appendix F (Table F-1).

Table 5-3. Detailed Requirements for Individual Drain Systems

This table presents all the requirements needed for individual drain systems to comply with the standard. The table specifically addresses the requirements for process drains, junction boxes, and sewer lines. Included are the emission controls, monitoring and inspection intervals, and reporting and recordkeeping requirements. This table is also found in Appendix F (Table F-2), and provides a handy reference sheet for the inspector of a facility.

TABLE 5-1. AFFECTED FACILITIES AND FACILITIES EXEMPT FROM THE STANDARD IN A REFINERY WASTEWATER SYSTEM

AFFECTED FACILITY	EQUIPMENT INCLUDED IN AFFECTED FACILITY	FACILITIES EXEMPT FROM THE STANDARDS
Individual Drain System (IDS)	Process drains Junction boxes Manholes acting as junction boxes Lift Stations Sewer lines	Modified/reconstructed IDS that flow into a catch basin that existed prior to May 4, 1987 Drain systems that handle stormwater exclusively
Oil Water Separator	Oil-water separators Oil-water separator forebays Slop oil tanks receiving recovered oil Storage vessels receiving oily wastewater Weirs preceding the oil-water separator Splitter boxes preceding the oil-water separator Other equipment preceding the separator that transports, receives, or stores oily wastewater	Slop oil tanks and storage vessels already subject to Subpart K, Ka, and Kb standards Storage tanks, vessels, or auxillary equipment that do not come in contact with oily wastewater
Aggregate Affected Facility	All of the above	

TABLE 5-2. APPLICABILITY CHECKLIST

I. GENERAL

a. Construction, modification, or reconstruction of the refinery wastewater system commenced after May 4, 1987.

____ **Yes, the facility is subject to the NSPS, proceed to Sections II, III, IV and V.**
____ No, the facility is exempt from the NSPS, no further inspection is necessary.

II. NEW INDIVIDUAL DRAIN SYSTEMS (IDS)

a. The new individual drain system will handle wastewater containing hydrocarbons.

____ **Yes, the facility must meet the requirements of the standard for an aggregate facility, regardless of the capital expenditure.**
____ No, the drain system will handle only noncontact cooling water or stormwater and is exempt from the standard.

III. MODIFIED OR RECONSTRUCTED INDIVIDUAL DRAIN SYSTEMS (IDS)

a. The modified/reconstructed IDS drains directly into the main sewer system, and there is not an existing catch basin as part of the configuration of the existing drain system.

____ **Yes, go to III-b.**
____ No, there is a catch basin in the configuration that was present prior to May 4, 1987, the IDS is exempt from the standard.

b. The modified/reconstructed IDS results in an emission increase and a capital expenditure.

____ **Yes, the IDS is subject to the standard, go to III-c.**
____ No, the IDS is not an affected facility.

c. Emission increases created by the modified/reconstructed IDS can be offset elsewhere in the aggregate facility.

____ **Yes, only the IDS is subject to the standard.**
____ No, go to III-d.

d. The modification/reconstruction created an emission increase in the aggregate facility that cannot be offset.

____ **Yes, the aggregate facility is subject to the standard.**
____ No, emissions can be offset, only the IDS is an affected facility.

continued

TABLE 5-2. APPLICABILITY CHECKLIST (Concluded)

IV. OIL-WATER SEPARATORS

a. A new oil-water separator is constructed.

____ **Yes, the new separator is subject to the standard.**
____ No, the standard does not apply.

b. A new oil-water separator is added upstream of an existing separator resulting in a capital expenditure and an emission increase to the aggregate facility.

____ **Yes, the new separator and downstream components are subject to the standard.**[a]
____ No, the standard does not apply.

c. A physical or operational change to an existing oil-water separator results in an emission increase and capital expenditure.

____ **Yes, the separator is subject to the standard.**[b]
____ No, the standard does not apply.

d. Auxiliary equipment is added to the operation of the separator, and the equipment comes into contact with the oily wastewater.

____ **Yes, the equipment is subject to the standard.**
____ No, the standard does not apply.

V. AGGREGATE FACILITY

a. A physical or operational change is made in the aggregate facility that results in a capital expenditure and an emission increase.

____ **Yes, the aggregate facility is subject to the standard.**[a]
____ No.

[a]Slop oil facilities should not be considered in determining whether a capital expenditure is made on the aggregate facility.

[b]In determining whether an oil-water separator will be modified, the capital cost of the new components should be applied only to the actual oil-water separator treatment unit. Slop oil facilities should not be considered.

Table 5-4. Detailed Requirements for Oil-Water Separators

As with Table 5-3, this table provides a reference sheet for the inspector. The table itemizes all of the regulatory requirements for fixed roofs, floating roofs, and auxiliary equipment associated with an oil-water separator. This table is also included in Appendix F (Table F-3).

Table 5-5. Requirements for Closed Vent Systems

Additional regulatory requirements are specified for closed vent systems. The closed vent system could be associated with an oil-water separator having a fixed roof or a completely closed drain system. Table 5-5 itemizes the regulatory requirements for closed vent systems, and can also be found in Appendix F (Table F-4).

Table 5-6. Miscellaneous Requirements of the Standard

Table 5-6 summarizes reporting and recordkeeping requirements for modifications and facilities exempt from the standard. This table is included in Appendix F (Table F-5).

TABLE 5-3. DETAILED REQUIREMENTS FOR INDIVIDUAL DRAIN SYSTEMS

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
a. PROCESS DRAINS			
Required Control: Water seals.			
Alternative Control: Completely closed drain system/caps or sealed drains when out of service.			
Water seals (unit in service)	Initially Monthly	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Water seals (unit out of service)	Initially Weekly	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Location of out of service drains Design specifications
Caps/Seals (unit out of service)	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Location of out of service drains Design specifications
Closed System[b]	None	Notification to use closed drain system	None
Other control	None	Notification to use alternative control	None
		Demonstration of compliance	None

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]See Table 5-5 for requirements of recovery/destruction devices.

(Continued)

TABLE 5-3. DETAILED REQUIREMENTS FOR INDIVIDUAL DRAIN SYSTEMS (Concluded)

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
b. JUNCTION BOXES			
Required Control: Tightly sealed cover, vent at least 3 feet in length, diameter 4 inches or less - or length ≥3 feet, diameter ≤ 4 inches			
Alternative Control: Completely closed drain system			
Covers	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
c. SEWER LINES			
Required Control: Closed to the atmosphere, no open sewers.			
Alternative Control: Buried sewer.			
Covered sewer lines	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Buried sewer lines	None	None	Design specifications

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

TABLE 5-4. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
a. OIL-WATER SEPARATORS			
Required Control: New separators.			
<250 gpm (16 L/sec)	Fixed roof.		
≥250 gpm (16 L/sec)	Fixed roof, vapors vented to a control device.		
Required Control: Modified/reconstructed separators.			
<600 gpm (38 L/sec)	Fixed roof.		
≥600 gpm (38 L/sec)	Fixed roof, vapors vented to a control device.		
Alternative Control: Floating roof.			
Fixed roof	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Fixed roof vented to control[b]			

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]Same monitoring/inspection, reporting, and recordkeeping requirements for the fixed roof, plus additional requirements for the control device. See Table 5-5 for requirements of recovery/destruction devices.

TABLE 5-4. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS (Continued)

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
Floating roof	Gap measurements on seals within 60 days	Notification to use floating roof as control	Design specifications Location, date, corrective action Expected date of repair
	Gaps on primary seals every 5 years	None	None
	Gaps on secondary seals every year	None	None
Other control	None	Notification to use alternative control	None
	None	Demonstration of compliance	None

b. AUXILIARY EQUIPMENT, SLOP OIL TANKS

Required Control: New tanks and equipment.

<250 gpm (16 L/sec)	Fixed roof (pressure relief valve allowed).
≥250 gpm (16 L/sec)	Fixed roof, vapors vented to a control device.

Modified/reconstructed tanks and equipment.

<600 gpm (38 1/sec)	Fixed roof (pressure relief valve allowed).
≥600 gpm (38 1/sec)	Fixed roof, vapors vented to a control device.

(Continued)

aRecords must be maintained for two year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

TABLE 5-4. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS (Concluded)

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
Fixed roof	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Fixed roof vented to control[b]			
Other control		Notification to use alternative control Demonstration of compliance	

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]Same monitoring/inspection, reporting, and recordkeeping requirements for the fixed roof, plus additional requirements for the control device. See Table 5-5 for requirements of recovery/destruction devices.

TABLE 5-5. REQUIREMENTS FOR CLOSED VENT SYSTEMS

MONITORING/INSPECTION

1. Initial, semiannual inspections to ensure no detectable emissions as measured by Method 21.

2. Flow indicator to ensure flow to control device.

3. Control Devices

   a. Thermal and Catalytic incinerators
      continuous temperature recording device.

   b. Carbon Adsorber
      continuous monitoring device for measuring outlet VOC concentration, or inlet and outlet VOC concentration.

   c. Recovery devices other than a carbon adsorber
      date and monitoring information necessary to ensure compliance.

   d. Flare
      monitoring requirement of 40 CFR 60.18.

REPORTING

1. Notification to use recovery device other than a carbon adsorber.

2. Initial certification of equipment needed to comply with standard.

3. Initial performance test for flares.

4. Initial and semiannual inspection reports, including reports on abnormal operation of control devices.

5. Date of next shutdown if delay of compliance provisions apply.

RECORDKEEPING

1. Date, location, and corrective action for all repairs.

2. Expected date of repair if corrective action is delayed, with reason for delay.

3. Design specifications for all equipment used to comply with the standard.

4. Documentation of control device performance.

5. Continuous records of control device performance.

TABLE 5-6. MISCELLANEOUS REQUIREMENTS OF THE STANDARD

1. MODIFICATIONS

Reporting

The EPA Administrator must be notified prior to any modification of the refinery wastewater system.

2. STORMWATER SEWERS

Recordkeeping

The facility must keep records showing the location of any stormwater sewer. These records will be used to document exemptions to the requirements of individual drain systems, and to insure that wastewater from new drain systems does not flow into a stormwater sewer.

3. AUXILLARY EQUIPMENT

Recordkeeping

Plans and specifications for any equipment exempt from the standards must be kept to demonstrate that this equipment does not come into contact with oily wastewater.

4. NONCONTACT COOLING WATER

Recordkeeping

Plans and specifications for noncontract cooling water exempt from the standards must be kept to demonstrate that this water does not come into contact with oily wastewater or hydrocarbons.

SECTION 6
INSPECTION PROCEDURES

Compliance with the standard is to be determined by review of records and reports, review of performance tests, and inspections using the methods and procedures specified by the rule. As required by the rule, all of the inspections are to be carried out by the owner and operator with records of the inspections kept for a 2 year period. Therefore, compliance can be determined by the review of plant records, along with spot inspections to verify the operation, performance, and condition of the control equipment.

This section presents guidelines for conducting a compliance inspection. Compliance checklists for each affected facility are given, along with instructions for completing the checklists and conducting spot inspections.

6.1 Preparing for the Inspection

Prior to conducting an inspection, the inspector should search the EPA agency files and review all information related to the facility to be inspected. A review of the files will help the inspector to become familiar with the operation of the facility and the most recent compliance history. If prior inspections have been made of the refinery wastewater system, a review of the records will help the inspector prioritize areas of concern during the upcoming inspection.

The inspector must also review the regulation and be familiar with all compliance provisions. The tables in Section 5 (and in Appendix F) are provided to allow for a thorough and quick review of the provisions.

6.2 Notification

Since the primary means of determining compliance is the review of records and reports, it is prudent to notify the facility management prior to the inspection. This will allow the facility time to gather all relevant records and have them available for review. If possible, facilities should provide a map or flow diagram of the wastewater system to allow the inspector to plan for any spot checks of equipment and verify the records and reports.

6.3 Equipment and Materials

The inspection can be divided into two components. The first component is mandatory and consists of a thorough review of the records and reports kept by the plant. Appendix F has been prepared as a convenient way for the inspector to gather all checklists necessary to systematically review the records and reports. Copies of this appendix should be made for each inspection. The

The second component of the inspection is a visual inspection of the equipment subject to the standard. Although compliance with the standard can be determined through a review of records and reports, inspectors should conduct visual inspections to verify the information provided by the facility. Visual inspections will also verify the condition of the control equipment. The forms provided in Appendix F can be used to document observations made during the visual inspections.

During the visual inspection, the inspector may also choose to conduct performance tests and procedures to verify compliance. Reference Method 21 is to be used to test the integrity of a closed vent system. A complete description of Method 21 is given in Appendix E. A portable VOC analyzer will be needed to conduct the Method 21 procedures.

If a floating roof is used to control emissions from a separator, gap measurements are used to insure the roof is tightly sealed. Gap measurement instructions are also given in Appendix E and reproduced in Appendix F for the convenience of making copies. The inspector will need a set of uniform probes for measuring gaps if they choose to use this technique.

6.4 Conducting the Inspection

As mentioned above, the inspection consists of two components: (1) review of records, and (2) visual inspections. Both of these components will be discussed below.

6.4.1 Review of Records

Tables 6-1 to 6-3 are compliance checklists to be used in reviewing plant records and reports. Each checklist provides a concise list of statements to be answered with yes or no responses. A "yes" response to all statements in the checklist will indicate compliance with the standard. The inspector can use these checklists to systematically review all of the plant records and reports applicable to the rule.

There are a few statements in each checklist that can be answered "no" and the facility will still be in compliance. These statements deal with the length of time needed for repair of deficiencies. In some cases, refineries will not be able to make the necessary repairs in the time frame given by the rule. For example, repairs to water sealed drains must be made within 24 hours. If repairs to the drains are not made within 24 hours, statement 5 in Table 6-1 would be answered "no." However, as noted, refineries can delay repair when repairs are not feasible. If all the statements in the "GENERAL" section of the checklist are answered "yes," the facility would still be in compliance.

6.4.2 Visual Inspection

The tables also provide sections for visual inspections. In making visual inspections, the inspector should refer to plant drawings and specifications for all control equipment. Notations should be made if there are any discrepancies in the plant reports and records based on the visual inspection.

TABLE 6-1. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS

Complete this form for each individual drain system subject to the standard. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance, unless the response is related to repair provisions that allow for delays.

LOCATION OF INDIVIDUAL DRAIN SYSTEM_____
NUMBER OF DRAINS_____ NUMBER OF JUNCTION BOXES_____
SEWER LINES: BURIED _____ ABOVE GROUND ____ PARTIALLY BURIED/ABOVE GROUND _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the drain system is available, including all control equipment for drains, junction boxes, and sewer lines.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no

IF THE DRAIN SYSTEM IS ACTIVE

3.	Water sealed drains were inspected when the unit was placed in service. Date of initial inspection _____.	yes	no
4.	Water sealed drains are inspected monthly. Date of last monthly inspection _____.	yes	no
5.	All repairs on water sealed drains were made immediately, or no later than 24 hours after detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no
6.	All junction boxes are equipped with tight fitting covers.	yes	no
7.	The junction boxes were inspected when they were put in service. Date of initial inspection _____	yes	no
8.	Junction boxes are inspected every 6 months. Date of last semiannual inspection _____	yes	no
9.	Broken seals and gaps were repaired within 15 days of detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no

Continued

TABLE 6-1. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS

10.	All sewer lines are tightly covered.	yes	no
11.	The sewer lines were inspected when they were put in service. Date of initial inspection _____.	yes	no
12.	Cracks, gaps, and other problems in the sewer line were repaired within 15 days of detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no
13.	Covered sewer lines are inspected every 6 months. Date of last semiannual inspection _____.	yes	no
IF ANY PART OF THE DRAIN SYSTEM IS INACTIVE			
14.	Water sealed drains were inspected when they were taken out of service. Date drains were taken out of service _____.	yes	no
15.	Water sealed drains are inspected weekly. Date of last weekly inspection _____	yes	no
16.	All drains that are capped or sealed were inspected following initial installation of the caps or seals. Date when installation was complete _____.	yes	no
17.	All drains that are capped or sealed are inspected every 6 months. Date of last semiannual inspection _____.	yes	no
GENERAL			
18.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
19.	When repairs were not made immediately, the expected date of repair was noted.	yes	no
20.	All reported deficiencies have been repaired or are scheduled for repair.	yes	no
B. VISUAL INSPECTION			
1.	Water seals present on all drains.	yes	no
2.	Caps/seals on inactive drains are in place and tightly fitting.	yes	no

Continued

TABLE 6-1. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS (Concluded)

3.	Covers on junction boxes are tight and have no visible gaps or openings.	yes	no
4.	Vents on junction boxes are at least 3 feet in length with a diameter of 4 inches or less.	yes	no
5.	Joints and connections on sewer lines have no visible gaps, cracks, or openings.	yes	no
6.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

TABLE 6-2. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS

Complete this form for each oil-water separator subject to the standard. This form is applicable only if fixed or floating roofs are the control technique used for compliance. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance, unless the response is related to repair provisions that allow for delays.

LOCATION OF OIL-WATER SEPARATOR _____
DESIGN CAPACITY _____ FIXED ROOF _____ FLOATING ROOF _____
AUXILIARY EQUIPMENT SUBJECT TO THE STANDARD _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the separator and control equipment is available.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no

IF THE CONTROL IS A FIXED ROOF OR A FLOATING ROOF

3.	The roof was inspected and certified when the separator was placed in service. Date of initial inspection _____.	yes	no
4.	The roof is inspected every 6 months. Date of last semiannual inspection _____.	yes	no
5.	All repairs were made within 15 days of detection. (if "no" see GENERAL category below for delay or repair compliance)	yes	no
6.	All auxiliary equipment subject to the standard is equipped with tight fitting covers.	yes	no
7.	The auxiliary equipment was inspected and control equipment certified when initially placed in service. Date of initial inspection _____.	yes	no
8.	Auxiliary equipment is inspected every 6 months. Date of last semiannual inspection _____.	yes	no
9.	Pressure relief valves (if present) on auxiliary equipment are set at maximum release pressure.	yes	no

Continued

TABLE 6-2. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS

IF THE CONTROL IS A FLOATING ROOF

10.	The EPA was notified that a floating roof was being installed.	yes	no
11.	Measurement of primary gap seals was conducted within 60 days of installation. Date of measurement _____.	yes	no
12.	Measurement of primary gap seal is conducted every 5 years. Date of last inspection _____.	yes	no
13.	Measurement of secondary gap seals was conducted within 60 days of installation. Date of last measurement _____.	yes	no
14.	Measurement of secondary gap seal is conducted every year. Date of last measurement _____.	yes	no
15.	All doors and openings were inspected when the roof was installed. Date of initial inspection _____	yes	no
16.	All doors and openings are inspected every 6 months. Date of last semiannual inspection _____.	yes	no

GENERAL

17.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
18.	When repairs were not made immediately, the expected date of repair was noted.	yes	no
19.	All reported deficiencies have been repaired or are scheduled for repair.	yes	no

B. VISUAL INSPECTION

FIXED ROOFS ON SEPARATORS AND AUXILIARY EQUIPMENT, FOR EACH SEPARATOR OR AUXILIARY EQUIPMENT

1.	The roof fit tightly with no visible gaps, cracks, or openings.	yes	no
2.	All access doors and openings were sealed properly.	yes	no

Continued

TABLE 6-2. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS (Concluded)

3.	Pressure relief valves are set at maximum pressures.	yes	no
4.	Visual inspection of facility is consistent with written records.	yes	no
FLOATING ROOFS			
5.	All access doors and openings were sealed properly.	yes	no
6.	The gap width between the primary seal and the separator wall was acceptable using gap measuring methods specified in the rule.[a]	yes	no
7.	The total gap area between the primary seal and the separator wall was acceptable uisng gap measuring methods specified in the rule.	yes	no
8.	The gap width between the secondary seal and the separator wall was acceptable using gap measuring methods specified in the rule.	yes	no
9.	The total gap area between the secondary seal and the separator wall was acceptable using gap measuring methods specified in the rule.	yes	no
10.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

[a]Procedure and worksheet for gap measurement is given in Appendix F.

TABLE 6-3. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

Complete this form when a closed vent system is used to comply with the standard for an individual drain system or oil-water separator. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance.

CLOSED VENT SYSTEM FOR: _____ OIL-WATER SEPARATOR
_____ INDIVIDUAL DRAIN SYSTEM
DESTRUCTION OR RECOVERY DEVICE _____
DATE OF STARTUP _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the closed vent system is available.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no
IF A CLOSED VENT SYSTEM IS USED FOR A DRAIN SYSTEM			
3.	The EPA was notified that a closed drain system was being installed.	yes	no
IF THE CONTROL DEVICE IS A FLARE			
4.	A report of the initial performance test was submitted within 60 days of the intial startup.	yes	no
5.	The presence of a flare pilot flame is monitored using a thermocouple or other device designed to detect the presence of a flare.	yes	no
6.	All periods when the flare pilot did not have a flame have been recorded, with records kept for 2 years.	yes	no
7.	The flare meets all other operational and monitoring requirements of 40 CFR 60.18.	yes	no
IF THE CONTROL DEVICE IS A THERMAL INCINERATOR			
8.	A temperature monitoring device equipped with a continuous monitor is used to measure the temperature of the gas stream in the combustion zone. (accuracy of 1% of the temperature measured in ^{o}C or $\pm$ 0.5°C [$\pm$ 1.0°F] whichever is greater).	yes	no

Continued

TABLE 6-3. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

9.	Documentation exists demonstrating 95% control efficiency [or #10].	yes	no
10.	Documentation exists demonstrating minimum residence time of 0.75 seconds and minimum temperature of 816°C (1500°F).	yes	no
11.	A description of operating parameters used to determine compliance is available.	yes	no
12.	Continuous records of temperature of the gas stream in the combustion zone of the incinerator are kept for 2 year periods.	yes	no
13.	Records are kept for all 3-hour periods when the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature.	yes	no
14.	All other periods of operation not in conformation with design criteria are recorded.	yes	no
IF THE CONTROL DEVICE IS A CATALYTIC INCINERATOR			
15.	Temperature monitoring devices equipped with continuous recorders are used to measure the temperature in the gas stream immediately before and after the catalyst bed (accuracy of 1% of the temperature measured in °C or ± 0.5°C [± 1.0°F] whichever is greater).		
16.	Documentation exists demonstrating 95% control efficiency [or #17].	yes	no
17.	Documentation exists demonstrating minimum residence time of 0.75 seconds and minimum temperature of 816°C (1500°F).	yes	no
18.	A description of operating parameters used to determine compliance is available.	yes	no
19.	All periods of operation not in conformance with design criteria are recorded.	yes	no
20.	Continuous records are kept of the temperature of the gas stream upstream and downstream of the catalyst bed.	yes	no
21.	Records are kept for all 3-hour periods during which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the design gas stream temperature.	yes	no

Continued

TABLE 6-3. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

22.	Records are kept for all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80% of the design temperature difference.	yes	no
23.	All periods of operation not in conformance with design criteria are recorded.	yes	no
IF THE VAPOR RECOVERY DEVICE IS A CARBON ADSORBER			
24.	A monitoring device is used that continually indicates and records the VOC concentration or reading of organics in the exhaust gas of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
25.	Documentation exists demonstrating 95% control efficiency.	yes	no
26.	A description of operating parameters used to determine compliance is available.	yes	no
27.	All periods of operation not in conformance with desing criteria are recorded.	yes	no
28.	Continuous records are kept of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
29.	Records are kept for all 3-hour periods during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream is more than 20% greater than the design exhaust gas concentration level.	yes	no
30.	All other periods of operation not in conformance with design criteria are recorded.	yes	no
IF THE VAPOR RECOVERY DEVICE IS NOT A CARBON ADSORBER			
31.	The EPA was notified that a recovery device other than a carbon was being used.	yes	no
32.	A monitoring device is used that continually indicates and records the VOC concentration or reading of organics in the exhaust gas of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
33.	Documentation exists demonstrating 95% control efficiency.	yes	no
34.	A description of operating parameters used to determine compliance is available.	yes	no

Continued

TABLE 6-3. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

35.	Continuous records are kept of operating parameters needed to determine compliance.	yes	no
36.	All periods of operation not in conformance with design criteria are recorded.	yes	no
GENERAL			
37.	A flow indicator is present on the vent stream to the control device.	yes	no
38.	Documentation exists describing the gas stream entering the control device, including flow and VOC content under static and dynamic liquid level conditions.	yes	no
39.	Manufacturers design specifications for the control device are available.	yes	no
40.	The closed vent system was inspected initially and found to be operating with no detectable emissions (<500 ppm above background) Date of initial inspection _____.	yes	no
41.	The closed vent system is inspected every 6 months to ensure operation with no detectable emissions. Date of last semiannual inspection _____.	yes	no
42.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
43.	The location, date, and corrective action was noted when detectable emissions were measured during any inspection.	yes	no
44.	When repairs were not made immediately, the expected date of repair was noted and was within 30 days of the reported deficiency.	yes	no
45.	All reported deficiencies were repaired within 30 days or are scheduled for repair within 30 days of the initial report.	yes	no
B. VISUAL INSPECTION			
1.	A flow indicator is present on the vent stream to the control device.	yes	no
2.	For flares, a device for detecting the flame is present.	yes	no
3.	For incinerators, a temperature monitoring device in present.	yes	no

Continued

TABLE 6-3. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS (Concluded)

4.	For carbon adsorbers, a device for measuring VOC content is present.	yes	no
5.	The closed vent system has no detectable emissions.[a]	yes	no
6.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

[a]Procedure for measuring detectable emissions is given in Appendix F

Visual inspections will include drain systems, oil-water separators, and closed vent systems. Considerations for inspecting each facility are given below.

Drain Systems

Acquisition of plant drawings and design specifications will be essential for the visual inspection of a drain system. In some cases, an individual drain system will include numerous process drains, many of which will be inaccessible. This will make the confirmation of the presence of water seals difficult. When possible, visual inspection of a drain using a flashlight can confirm the presence of a seal. In other cases, observing water drainage into a drain will insure a seal is present. When visual inspection is not possible, the inspector will have to rely on the accuracy of plant drawings.

Junction boxes, sealed drains, and above ground sewer lines can all be inspected visually. The inspector should look for any cracks, gaps, worn gaskets, or other deficiencies that can result in increased emissions. The vent pipes on all junction boxes can be measured simply using a tape measure.

Oil-Water Separators

Separators using a floating roof for emission control can be visually inspected for gaps, cracks, and other openings. In addition, the inspector may choose to measure all of the gaps in the primary and secondary seals to insure compliance. The gap measurement instructions are given in Appendix F

Oil-water separators having fixed roofs with vapors vented to a control device can be inspected visually and by using Reference Method 21 for measuring detectable emissions. The visual inspection should include checks of all seals, doors, and joints. Auxiliary equipment should also be inspected if it is part of the affected facility.

Closed Vent Systems

Method 21 can be used to check the integrity of the closed vent system. The closed vent system should not have any detectable emissions as determined by an instrument reading of a portable analyzer. Before using Method 21, the inspector should be carefully review the procedures given in Appendix E.

Visual inspections should also be made of all control device instrumentation. The checklists contain all of the instrumentation that should be included for each type of control. The inspector should verify the plant records with actual observation of all monitoring instruments.

APPENDIX A
General Provisions of 40 CFR 60

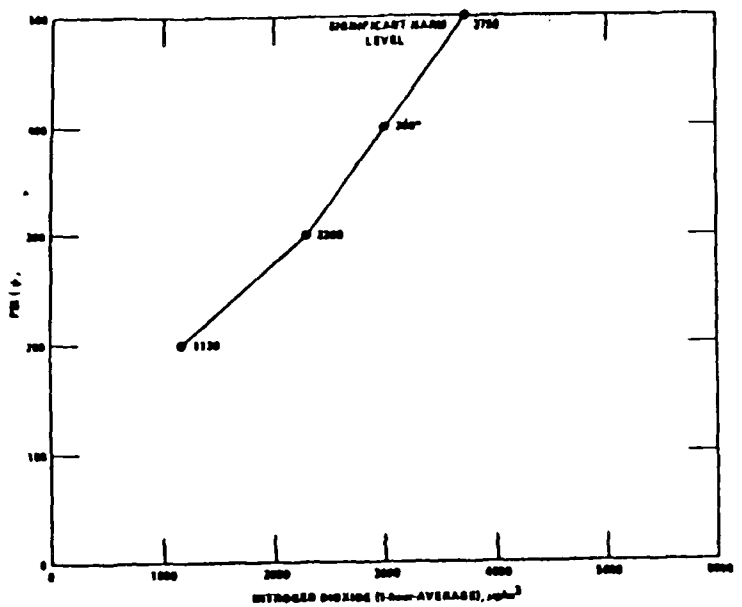


Figure 5. PSI function for nitrogen dioxide.

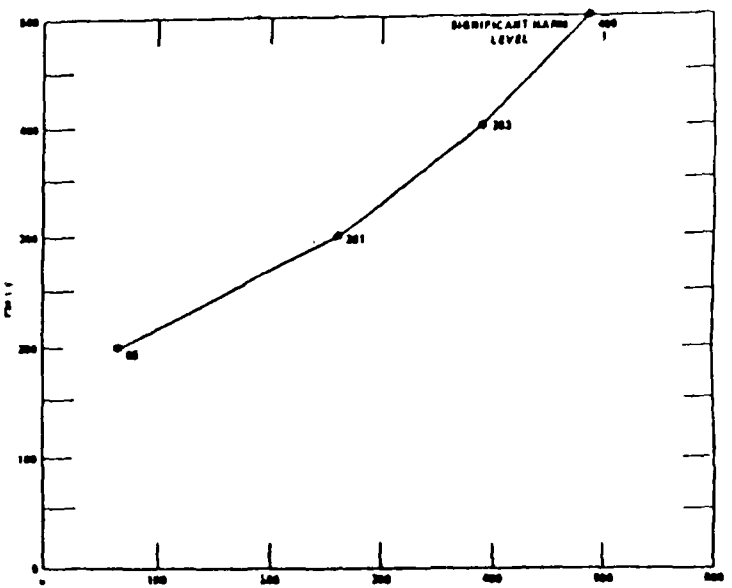


Figure 6. PSI function for product of total suspended particulate and sulfur dioxide.

(44 FR 27571, May 10, 1979; 44 FR 65070, Nov. 9, 1979; 44 FR 72592, Dec. 14, 1979, as amended at 51 FR 95600, Mar. 19, 1986; 52 FR 24749, 24750, July 1, 1987)

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart A—General Provisions

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

A-3

Sec

Authority: 42 U.S.C. 7401, 7411, 7414, 7416, and 7601.

Source: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart A—General Provisions

§ 60.1 Applicability.

Except as provided in Subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

[40 FR 53346, Nov. 17, 1975]

§ 60.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 1857 *et seq.*, as amended by Pub. L. 91-604, 84 Stat. 1676).

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

Capital expenditure means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Commenced means, with respect to the definition of *new source* in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Construction means fabrication, erection, or installation of an affected facility.

Continuous monitoring system means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

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

Existing facility means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

Isokinetic sampling means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

Malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

Monitoring device means the total equipment, required under the monitoring of operations sections in applicable subparts, used to measure and record (if applicable) process parameters.

Nitrogen oxides means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

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

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

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

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

Proportional sampling means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

Reference method means any method of sampling and analyzing for an air pollutant as specified in the applicable subpart.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Shutdown means the cessation of operation of an affected facility for any purpose.

Six-minute period means any one of the 10 equal parts of a one-hour period.

Standard means a standard of performance proposed or promulgated under this part.

Standard conditions means a temperature of 293 K (68°F) and a pressure of 101.3 kilopascals (29.92 in Hg).

Startup means the setting in operation of an affected facility for any purpose.

Volatile Organic Compound means any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any subpart.

[44 FR 55173, Sept. 25, 1979, as amended at 45 FR 5617, Jan. 23, 1980; 45 FR 85415, Dec. 24, 1980; 54 FR 6662, Feb. 14, 1989]

§ 60.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A—ampere
g—gram
Hz—hertz
J—joule
K—degree Kelvin
kg—kilogram
m—meter
m^3—cubic meter
mg—milligram—10^{-3} gram
mm—millimeter—10^{-3} meter
Mg—megagram—10^6 gram
mol—mole
N—newton
ng—nanogram—10^{-9} gram
nm—nanometer—10^{-9} meter
Pa—pascal
s—second
V—volt
W—watt
Ω—ohm
μg—microgram—10^{-6} gram

(b) Other units of measure:

Btu—British thermal unit
°C—degree Celsius (centigrade)
cal—calorie
cfm—cubic feet per minute
cu ft—cubic feet
dcf—dry cubic feet
dcm—dry cubic meter
dscf—dry cubic feet at standard conditions
dscm—dry cubic meter at standard conditions
eq—equivalent
°F—degree Fahrenheit
ft—feet
gal—gallon
gr—grain
g-eq—gram equivalent
hr—hour
in—inch
k—1,000
l—liter
lpm—liter per minute
lb—pound
meq—milliequivalent
min—minute
ml—milliliter
mol. wt.—molecular weight
ppb—parts per billion
ppm—parts per million
psia—pounds per square inch absolute
psig—pounds per square inch gage
°R—degree Rankine
scf—cubic feet at standard conditions
scfh—cubic feet per hour at standard conditions
scm—cubic meter at standard conditions
sec—second
sq ft—square feet
std—at standard conditions

(c) Chemical nomenclature:

CdS—cadmium sulfide
CO—carbon monoxide
CO_2—carbon dioxide
HCl—hydrochloric acid
Hg—mercury
H_2O—water
H_2S—hydrogen sulfide
H_2SO_4—sulfuric acid
N_2—nitrogen
NO—nitric oxide
NO_2—nitrogen dioxide
NO_x—nitrogen oxides
O_2—oxygen
SO_2—sulfur dioxide
SO_3—sulfur trioxide
SO_x—sulfur oxides

(d) Miscellaneous:

A S T M —American Society for Testing and Materials

[42 FR 37000, July 19, 1977; 42 FR 38178, July 27, 1977]

§ 60.4 Address.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Air Management Division, U.S. Environmental Protection Agency, John F. Kennedy Federal Building, Boston, MA 02203.

Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278.

Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Curtis Building, Sixth and Walnut Streets, Philadelphia, PA 19106.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 345 Courtland Street, NE., Atlanta, GA 30365.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air Management Division, U.S. Environmental Protection Agency, 230 South Dearborn Street, Chicago, IL 60604.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Air, Pesticides, and Toxics Division; U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Toxics Division, U.S. Environmental Protection Agency, 726 Minnesota Avenue, Kansas City, KS 66101.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 1860 Lincoln Street, Denver, CO 80295.

Region IX (American Samoa, Arizona, California, Guam, Hawaii, Nevada), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105

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

(b) Section 111(c) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards of performance for new stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided, that each specific delegation may except sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) [Reserved]

(B) State of Alabama, Air Pollution Control Division, Air Pollution Control Commission, 645 S. McDonough Street, Montgomery, AL 36104.

(C) State of Alaska, Department of Environmental Conservation, Pouch O, Juneau, AK 99811.

(D) Arizona:

Arizona Department of Health Services, 1740 West Adams Street, Phoenix, AZ 85007.

Maricopa County Department of Health Services, Bureau of Air Pollution Control, 1825 East Roosevelt Street, Phoenix, AZ 85006.

Pima County Health Department, Air Quality Control District, 151 West Congress, Tucson, AZ 85701.

Pima County Air Pollution Control District, 151 West Congress Street, Tucson, AZ 85701.

(1) The following table lists the specific source and pollutant categories that have been delegated to the air pollution control agencies in Arizona. A star (*) is used to indicate each category that has been delegated.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR ARIZONA

* Indicates delegation

POLLUTANT CATEGORY	AIR POLLUTION CONTROL AGENCY			
	Pima	Maricopa	Arizona	
A				General Provisions
D	*	*	*	Fossil Fuel Fired Steam Generating Units Constructed After 8/17/71
Da	*	*		Electric Utility Steam Generating Units Constructed After 9/18/78
E	*	*	*	Incinerators
F	*	*	*	Portland Cement Plants
G	*	*	*	Nitric Acid Plants
H	*	*	*	Sulfuric Acid Plants
I	*	*	*	Asphalt Concrete Plants
J	*	*	*	Petroleum Refineries
K	*	*	*	Storage Vessels for Petroleum Liquids Constructed After 6/11/73 Prior to 5/19/78
Ka	*	*		Storage Vessels For Petroleum Liquids Constructed After 5/18/78
L	*	*	*	Secondary Lead Smelters
M	*	*	*	Secondary Brass And Bronze Ingot Production
N	*	*	*	Iron And Steel Plants
O	*	*	*	Sewage Treatment Plants
P	*	*	*	Primary Copper Smelters
Q	*	*	*	Primary Zinc Smelters
R	*	*	*	Primary Lead Smelters
S	*	*	*	Primary Aluminum Reduction Plants
T	*	*	*	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants
U	*	*	*	Phosphate Fertilizer Industry: Super Phosphoric Acid Plants
V	*	*	*	Phosphate Fertilizer Industry: Diammonium Phosphate Plant
W	*	*	*	Phosphate Fertilizer Industry: Triple Super Phosphate Plant
X	*	*	*	Phosphate Fertilizer Industry: Granular Triple Super Phosphate Storage Facilities
Y	*	*	*	Coal Preparation Plants
Z	*	*	*	Ferroalloy Production Facilities

AIR POLLUTION CONTROL AGENCY	DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR NEVADA											NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)					
	Steel Plants: Electric Arc Furnaces	Kraft Pulp Mills	Glass Manufacturing Plants	Grain Elevators	Stationary Gas Turbines	Lime Manufacturing Plants	Lead - Acid Battery Manufacturing Plants	Automobile & Light Duty Surface Coating Operations	Phosphate Rock Plants	Ammonium Sulfate Manufacturing	General Provisions	Asbestos	Beryllium	Beryllium Rocket Motor Firing	Mercury	Vinyl Chloride
POLLUTANT CATEGORY	AA	BB	CC	DD	GG	HH	KK	MM	NN	PP	A	B	C	D	E	F
NEVADA	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•
Clark				•	•	•		•			•	•	•	•	•	•
Washoe												•	•		•	

• indicates delegation

(E) State of Arkansas: Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, AR 72209.

(F) California:

Amador County Air Pollution Control District, P.O. Box 430, 810 Court Street, Jackson, CA 95642

Bay Area Air Pollution Control District, 939 Ellis Street, San Francisco, CA 94109.

Butte County Air Pollution Control District, P.O. Box 1229, 316 Nelson Avenue, Oroville, CA 95965

Calaveras County Air Pollution Control District, Government Center, El Dorado Road, San Andreas, CA 95249

Colusa County Air Pollution Control District, 751 Fremont Street, Colusa, CA 95932

El Dorado Air Pollution Control District, 330 Fair Lane, Placerville, CA 95667

Fresno County Air Pollution Control District, 1221 Fulton Mall, Fresno, CA 93721

Glenn County Air Pollution Control District, P.O. Box 351, 720 North Colusa Street, Willows, CA 95988

Great Basin Unified Air Pollution Control District, 157 Short Street, Suite 6, Bishop, CA 93514

Imperial County Air Pollution Control District, County Services Building, 939 West Main Street, El Centro, CA 92243

Kern County Air Pollution Control District, 1601 H Street, Suite 250, Bakersfield, CA 93301

Kings County Air Pollution Control District, 330 Campus Drive, Hanford, CA 93230

Lake County Air Pollution Control District, 255 North Forbes Street, Lakeport, CA 95453

Lassen County Air Pollution Control District, 175 Russell Avenue, Susanville, CA 96130

Madera County Air Pollution Control District, 135 W. Yosemite Avenue, Madera, CA 93637.

Mariposa County Air Pollution Control District, Box 5, Mariposa, CA 95338

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 95482.

Merced County Air Pollution Control District, P.O. Box 471, 240 East 15th Street, Merced, CA 95340

Modoc County Air Pollution Control District, 202 West 4th Street, Alturas, CA 96101

Monterey Bay Unified Air Pollution Control, 1164 Monroe Street, Suite 10, Salinas, CA 93906

Nevada County Air Pollution Control District, H.E.W. Complex, Nevada City, CA 95959

North Coast Unified Air Quality Management District, 5630 South Broadway, Eureka, CA 95501

Northern Sonoma County Air Pollution Control District, 134 "A" Avenue, Auburn, CA 95448

Placer County Air Pollution Control District, 11491 "B" Avenue, Auburn, CA 95603

Plumas County Air Pollution Control District, P.O. Box 480, Quincy, CA 95971

Sacramento County Air Pollution Control District, 3701 Branch Center Road, Sacramento, CA 95827.

San Bernardino County Air Pollution Control District, 15879-8th, Victorville, CA 92392

San Diego County Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123.

San Joaquin County Air Pollution Control District, 1601 E. Hazelton Street (P.O. Box 2009) Stockton, CA 95201.

San Luis Obispo County Air Pollution Control District, P.O. Box 637, San Luis Obispo, CA 93406

Santa Barbara County Air Pollution Control District, 315 Camino del Rimedio, Santa Barbara, CA 93110

Shasta County Air Pollution Control District, 2650 Hospital Lane, Redding, CA 96001

Sierra County Air Pollution Control District, P.O. Box 286, Downieville, CA 95936

Siskiyou County Air Pollution Control District, 525 South Foothill Drive, Yreka, CA 96097

South Coast Air Quality Management District, 9150 Flair Drive, El Monte, CA 91731

Stanislaus County Air Pollution Control District, 1030 Scenic Drive, Modesto, CA 95350

Sutter County Air Pollution Control District, Sutter County Office Building, 142 Garden Highway, Yuba City, CA 95991

Tehama County Air Pollution Control District, P.O. Box 38, 1760 Walnut Street, Red Bluff, CA 96080

Tulare County Air Pollution Control District, County Civic Center, Visalia, CA 93277

Tuolumne County Air Pollution Control District, 9 North Washington Street, Sonora, CA 95370

Ventura County Air Pollution Control District, 800 South Victoria Avenue, Ventura, CA 93009

Yolo-Solano Air Pollution Control District, P.O. Box 1006, 323 First Street, #5, Woodland, CA 95695

(I) The following table lists the specific source and pollutant categories that have been delegated to the air pollution control agencies in California. A star (*) is used to indicate each category that has been delegated.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR CALIFORNIA

AIR POLLUTION CONTROL DISTRICT	General Provisions	Fossil Fuel Fired Steam Generating Units Constructed After 8/17/71	Electric Utility Steam Generating Units Constructed After 9/18/78	Incinerators	Portland Cement Plants	Nitric Acid Plants	Sulfuric Acid Plants	Asphalt Concrete Plants	Petroleum Refineries	Storage Vessels for Petroleum Liquids Constructed After 6/11/73 Prior to 5/19/78	Storage Vessels for Petroleum Liquids Constructed After 5/18/78	Secondary Lead Smelters	Secondary Brass And Bronze Ingot Production	Iron And Steel Plants	Sewage Treatment Plants	Primary Copper Smelters	Primary Zinc Smelters	Primary Lead Smelters	Primary Aluminum Reduction Plants	Phosphate Fertilizer: Wet Process Phosphoric Acid Plants	Phosphate Fertilizer: Superphosphoric Acid Plants	Phosphate Fertilizer: Diammonium Phosphate Plant	Phosphate Fertilizer: Triple Superphosphate Plant	Phosphate Fertilizer: Granular Triple Superphosphate Storage Facilities	Coal Preparation Plants	Ferroalloy Production Facilities
POLLUTANT CATEGORY	A	D	Da	E	F	G	H	I	J	K	Ka	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Bay Area	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Del Norte	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Fresno	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Great Basin	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Humboldt	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kern	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kings	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Lake	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Madera	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Mendocino	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Merced	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Modoc																											
Monterey Bay	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Northern Sonoma	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Sacramento																											
San Bernardino	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
San Diego	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
San Joaquin	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
San Luis Obispo	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Santa Barbara	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Shasta	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
South Coast	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Stanislaus	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Trinity	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Tulare	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Ventura	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Yolo-Solano	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Indicates delegation

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR CALIFORNIA

AIR POLLUTION CONTROL DISTRICT	Steel Plants: Electric Arc Furnaces	Kraft Pulp Mills	Glass Manufacturing Plants	Grain Elevators	Stationary Gas Turbines	Lime Manufacturing Plants	Lead - Acid Battery Manufacturing Plants	Automobile & Light Duty Surface Coating Operations	Phosphate Rock Plants	Ammonium Sulfate Manufacturing	NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) General Provisions	Asbestos	Beryllium	Beryllium Rocket Motor Firing	Mercury	Vinyl Chloride
POLLUTANT CATEGORY	AA	BB	CC	DD	GG	HH	KK	MM	NN	PP	A	B	C	D	E	F
Bay Area	*	*		*	*	*					*	*	*	*	*	*
Del Norte	*	*	*	*	*	*		*		*	*	*	*	*	*	*
Fresno	*	*		*	*	*					*	*	*	*	*	*
Great Basin	*										*	*	*	*	*	*
Humboldt	*	*	*	*	*	*					*	*	*	*	*	*
Kern	*	*	*	*	*	*					*	*	*	*	*	*
Kings	*	*		*	*	*					*	*	*	*	*	*
Lake	*										*	*	*	*	*	*
Madera	*	*		*							*	*	*	*	*	*
Mendocino	*	*		*	*	*					*	*	*	*	*	*
Merced	*							*		*	*	*	*	*	*	*
Modoc																
Monterey Bay											*	*	*	*	*	
Northern Sonoma	*	*	*	*	*	*		*		*	*	*	*	*	*	*
Sacramento																
San Bernardino	*										*	*	*	*	*	*
San Diego			*	*	*						*	*	*	*	*	
San Joaquin	*	*	*	*	*			*		*	*	*	*	*	*	*
San Luis Obispo	*	*	*	*	*	*		*		*	*	*	*	*	*	*
Santa Barbara	*			*		*					*	*	*	*	*	*
Shasta	*	*		*		*										
South Coast	*			*	*	*				*	*	*	*	*	*	*
Stanislaus	*															
Trinity	*	*	*								*	*	*	*	*	*
Tulare	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*
Ventura	*								*		*	*	*	*	*	*
Yolo-Solano	*										*	*	*	*	*	*

* Indicates delegation

(O) State of Colorado, Department of Health, Air Pollution Control Division, 4210 East 11th Avenue, Denver, CO 80220

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(H) State of Connecticut, Department of Environmental Protection, State Office Building, Hartford, CT 06115.

(I) State of Delaware, Delaware Department of Natural Resources and Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, DE 19901

(J) District of Columbia, Department of Consumer and Regulatory Affairs, 5000 Overlook Avenue SW., Washington DC 20032.

(K) Bureau of Air Quality Management, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, FL 32301.

(L) State of Georgia, Environmental Protection Division, Department of Natural Resources, 270 Washington Street, SW., Atlanta, GA 30334.

(M) Hawaii Department of Health, 1250 Punchbowl Street, Honolulu, HI 96813
Hawaii Department of Health (mailing address), Post Office Box 3378, Honolulu, HI 96801

(N) State of Idaho, Department of Health and Welfare, Statehouse, Boise, ID 83701.

(O) [Reserved]

(P) State of Indiana, Indiana Department of Environmental Management, 105 South Meridian Street, P.O. Box 6015, Indianapolis, IN 46206.

(Q) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Henry A. Wallace Building, 900 East Grand, Des Moines, IO 50319.

(R) State of Kansas: Kansas Department of Health and Environment, Bureau of Air Quality and Radiation Control, Forbes Field, Topeka, KS 66620.

(S) Division of Air Pollution Control, Department for Natural Resources and Environmental Protection, U.S. 127, Frankfort, KY 40601.

(T) State of Louisiana: Program Administrator, Air Quality Division, Louisiana Department of Environmental Quality, P.O. Box 44096, Baton Rouge, LA 70804.

(U) State of Maine, Department of Environmental Protection, State House, Augusta, ME 04330.

(V) State of Maryland, Bureau of Air Quality and Noise Control, Maryland State Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, MD 21201.

(W) Commonwealth of Massachusetts Massachusetts Department of Environmental Quality Engineering, Division of Air Quality Control, One Winter Street, Boston, MA 02108.

(X) State of Michigan, Air Pollution Control Division, Michigan Department of Natural Resources, Stevens T Mason Building, 8th Floor, Lansing, MI 48926.

(Y) Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road, St. Paul, MN 55155.

(Z) Bureau of Pollution Control, Department of Natural Resources, P.O. Box 10385, Jackson, MS 39209.

(AA) State of Missouri: Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102.

(BB) State of Montana, Department of Health and Environmental Services, Air Quality Bureau, Cogswell Building, Helena, MT 59601.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(CC) State of Nebraska, Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, NE 68509.

Lincoln-Lancaster County Health Department, Division of Environmental Health, 2200 St. Marys Avenue, Lincoln, NE 68503

(DD) Nevada:

Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, 201 South Fall Street, Carson City, NV 89710.

Clark County County District Health Department, Air Pollution Control Division, 625 Shadow Lane, Las Vegas, NV 89106.

Washoe County District Health Department, Division of Environmental Protection, 10 Kirman Avenue, Reno, NV 89502.

(1) The following table lists the specific source and pollutant categories that have been delegated to the air pollution control agencies in Nevada. A star (*) is used to indicate each category that has been delegated.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR NEVADA

* = Indicates delegation

AIR POLLUTION CONTROL AGENCY	POLLUTANT CATEGORY	NEVADA	Clark	Washoe
General Provisions	A			*
Fossil Fuel Fired Steam Generating Units Constructed After 8/17/71	D	*	*	*
Electric Utility Steam Generating Units Constructed After 9/18/78	Da	*		
Incinerators	E	*	*	*
Portland Cement Plants	F	*	*	*
Nitric Acid Plants	G	*		
Sulfuric Acid Plants	H	*		
Asphalt Concrete Plants	I	*	*	*
Petroleum Refineries	J	*		
Storage Vessels for Petroleum Liquids Constructed After 6/11/73 Prior to 5/19/78	K	*	*	*
Storage Vessels for Petroleum Liquids Constructed After 5/18/78	Ka	*	*	
Secondary Lead Smelters	L	*	*	*
Secondary Brass and Bronze Ingot Production	M	*		
Iron and Steel Plants	N	*		
Sewage Treatment Plants	O	*	*	*
Primary Copper Smelters	P	*	*	*
Primary Zinc Smelters	Q	*	*	*
Primary Lead Smelters	R	*	*	*
Primary Aluminum Reduction Plants	S	*		
Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	T	*		
Phosphate Fertilizer Industry: Super Phosphoric Acid Plants	U	*		
Phosphate Fertilizer Industry: Diammonium Phosphate Plant	V	*		
Phosphate Fertilizer Industry: Triple Super Phosphate Plant	W	*		
Phosphate Fertilizer Industry: Granular Triple Super Phosphate Storage Facilities	X	*		
Coal Preparation Plants	Y	*	*	*
Ferralloy Production Facilities	Z	*		

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR ARIZONA

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)

AIR POLLUTION CONTROL AGENCY	Steel Plants: Electric Arc Furnaces	Kraft Pulp Mills	Glass Manufacturing Plants	Grain Elevators	Stationary Gas Turbines	Lime Manufacturing Plants	Lead - Acid Battery Manufacturing Plants	Automobile & Light Duty Surface Coating Operations	Phosphate Rock Plants	Ammonium Sulfate Manufacturing	General Provisions	Asbestos	Beryllium	Beryllium Rocket Motor Firing	Mercury	Vinyl Chloride
POLLUTANT CATEGORY	AA	BB	CC	DD	GG	MM	KK	MM	NN	PP	A	B	C	D	E	F
ARIZONA	*	*		*	*	*				*		*	*	*	*	*
Maricopa	*	*	*	*	*	*		*		*		*	*	*	*	*
Pima	*	*		*	*	*						*	*		*	*

*Indicates delegation

(EE) State of New Hampshire: New Hampshire Air Resources Agency, Health and Welfare Building, Hazen Drive, Concord, NH 03301.

(FF) State of New Jersey: New Jersey Department of Environmental Protection, Division of Environmental Quality, Enforcement Element, John Fitch Plaza, CN-027, Trenton, NJ 08625.

(I) The following table lists the specific source and pollutant categories that have been delegated to the states in Region II. The (X) symbol is used to indicate each category that has been delegated.

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
D	Fossil-Fuel Fired Steam Generators for Which Construction Commenced After August 17, 1971 (Steam Generators and Lignite Fired Steam Generators)	X	X	X	X
Da	Electric Utility Steam Generating Units for Which Construction Commenced After September 18, 1978.	X		X	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plants	X	X	X	X
I	Asphalt Concrete Plants	X	X	X	X
J	Petroleum Refineries—(All Categories)	X	X	X	X
K	Storage Vessels for Petroleum Liquids Constructed After June 11, 1973, and prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids Constructed After May 18, 1978	X	X	X	
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Ingot Production Plants	X	X	X	X
N	Iron and Steel Plants	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroally Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces	X	X	X	X
AAa	Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants	X	X	X	
BB	Kraft Pulp Mills	X	X	X	
CC	Glass Manufacturing Plants	X	X	X	
DD	Grain Elevators	X	X	X	
EE	Surface Coating of Metal Furniture	X	X	X	
GG	Stationary Gas Turbines	X	X	X	
HH	Lime Plants	X	X	X	
KK	Lead Acid Battery Manufacturing Plants	X	X		
LL	Metallic Mineral Processing Plants	X	X	X	
MM	Automobile and Light-Duty Truck Surface Coating Operations	X	X		
NN	Phosphate Rock Plants	X	X		
PP	Ammonium Sulfate Manufacturing Plants	X	X		
QQ	Graphic Art Industry Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X	
TT	Metal Coil Surface Coating	X	X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	
VV	Equipment Leaks of Volatile Organic Compounds in Synthetic Organic Chemical Manufacturing Industry.	X		X	
WW	Beverage Can Surface Coating Industry	X	X	X	
XX	Bulk Gasoline Terminals	X	X	X	
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X	
HHH	Synthetic Fiber Production Facilities	X		X	
JJJ	Petroleum Dry Cleaners	X	X	X	
KKK	Equipment Leaks of VOC from Onshore Natural Gas Processing Plants				
LLL	Onshore Natural Gas Processing Plants, SO_2 Emissions		X		
OOO	Nonmetallic Mineral Processing Plants		X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X	

(GG) State of New Mexico: Director, New Mexico Environmental Improvement Division, Health and Environment Department, 1190 St. Francis Drive, Santa Fe, NM 87503.

(I) The City of Albuquerque and Bernalillo County: Director, The Albuquerque Environmental Health Department, The City of Albuquerque, P.O. Box 1293, Albuquerque, NM 87103.

(HH) New York: New York State Department of Environmental Conservation, 50 Wolf Road Albany, New York 12233, attention: Division of Air Resources.

(II) North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27687, Raleigh, NC 27611. Attention: Air Quality Section.

(JJ) State of North Dakota, State Department of Health and Consolidated Laboratories, Division of Environmental Engineering, State Capitol, Bismarck, ND 58505.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(KK) State of Ohio:

(i) Medina, Summit and Portage Counties, Director, Akron Regional Air Quality Management District, 177 South Broadway, Akron, OH 44308.

(ii) Stark County, Director, Air Pollution Control Division, Canton City Health Department, City Hall Annex Second Floor, 218 Cleveland Avenue SW., Canton, OH 44702.

(iii) Butler, Clermont, Hamilton and Warren Counties: Director, Southwestern Ohio Air Pollution Control Agency, 2400 Beekman Street, Cincinnati, OH 45214.

(iv) Cuyahoga County Commissioner, Division of Air Pollution Control Department

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of Public Health and Welfare, 2735 Broadway Avenue, Cleveland, OH 44115.

(v) Belmont, Carroll, Columbiana, Harrison, Jefferson, and Monroe Counties: Director, North Ohio Valley Air Authority (NOVAA), 814 Adams Street, Steubenville, OH 43952.

(vi) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties: Supervisor, Regional Air Pollution Control Agency (RAPCA), Montgomery County Health Department, 451 West Third Street, Dayton, OH 45402.

(vii) Lucas County and the City of Rossford (in Wood County): Director, Toledo Environmental Services Agency, 26 Main Street, Toledo, OH 43605.

(viii) Adams, Brown, Lawrence, and Scioto Counties; Engineer-Director, Air Division, Portsmouth City Health Department, 740 Second Street, Portsmouth, OH 45662.

(ix) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van Wert, Williams, Wood (except City of Rossford), and Wyandot Counties: Ohio Environmental Protection Agency, Northwest District Air Pollution Unit 1035 Dezlac Grove Drive, Bowling Green, OH 43402.

(x) Ashtabula, Holmes, Lorain, and Wayne Counties: Ohio Environmental Protection Agency, Northeast District Office, Air Pollution Unit, 2110 East Aurora Road, Twinsburg, OH 44087.

(xi) Athens, Coshocton, Gallia, Guernsey, Hocking, Jackson, Meigs, Morgan, Muskingum, Noble, Perry, Pike, Ross, Tuscarawas, Vinton, and Washington Counties: Ohio Environmental Protection Agency, Southeast District Office, Air Pollution Unit, 2195 Front Street, Logan, OH 43138.

(xii) Champaign, Clinton, Highland, Logan, and Shelby Counties: Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, East Fourth Street, Dayton, OH 45402.

(xiii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties: Ohio Environmental Protection Agency, Central District Office, Air Pollution Unit, P.O. Box 1049, Columbus, OH 43266-0149.

(xiv) Geauga and Lake Counties: Lake County General Health District, Air Pollution Control, 105 Main Street, Painesville, OH 44077.

(xv) Mahoning and Trumbull Counties: Mahoning-Trumbull Air Pollution Control Agency, 9 West Front Street, Youngstown, OH 44503.

(LL) State of Oklahoma, Oklahoma State Department of Health, Air Quality Service, P.O. Box 53551, Oklahoma City, OK 73152.

(i) Oklahoma City and County: Director, Oklahoma City-County Health Department, 921 Northeast 23rd Street, Oklahoma City, OK 73105.

(ii) Tulsa County: Tulsa City-County Health Department, 4616 East Fifteenth Street, Tulsa, OK 74112.

(MM) State of Oregon, Department of Environmental Quality, Yeon Building, 522 S.W. Fifth, Portland, OR 97204.

(i)—(viii) [Reserved]

(ix) Lane Regional Air Pollution Authority, 225 North Fifth, Suite 501, Springfield, OR 97477.

(NN) (a) City of Philadelphia: Philadelphia Department of Public Health, Air Management Services, 500 S. Broad Street, Philadelphia, PA 19146.

(b) Commonwealth of Pennsylvania: Department of Environmental Resources, Post Office Box 2063, Harrisburg, PA 17120.

(c) Allegheny County: Allegheny County Health Department, Bureau of Air Pollution Control, 301 Thirty-ninth Street, Pittsburgh, PA 15201.

(OO) State of Rhode Island: Rhode Island Department of Environmental Management, 204 Cannon Building, Davis Street, Providence, RI 02908.

(PP) State of South Carolina, Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201.

(QQ) State of South Dakota, Department of Water and Natural Resources, Office of Air Quality and Solid Waste, Joe Foss Building, 523 East Capitol, Pierre, SD 57501—3181.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(RR) Division of Air Pollution Control, Tennessee Department of Public Health, 256 Capitol Hill Building, Nashville, TN 37219.

Knox County Department of Air Pollution, City/County Building, Room L222, 400 Main Avenue, Knoxville, TN 37902.

Air Pollution Control Bureau, Metropolitan Health Department, 311 23rd Avenue North, Nashville, TN 37203.

(SS) State of Texas, Texas Air Control Board, 6330 Highway 290 East, Austin, TX 78723.

(TT) State of Utah, Department of Health, Bureau of Air Quality, 288 North 1460 West, P.O. Box 16690, Salt Lake City, UT 84113—0690.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(UU) State of Vermont: Vermont Agency of Environmental Conservation, Air Pollution Control, State Office Building, Montpelier, VT 05602.

(VV) Commonwealth of Virginia, Virginia State Air Pollution Control Board, Room 1106, Ninth Street Office Building, Richmond, VA 23219.

(WW)(i) Washington: State of Washington, Department of Ecology, Olympia, WA 98504

(ii) Northwest Air Pollution Authority, 207 Pioneer Building, Second and Pine Streets, Mount Vernon, WA 98273.

(iii) Puget Sound Air Pollution Control Agency, 200 West Mercer Street, Room 205, Seattle, WA 98119—3958.

(iv) Spokane County Air Pollution Control Authority, North 811 Jefferson, Spokane, WA 99201.

(v) Southwest Air Pollution Control Authority, Suite 7601 H, NE Hazel Dell Avenue, Vancouver, WA 98665.

(vi) Olympic Air Pollution Control Authority, 120 East State Avenue, Olympia, WA 98501.

(vii) [Reserved]

(viii) Benton-Franklin-Walla Walla Counties Air Pollution Control Authority, 650 George Washington Way, Richland, WA 99352.

(XX) State of West Virginia Air Pollution Control Commission, 1558 Washington Street East, Charleston, WV 25311

(YY) Wisconsin—Wisconsin Department of Natural Resources, P.O Box 7921, Madison, WI 53707.

(ZZ) State of Wyoming, Department of Environmental Quality, Air Quality Division, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(AAA) Territory of Guam Guam Environmental Protection Agency, Post Office Box 2999, Agana, Guam 96910.

(1) The following table lists the specific source and pollutant categories that have been delegated to the air pollution control agency in Guam. A star (*) is used to indicate each category that has been delegated.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR GUAM

* Indicates delegation	POLLUTANT CATEGORY	AIR POLLUTION CONTROL AGENCY
*	A	General Provisions
*	D	Fossil Fuel Fired Steam Generating Units Constructed After 8/17/71
	Da	Electric Utility Steam Generating Units Constructed After 9/18/78
	E	Incinerators
*	F	Portland Cement Plants
	G	Nitric Acid Plants
	H	Sulfuric Acid Plants
*	I	Asphalt Concrete Plants
*	J	Petroleum Refineries
*	K	Storage Vessels for Petroleum Liquids Constructed After 6/11/73 Prior to 5/19/78
	Ka	Storage Vessels for Petroleum Liquids Constructed After 5/18/78
	L	Secondary Lead Smelters
	M	Secondary Brass and Bronze Ingot Production
	N	Iron and Steel Plants
	O	Sewage Treatment Plants
	P	Primary Copper Smelters
	Q	Primary Zinc Smelters
	R	Primary Lead Smelters
	S	Primary Aluminum Reduction Plants
	T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants
	U	Phosphate Fertilizer Industry: Super Phosphoric Acid Plants
	V	Phosphate Fertilizer Industry: Diammonium Phosphate Plant
	W	Phosphate Fertilizer Industry: Triple Super Phosphate Plant
	X	Phosphate Fertilizer Industry: Granular Triple Super Phosphate Storage Facilities
	Y	Coal Preparation Plants
	Z	Ferroalloy Production Facilities

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR GUAM											NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)					
AIR POLLUTION CONTROL AGENCY	Steel Plants: Electric Arc Furnaces	Kraft Pulp Mills	Glass Manufacturing Plants	Grain Elevators	Stationary Gas Turbines	Lime Manufacturing Plants	Lead - Acid Battery Manufacturing Plants	Automobile & Light Duty Surface Coating Operations	Phosphate Rock Plants	Ammonium Sulfate Manufacturing	General Provisions	Asbestos	Beryllium	Beryllium Rocket Motor Firing	Mercury	Vinyl Chloride
POLLUTANT CATEGORY	AA	BB	CC	DD	GG	HH	KK	MM	NN	PP	A	B	C	D	E	F
No Delegation In These Categories																

(BBB) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11488, Santurce, PR 00910, Attention: Air Quality Area Director (see table under part 60.4(b)(FF)(1)).

(CCC) U.S. Virgin Islands: U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, VI 00801.

(c) The following is a table indicating the delegation status of New Source Performance Standards for Region VIII.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS

((NSPS) for region VIII)

Subpart	State					
	CO	MT	ND	SD	UT	WY
A General provisions	○	○	○	○	○	○
D Fossil fuel fired steam generators	○	○	○	○	○	○
Da Electric utility steam generators	○	○	○	○	○	○
Db Industrial-commercial institutional steam generators	○	○			○	
E Incinerator	○	○	○	○	○	○
F Portland cement plant	○	○	○	○	○	○
G Nitric acid plants	○	○	○		○	○
H Sulfuric acid plant	○	○	○		○	○
I Asphalt concrete plants	○	○	○	○	○	○
J Petroleum refineries	○	○	○		○	○
K Petroleum storage vessels (6/11/73–5/19/78)	○	○	○	○	○	○
Ka Petroleum storage vessels (5/18/78–7/23/84)	○	○	○		○	○
Kb Petroleum storage vessels (after 7/23/84)		○			○	
L Secondary lead smelters	○	○			○	○
M Secondary brass & bronze production plants	○	○			○	○
N Primary emissions from basic oxygen process furnaces (after 6/11/73)	○	○			○	○
Na Secondary emissions from basic oxygen process furnaces (after 1/20/83)	○	○			○	○
O Sewage treatment plants	○	○	○	○	○	○
P Primary copper smelters	○	○			○	○
Q Primary zinc smelters	○	○			○	○

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS—Continued

[(NSPS) for region VIII]

Subpart	State					
	CO	MT	ND	SD	UT	WY
R Primary lead smelters	(*)	(*)			(*)	(*)
S Primary aluminum reduction plants	(*)	(*)			(*)	(*)
T Phosphate fertilizer industry: wet process phosphoric plants	(*)	(*)	(*)		(*)	(*)
U Phosphate fertilizer industry: superphosphoric acid plants	(*)	(*)	(*)		(*)	(*)
V Phosphate fertilizer industry: diammonium phosphate plants	(*)	(*)	(*)		(*)	(*)
W Phosphate fertilizer industry: triple superphosphate plants	(*)	(*)	(*)		(*)	(*)
X Phosphate fertilizer industry: granular triple superphosphate storage facilities	(*)	(*)	(*)		(*)	(*)
Y Coal preparation plants	(*)	(*)	(*)	(*)	(*)	(*)
Z Ferroalloy production facilities	(*)	(*)			(*)	(*)
AA Steel plants: electric arc furnaces (10/21/74–8–17–83)	(*)	(*)			(*)	(*)
AAa Steel plants: electric arc furnaces and argon-oxygen decarburization vessels (after 8/7/83)		(*)			(*)	(*)
BB Kraft pulp mills	(*)	(*)			(*)	(*)
CC Glass manufacturing plants	(*)	(*)			(*)	(*)
DD Grain elevators	(*)	(*)	(*)	(*)	(*)	(*)
EE Surface coating of metal furniture	(*)	(*)			(*)	(*)
GG Stationary gas turbines	(*)	(*)	(*)	(*)	(*)	(*)
HH Lime manufacturing plants	(*)	(*)	(*)	(*)	(*)	(*)
KK Lead-acid battery manufacturing plants	(*)	(*)			(*)	(*)
LL Metallic mineral processing plants	(*)	(*)		(*)	(*)	(*)
MM Automobile and light duty truck surface coating operations	(*)	(*)			(*)	(*)
NN Phosphate rock plants	(*)	(*)			(*)	(*)
PP Ammonium sulfate manufacturing	(*)	(*)			(*)	(*)
QQ Graphic arts industry: publication rotogravure printing	(*)	(*)			(*)	(*)
RR Pressure sensitive tape and label surface coating	(*)	(*)			(*)	(*)
SS Industrial surface coating: large appliances	(*)	(*)			(*)	(*)
TT Metal coil surface coating	(*)	(*)			(*)	(*)
UU Asphalt processing and asphalt roofing manufacture	(*)	(*)	—	—	(*)	(*)
VV Synthetic organic chemicals manufacturing: equipment leaks of VOC	(*)	(*)	(*)		(*)	(*)
WW Beverage can surface coating industry	(*)	(*)			(*)	(*)
XX Bulk gasoline terminals	(*)	(*)	(*)		(*)	(*)
AAA Residential wood heaters					(*)	
BBB Rubber tires					(*)	
FFF Flexible vinyl and urethane coating and printing	(*)	(*)			(*)	(*)
GGG Equipment leaks of VOC in petroleum refineries	(*)	(*)	(*)		(*)	(*)
HHH Synthetic fiber production	(*)	(*)			(*)	(*)
JJJ Petroleum dry cleaners	(*)	(*)	(*)		(*)	(*)
KKK Equipment leaks of VOC from onshore natural gas processing plants	(*)	(*)	(*)		(*)	(*)
LLL Onshore natural gas processing: SO_2 emissions	(*)	(*)	(*)		(*)	(*)
OOO Nonmetallic mineral processing plants	(*)	(*)	(*)	(*)	(*)	(*)
PPP Wool fiberglass insulation manufacturing plants	(*)	(*)			(*)	(*)
SSS Magnetic tape industry					(*)	
TTT Plastic parts for business machines coatings					(*)	

(*) Indicates delegation.

[40 FR 18169, Apr. 25, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 60.4 see the List of CFR Sections Affected appearing in the Finding Aids section of this volume.

§ 60.5 Determination of construction or modification.

(a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.

(b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

[40 FR 58418, Dec. 16, 1975]

§ 60.6 Review of plans.

(a) When requested to do so by an owner or operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.

(b)(1) A separate request shall be submitted for each construction or modification project.

(2) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.

(c) Neither a request for plans review nor advice furnished by the Administrator in response to such request shall (1) relieve an owner or operator of legal responsibility for compliance with any provision of this part or of any applicable State or local requirement, or (2) prevent the Administrator from implementing or enforcing any provision of this part or taking any other action authorized by the Act.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974]

§ 60.7 Notification and record keeping.

(a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification as follows:

(1) A notification of the date construction (or reconstruction as defined under § 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

(2) A notification of the anticipated date of initial startup of an affected facility postmarked not more than 60 days nor less than 30 days prior to such date.

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in § 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.

(5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with § 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.

(6) A notification of the anticipated date for conducting the opacity observations required by § 60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by § 60.8 in lieu of Method 9 observation data as allowed by § 60.11(e)(5) of this part. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

(b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring system shall submit a written report of excess emissions (as defined in applicable subparts) to the Administrator for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

(1) The magnitude of excess emissions computed in accordance with § 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) Any owner or operator subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.

(e) If notification substantially similar to that in paragraph (a) of this section is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of paragraph (a) of this section.

(f) Individual subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.

[36 FR 24877, Dec. 23, 1971, as amended at 40 FR 46254, Oct. 6, 1975; 40 FR 58418, Dec. 16, 1975; 45 FR 5617, Jan. 23, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 63113, Dec. 27, 1985; 52 FR 9781, Mar. 26, 1987]

§ 60.8 Performance tests.

(a) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).

(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

(d) The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present.

(e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(f) Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974; 42 FR 57126, Nov. 1, 1977; 44 FR 33612, June 11, 1979; 54 FR 6662, Feb. 14, 1989; 54 FR 21344, May 17, 1989]

§ 60.9 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter. (Information submitted voluntarily to the Administrator for the purposes of §§ 60.5 and 60.6 is governed by §§ 2.201 through 2.213 of this chapter and not by § 2.301 of this chapter.)

§ 60.10 State authority.

The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

(a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.

(b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.

§ 60.11 Compliance with standards and maintenance requirements.

(a) Compliance with standards in this part, other than opacity standards, shall be determined only by performance tests established by § 60.8, unless otherwise specified in the applicable standard.

(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9 in Appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).

(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(e)(1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in § 60.8 unless one of the following conditions apply. If no performance test under § 60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under § 60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in § 60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Reference Method 9 of Appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determing compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification. Except as provided in paragraph (e)(5) of this section, the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in Appendix B of this part, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.

(2) Except as provided in paragraph (e)(3) of this section, the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with paragraph (b) of this section, shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under § 60.8. The inability of an owner or operator to secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.

(3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in § 60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of paragraph (e)(1) of this section shall apply.

(4) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by § 60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and § 60.8 performance test results.

(5) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under § 60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required uhder § 60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under § 60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under § 60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under § 60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in § 60.13(c) of this part, that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way.

If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine opacity compliance.

(6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by § 60.8, the opacity observation results and observer certification required by § 60.11(e)(1), and the COMS results, if applicable, the Administrator will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by § 60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with § 60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, he shall notify the owner or operator and advise him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

(7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(8) The Administrator will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will pro-

mulgate the new opacity standard in the FEDERAL REGISTER.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

[38 FR 28565, Oct. 15, 1973, as amended at 39 FR 39873, Nov. 12, 1974; 43 FR 8800, Mar. 3, 1978; 45 FR 23379, Apr. 4, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 51 FR 1790, Jan. 15, 1986; 52 FR 9781, Mar. 26, 1987]

§ 60.12 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[39 FR 9314, Mar. 8, 1974]

§ 60.13 Monitoring requirements.

(a) For the purposes of this section, all continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under Appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, Appendix F to this part, unless otherwise specified in an applicable subpart or by the Administrator. Appendix F is applicable December 4, 1987.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under § 60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.

(c) If the owner or operator of an affected facility elects to submit continuous opacity monitoring system (COMS) data for compliance with the opacity standard as provided under § 60.11(e)(5), he shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, Appendix B, of this part before the performance test required under § 60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under § 60.8 or within 30 days thereafter in accordance with the applicable performance specification in Appendix B of this part. The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.

(1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under § 60.8 and as described in § 60.11(e)(5) shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in paragraph (c) of this section at least 10 days before the performance test required under § 60.8 is conducted.

(2) Except as provided in paragraph (c)(1) of this section, the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.

(d)(1) Owners and operators of all continuous emission monitoring systems installed in accordance with the provisions of this part shall check the zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour span drift exceeds two times the limits of the applicable performance specifications in Appendix B. The system must allow the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified,

whenever specified. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments except that for systems using automatic zero adjustments. The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(2) Unless otherwise approved by the Administrator, the following procedures shall be followed for continuous monitoring systems measuring opacity of emissions. Minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(1) All continuous monitoring systems referenced by paragraph (c) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(2) All continuous monitoring systems referenced by paragraph (c) of this section for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B of this part shall be used

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.

(h) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in § 60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period. For continuous monitoring systems other than opacity, 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period. Data recorder during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O_2 or ng/J of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in subparts After conversion

into units of the standard, the data may be rounded to the same number of significant digits as used in the applicable subparts to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

(1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases.

(2) Alternative monitoring requirements when the affected facility is infrequently operated.

(3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(5) Alternative methods of converting pollutant concentration measurements to units of the standards.

(6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

(7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subpart.

(8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, Appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.

(9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

(j) An alternative to the relative accuracy test specified in Performance Specification 2 of Appendix B may be requested as follows:

(1) An alternative to the reference method tests for determining relative accuracy is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the relative accuracy test in section 7 of Performance Specification 2 and substitute the procedures in section 10 if the results of a performance test conducted according to the requirements in § 60.8 of this subpart or other tests performed following the criteria in § 60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the relative accuracy test and substitute the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the relative accuracy test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).

(2) The waiver of a CEMS relative accuracy test will be reviewed and may be rescinded at such time following successful completion of the alternative RA procedure that the CEMS data indicate the source emissions approaching the level of the applicable standard. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissons have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., § 60.45(g) (2) and (3), § 60.73(e), and § 60.84(e)]. It is the responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of relative accuracy testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2.

[40 FR 46255, Oct. 6, 1975; 40 FR 59205, Dec. 22, 1975, as amended at 41 FR 35185, Aug. 20, 1976; 48 FR 13326, Mar. 30, 1983; 48 FR 23610, May 25, 1983; 48 FR 32986, July 20, 1983; 52 FR 9782, Mar. 26, 1987; 52 FR 17555, May 11, 1987; 52 FR 21007, June 4, 1987]

§ 60.14 Modification.

(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrate that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in Appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the

maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and § 60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by § 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved

[40 FR 58419, Dec. 16, 1975, amended at 43 FR 34347, Aug. 3, 1978, 45 FR 5617, Jan. 23, 1980]

§ 60.15 Reconstruction.

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(1) Name and address of the owner or operator.

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable

standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under paragraph (e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[40 FR 58420, Dec. 16, 1975]

§ 60.16 Priority list.

PRIORITIZED MAJOR SOURCE CATEGORIES

Priority Number [1]	Source Category
1	Synthetic Organic Chemical Manufacturing Industry (SOCMI) and Volatile Organic Liquid Storage Vessels and Handling Equipment
	(a) SOCMI unit processes
	(b) Volatile organic liquid (VOL) storage vessels and handling equipment
	(c) SOCMI fugitive sources
	(d) SOCMI secondary sources
2	Industrial Surface Coating: Cans
3	Petroleum Refineries, Fugitive Sources
4	Industrial Surface Coating: Paper
5	Dry Cleaning
	(a) Perchloroethylene
	(b) Petroleum solvent
6	Graphic Arts
7	Polymers and Resins, Acrylic Resins
8	Mineral Wool (Deleted)
9	Stationary Internal Combustion Engines
10	Industrial Surface Coating: Fabric

PRIORITIZED MAJOR SOURCE CATEGORIES—Continued

Priority Number [1]	Source Category
11	Industrial-Commercial-Institutional Steam Generating Units
12	Incineration, Non-Municipal (Deleted)
13	Non-Metallic Mineral Processing
14	Metallic Mineral Processing
15	Secondary Copper (Deleted)
16	Phosphate Rock Preparation
17	Foundries, Steel and Gray Iron
18	Polymers and Resins, Polyethylene
19	Charcoal Production
20	Synthetic Rubber
	(a) Tire manufacture
	(b) SBR production
21	Vegetable Oil
22	Industrial Surface Coating, Metal Coil
23	Petroleum Transportation and Marketing
24	By-Product Coke Ovens
25	Synthetic Fibers
26	Plywood Manufacture
27	Industrial Surface Coating, Automobiles
28	Industrial Surface Coating, Large Appliances
29	Crude Oil and Natural Gas Production
30	Secondary Aluminum
31	Potash (Deleted)
32	Lightweight Aggregate Industry: Clay, Shale, and Slate [2]
33	Glass
34	Gypsum
35	Sodium Carbonate
36	Secondary Zinc (Deleted)
37	Polymers and Resins, Phenolic
38	Polymers and Resins, Urea-Melamine
39	Ammonia (Deleted)
40	Polymers and Resins, Polystyrene
41	Polymers and Resins, ABS-SAN Resins
42	Fiberglass
43	Polymers and Resins, Polypropylene
44	Textile Processing
45	Asphalt Processing and Asphalt Roofing Manufacture
46	Brick and Related Clay Products
47	Ceramic Clay Manufacturing (Deleted)
48	Ammonium Nitrate Fertilizer
49	Castable Refractories (Deleted)
50	Borax and Boric Acid (Deleted)
51	Polymers and Resins, Polyester Resins
52	Ammonium Sulfate
53	Starch
54	Perlite
55	Phosphoric Acid: Thermal Process (Deleted)
56	Uranium Refining
57	Animal Feed Defluorination (Deleted)
58	Urea (for fertilizer and polymers)
59	Detergent (Deleted)

Other Source Categories

Lead acid battery manufacture [4]
Organic solvent cleaning [3]
Industrial surface coating, metal furniture [3]
Stationary gas turbines [3]

[1] Low numbers have highest priority, e.g., No. 1 is high priority, No. 58 is low priority.
[2] Formerly titled "Sintering, Clay and Fly Ash"
[3] Minor source category, but included on list since an NSPS is being developed for that source category.
[4] Not prioritized, since an NSPS for this major source category has already been promulgated.

[47 FR 951, Jan 8, 1982, as amended at 47 FR 31876, July 23, 1982, 51 FR 42796, Nov 25, 1986, 52 FR 11428, Apr. 8, 1987]

§ 60.17 Incorporations by reference.

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register on the date listed. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding address noted below, and all are available for inspection at the Office of the Federal Register, Room 8401, 1100 L Street, NW., Washington, DC and at the Library (MD-35), U.S. EPA, Research Triangle Park, NC.

(a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; or the University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

(1) ASTM D388-77, Standard Specification for Classification of Coals by Rank, Incorporation by reference (IBR) approved January 27, 1983, for §§ 60.41(f); 60.45(f)(4)(i), (ii), (vi); 60.41a; 60.41b; 60.251 (b), (c).

(2) ASTM D3178-73, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(3) ASTM D3176-74, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved January 27, 1983, for § 60.45(f)(5)(i); Appendix A to part 60, Method 19.

(4) ASTM D1137-53 (Reapproved 1975), Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(5) ASTM D1945-64 (Reapproved 1976), Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(6) ASTM D1946-77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.45(f)(5)(i), 60.18(f), 60.614(d)(2)(ii), (d)(4), 60.664(d)(2)(ii) and (d)(4).

(7) ASTM D2015-77, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved January 27, 1983 for § 60.45(f)(5)(ii); § 60.46(g), Appendix A to part 60, Method 19.

(8) ASTM D1826-77, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved January 27, 1983, for §§ 60.45(f)(5)(ii); 60.46(g); 60.296(f), Appendix A to part 60, Method 19

(9) ASTM D240-76, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved January 27, 1983, for § 60.46(g); 60.296(f); Appendix A to part 60, Method 19.

(10) ASTM D396-78, Standard Specification for Fuel Oils, IBR approved January 27, 1983, for §§ 60.40b; 60.41b; 60.111(b), 60.111a(b).

(11) ASTM D2880-78, Standard Specification for Gas Turbine Fuel Oils, IBR approved January 27, 1983 for §§ 60.111(b), 60.111a(b), 60.335(b)(2).

(12) ASTM D975-78, Standard Specification for Diesel Fuel Oils, IBR approved January 27, 1983 for §§ 60.111(b), 60.111a(b).

(13) ASTM D323-82, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved April 8, 1987 for §§ 60.111(i), 60.111a(g), 60.111b(g), and 60.116b(f)(2)(ii).

(14) ASTM A99-76, Standard Specification for Ferromanganese, IBR approved January 27, 1983 for § 60.261.

(15) ASTM A483-64 (Reapproved 1974), Standard Specification for Silicomanganese, IBR approved January 27, 1983 for § 60.261.

(16) ASTM A101-73, Standard Specification for Ferrochromium, IBR approved January 27, 1983 for § 60.261.

(17) ASTM A100-69 (Reapproved 1974), Standard Specification for Ferrosilicon, IBR approved January 27, 1983 for § 60.261.

(18) ASTM A482-76, Standard Specification for Ferrochromesilicon, IBR approved January 27, 1983 for § 60.261.

(19) ASTM A495-76, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved January 27, 1983 for § 60.261.

(20) ASTM D 1072-80, Standard Method for Total Sulfur in Fuel Gases, IBR approved July 31, 1984 for § 60.335(b)(2).

(21) ASTM D2986-71 (Reapproved 1978), Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved January 27, 1983 for Appendix A to part 60, Method 5, par. 3.1.1; Method 12, par. 4.1.1; Method 17, par. 3.1.1.

(22) ASTM D 1192-77, Standard Specification for Reagent Water, Incorporated by Reference approved January 27, 1983, for Appendix A to part 60, Method 6, par. 3.1.1; Method 7, par. 3.2.2; Method 7C, par. 3.1.1; Method 7D, par. 3.1.1, Method 8, par. 3.1.3; Method 12, par. 4.1.3.

(23) [Reserved]

(24) ASTM D2234-76, Standard Methods for Collection of a Gross Sample of Coal, IBR approved January 27, 1983, for Appendix A to part 60, Method 19

(25) ASTM D3173-73, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983, for Appendix A to part 60, Method 19.

(26) ASTM D3177-75, Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983, for Appendix A to part 60, Method 19.

(27) ASTM D2013-72, Standard Method of Preparing Coal Samples for Analysis, IBR approved January 27, 1983, for Appendix A to part 60, Method 19.

(28) ASTM D270-65 (Reapproved 1975), Standard Method of Sampling Petroleum and Petroleum Products, IBR approved January 27, 1983, for Appendix A to part 60, Method 19.

(29) ASTM D737-65, Standard Test Method for Air Permeability of Textile Fabrics, IBR approved January 27, 1983 for §61.23(a).

(30) ASTM D1475-60 (Reapproved 1980), Standard Test Method for Density of Paint, Varnish, Lacquer, and Related Products, IBR approved January 27, 1983 for § 60.435(d)(1), Appendix A to part 60, Method 24, par. 2.1, and Method 24A, par. 2.2.

(31) ASTM D2369-81, Standard Test Method for Volatile Content of Coatings, IBR approved January 27, 1983 for Appendix A to part 60, Method 24, par. 2.2.

(32) ASTM D3792-79, Standard Method for Water Content of Water-Reducible Paints by Direct Injection Into a Gas Chromatograph, IBR approved January 27, 1983 for Appendix A to part 60, Method 24, par. 2.3.

(33) ASTM D4017-81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved January 27, 1983 for Appendix A to part 60, Method 24, par. 2.4.

(34) ASTM E169-63 (Reapproved 1977), General Techniques of Ultraviolet Quantitative Analysis, IBR approved for § 60.485(d), § 60.593(b), and § 60.632(f).

(35) ASTM E168-67 (Reapproved 1977), General Techniques of Infrared Quantitative Analysis, IBR approved for § 60.485(d), § 60.593(b), and § 60.632(f).

(36) ASTM E260-73, General Gas Chromatography Procedures, IBR approved for § 60.485(d), § 60.593(b), and § 60.632(f).

(37) ASTM D2879-83, Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved April 8, 1987 for §§ 60.485(e), 60.111b(f)(3), 60.116b(e)(3)(ii), and 60.116b(f)(2)(i)

(38) ASTM D2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§ 60.18(f), 60.485(g), 60.614(d)(4) and 60.664(d)(4).

(39) ASTM D2504-67 (Reapproved 1977), Noncondensable Gases in C_3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for § 60.485(g)

(40) ASTM D86-78, Distillation of Petroleum Products, IBR approved for § 60.593(d) and § 60.633(h)

(41) [Reserved]

(42) ASTM D 3031-81, Standard Test Method for Total Sulfur in Natural Gas by Hydrogenation, IBR approved July 31, 1984 for § 60.335(b)(2)

(43) ASTM D 4084-82, Standard Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved July 31, 1984 for § 60.335(b)(2).

(44) ASTM D 3246-81, Standard Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved July 31, 1984 for § 60.335(b)(2)

(45) ASTM D2584-68, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved February 25, 1985 for § 60.685(e).

(46) ASTM D3431-80, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons (Microcoulometric Method), IBR approved November 25, 1986, for Appendix A to part 60, Method 19

(47) ASTM D129-64 (reapproved 1978) Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for Appendix A to part 60, Method 19.

(48) ASTM D1552-83, Standard Test Method for Sulfur in Petroleum Products (High Temperature Method), IBR approved for Appendix A to part 60, Method 19.

(49) ASTM D1835-86, Standard Specification for Liquefied Petroleum (LP) Gases, to be approved for § 60.41b.

(50) ASTM D3286-85, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isothermal-Jacket Bomb Calorimeter, IBR approved for Appendix A to part 60, Method 19.

(51) ASTM D4057-81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for Appendix A to part 60, Method 19

(52) ASTM D4239-85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for Appendix A to part 60, Method 19.

(53) ASTM D2016-74 (Reapproved 1983), Standard Test Methods for Moisture Con

tent of Wood * * * for Appendix A, Method 28.

(54) ASTM D4442-84, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials * * * for Appendix A, Method 28.

(55) [Reserved]

(56) ASTM D129-64 (Reapproved 1978), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved August 17, 1989, for § 60.106(h)(2).

(57) ASTM D1552-83, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved August 17, 1989, for § 60.106(h)(2).

(58) ASTM D2622-87, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry, IBR approved August 17, 1989, for § 60.106(h)(2).

(59) ASTM D1266-87, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved August 17, 1989, for § 60.106(h)(2).

(b) The following material is available for purchase from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, IBR approved January 27, 1983 for §§ 60.204(d)(2), 60.214(d)(2), 60.224(d)(2), 60.234(d)(2), 60.244(f)(2).

(c) The following material is available for purchase from the American Petroleum Institute, 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved January 27, 1983, for §§ 60.111(l), 60.111a(f), 60.111a(f)(1) and 60.116b(e)(2)(i).

(d) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, GA 30341.

(1) TAPPI Method T624 os-65, IBR approved January 27, 1983 for § 60.285(d)(4).

(e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103-105 °C, in *Standard Methods for the Examination of Water and Wastewater*, 15th Edition, 1980, IBR approved February 25, 1985 for § 60.683(b).

(f) The following material is available for purchase from the following address: Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance.

(g) The following material is available for purchase from the following address: West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5-21 and 90 and 91, September 3, 1970, revised 1984.

(h) The ASME *Power Test Codes* 4.1, 8 August 1972, is available for purchase from the following address: The American Society of Mechanical Engineers, 22 Law Drive, Box 2350, Fairfield, NJ 07007-2350.

[48 FR 3736, Jan. 27, 1983]

EDITORIAL NOTE: For Federal Register citations affecting § 60.17, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 60.18 General control device requirements.

(a) *Introduction.* This section contains requirements for control devices used to comply with applicable subparts of parts 60 and 61. The requirements are placed here for administrative convenience and only apply to facilities covered by subparts referring to this section.

(b) *Flares.* Paragraphs (c) through (f) apply to flares.

(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-

assisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f).

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(4) (ii) and (iii).

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(6).

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)(1) Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

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

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

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

$$K = \text{Constant}, \quad 1.740 \times 10^{-7} \quad \left(\frac{1}{ppm}\right) \left(\frac{g\ mole}{scm}\right) \left(\frac{MJ}{kcal}\right)$$

where the standard temperature for $\left(\frac{g\ mole}{scm}\right)$ is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 (incorporated by reference as specified in § 60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in § 60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the

volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, V_{max}, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

V_{max} = Maximum permitted velocity, M/sec
28.8 = Constant
31.7 = Constant
H_T = The net heating value as determined in paragraph (f)(3).

(6) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$$V_{max} = 8.706 + 0.7084\,(H_T)$$

V_{max} = Maximum permitted velocity, m/sec
8.706 = Constant
0.7084 = Constant
H_T = The net heating value as determined in paragraph (f)(3).

[51 FR 2701, Jan. 21, 1986]

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

SOURCE: 40 FR 53346, Nov. 17, 1975, unless otherwise noted.

§ 60.20 Applicability.

The provisions of this subpart apply to States upon publication of a final guideline document under § 60.22(a).

§ 60.21 Definitions.

Terms used but not defined in this subpart shall have the meaning given them in the Act and in subpart A:

(a) *Designated pollutant* means any air pollutant, emissions of which are subject to a standard of performance for new stationary sources but for which air quality criteria have not been issued, and which is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act.

(b) *Designated facility* means any existing facility (see § 60.2(aa)) which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility (see § 60.2(e)).

(c) *Plan* means a plan under section 111(d) of the Act which establishes emission standards for designated pollutants from designated facilities and provides for the implementation and enforcement of such emission standards.

(d) *Applicable plan* means the plan, or most recent revision thereof, which has been approved under § 60.27(b) or promulgated under § 60.27(d).

(e) *Emission guideline* means a guideline set forth in Subpart C of this part, or in a final guideline document published under § 60.22(a), which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.

(f) *Emission standard* means a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, or prescribing equipment specifications for control of air pollution emissions.

(g) *Compliance schedule* means a legally enforceable schedule specifying a date or dates by which a source or category of sources must comply with specific emission standards contained in a plan or with any increments of progress to achieve such compliance.

(h) *Increments of progress* means steps to achieve compliance which must be taken by an owner or operator of a designated facility, including:

(1) Submittal of a final control plan for the designated facility to the appropriate air pollution control agency;

(2) Awarding of contracts for emission control systems or for process modifications, or issuance of orders for the purchase of component parts to accomplish emission control or process modification;

(3) Initiation of on-site construction or installation of emission control equipment or process change;

(4) Completion of on-site construction or installation of emission control equipment or process change; and

(5) Final compliance.

(i) *Region* means an air quality control region designated under section 107 of the Act and described in part 81 of this chapter.

(j) *Local agency* means any local governmental agency.

§ 60.22 Publication of guideline documents, emission guidelines, and final compliance times.

(a) Concurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities, the Administrator will publish a draft guideline document containing information pertinent to control of the designated pollutant form designated facilities. Notice of the availability of the draft guideline document will be published in the FEDERAL REGISTER and public comments on its contents will be invited. After consideration of public comments and upon or after promulgation of standards of performance for control of a designated pollutant from affected facilities, a final guideline document will be published and notice of its availability will be published in the FEDERAL REGISTER.

(b) Guideline documents published under this section will provide information for the development of State plans, such as:

(1) Information concerning known or suspected endangerment of public health or welfare caused, or contributed to, by the designated pollutant.

(2) A description of systems of emission reduction which, in the judgment of the Administrator, have been adequately demonstrated.

(3) Information on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities.

(4) Incremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems.

(5) An emission guideline that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved. The Administrator will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate.

(6) Such other available information as the Administrator determines may contribute to the formulation of State plans.

(c) Except as provided in paragraph (d)(1) of this section, the emission guidelines and compliance times referred to in paragraph (b)(5) of this section will be proposed for comment upon publication of the draft guideline document, and after consideration of comments will be promulgated in Subpart C of this part with such modifications as may be appropriate.

(d)(1) If the Administrator determines that a designated pollutant may cause or contribute to endangerment of public welfare, but that adverse effects on public health have not been demonstrated, he will include the determination in the draft guideline document and in the FEDERAL REGISTER notice of its availability. Except as provided in paragraph (d)(2) of this section, paragraph (c) of this section shall be inapplicable in such cases.

(2) If the Administrator determines at any time on the basis of new information that a prior determination under paragraph (d)(1) of this section is incorrect or no longer correct, he will publish notice of the determination in the FEDERAL REGISTER, revise the guideline document as necessary under paragraph (a) of this section, and propose and promulgate emission guidelines and compliance times under paragraph (c) of this section.

[40 FR 53346, Nov. 17, 1975, as amended at 54 FR 52189, Dec. 20, 1989]

§ 60.23 Adoption and submittal of State plans; public hearings.

(a)(1) Within nine months after notice of the availability of a final guideline document is published under § 60.22(a), each State shall adopt and submit to the Administrator, in accordance with § 60.4, a plan for the

APPENDIX B
40 CFR 60 Subpart QQQ
New Source Performance Standard
For Petroleum Refinery Wastewater Systems

§ 60.684 Recordkeeping and reporting requirements.

(a) At 30-minute intervals during each 2-hour test run of each performance test of a wet scrubber control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(a).

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in § 60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

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

(Approved by the Office of Management and Budget under control number 2060-0062)

§ 60.685 Test methods and procedures.

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

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in § 60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (C_s Q_{sd}) / (P_{avg} K)$$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C_s = concentration of particulate matter, g/dscm (g/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_{avg} = average glass pull rate, Mg/hr (ton/hr).

K = conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90 dscf).

(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates (P_i) shall be computed using the following equation:

$$P_i = K' L_s W_m M (1.0 - (LOI/100))$$

where:

P_i = glass pull rate at interval "i", Mg/hr (ton/hr).

L_s = line speed, m/min (ft/min).

W_m = trimmed mat width, m (ft).

M = mat gram weight, g/m² (lb/ft²).

LOI = loss on ignition, weight percent.

K' = conversion factor, 6×10^{-5} (min-Mg)/(hr-g) (3×10^{-5} (min-ton)/(hr-lb)).

(i) ASTM Standard Test Method D2584-68 (Reapproved 1979) (incorporated by reference—see § 60.17), shall be used to determine the LOI for each run.

(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with § 60.684(d), the owner or operator shall record measurements as required in § 60.684 (a) and (b) using the monitoring devices in § 60.683 (a) and (b) during the particulate matter runs.

[54 FR 6660, Feb. 14, 1989]

Subpart QQQ—Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

SOURCE: 53 FR 47623, Nov. 23, 1988, unless otherwise noted.

§ 60.690 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

(2) An individual drain system is a separate affected facility.

(3) An oil-water separator is a separate affected facility.

(4) An aggregate facility is a separate affected facility.

(b) Notwithstanding the provisions of 40 CFR 60.14(e)(2), the construction or installation of a new individual drain system shall constitute a modification to an affected facility described in § 60.690(a)(4). For purposes of this paragraph, a new individual drain system shall be limited to all process drains and the first common junction box.

§ 60.691 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in Subpart A of 40 CFR part 60, and the following terms shall have the specific meanings given them.

Active service means that a drain is receiving refinery wastewater from a process unit that will continuously maintain a water seal

Aggregate facility means an individual drain system together with ancillary downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator, as applicable.

Catch basin means an open basin which serves as a single collection point for stormwater runoff received directly from refinery surfaces and for refinery wastewater from process drains.

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

Completely closed drain system means an individual drain system that is not open to the atmosphere and is equipped and operated with a closed vent system and control device complying with the requirements of § 60.692-5.

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

Fixed roof means a cover that is mounted to a tank or chamber in a stationary manner and which does not move with fluctuations in wastewater levels.

Floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface.

Gas-tight means operated with no detectable emissions.

Individual drain system means all process drains connected to the first common downstream junction box. The term includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator.

Junction box means a manhole or access point to a wastewater sewer system line.

No detectable emissions means less than 500 ppm above background levels, as measured by a detection in-

strument in accordance with Method 21 in Appendix A of 40 CFR part 60.

Non-contact cooling water system means a once-through drain, collection and treatment system designed and operated for collecting cooling water which does not come into contact with hydrocarbons or oily wastewater and which is not recirculated through a cooling tower.

Oil-water separator means wastewater treatment equipment used to separate oil from water consisting of a separation tank, which also includes the forebay and other separator basins, skimmers, weirs, grit chambers, and sludge hoppers. Slop oil facilities, including tanks, are included in this term along with storage vessels and auxiliary equipment located between individual drain systems and the oil-water separator. This term does not include storage vessels or auxiliary equipment which do not come in contact with or store oily wastewater.

Oily wastewater means wastewater generated during the refinery process which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

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

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

Sewer line means a lateral, trunk line, branch line, ditch, channel, or other conduit used to convey refinery wastewater to downstream components of a refinery wastewater treatment system. This term does not include buried, below-grade sewer lines.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Storage vessel means any tank, reservoir, or container used for the storage of petroleum liquids, including oily wastewater.

Stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting stormwater and which is segregated from the process wastewater collection system.

Wastewater system means any component, piece of equipment, or installation that receives, treats, or processes oily wastewater from petroleum refinery process units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere.

§ 60.692-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.692-1 to 60.692-5 and with §§ 60.693-1 and 60.693-2, except during periods of startup, shutdown, or malfunction.

(b) Compliance with §§ 60.692-1 to 60.692-5 and with §§ 60.693-1 and 60.693-2 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.696.

(c) Permission to use alternative means of emission limitation to meet the requirements of §§ 60.692-2 through 60.692-4 may be granted as provided in § 60.694.

(d)(1) Stormwater sewer systems are not subject to the requirements of this subpart.

(2) Ancillary equipment, which is physically separate from the wastewater system and does not come in contact with or store oily wastewater, is not subject to the requirements of this subpart.

(3) Non-contact cooling water systems are not subject to the requirements of this subpart.

(4) An owner or operator shall demonstrate compliance with the exclusions in paragraphs (d)(1), (2), and (3) of this section as provided in § 60.697 (h), (i), and (j).

§ 60.692-2 Standards: Individual drain systems.

(a)(1) Each drain shall be equipped with water seal controls.

(2) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

(3) Except as provided in paragraph (a)(4) of this section, each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions.

(4) As an alternative to the requirements in paragraph (a)(3) of this section, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed.

(5) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in § 60.692-6.

(b)(1) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(2) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(3) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(4) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in § 60.692-6.

(c)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692-6.

(d) Except as provided in paragraph (e) of this section, each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section.

(e) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin.

§ 60.692-3 Standards: Oil-water separators.

(a) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart shall be equipped and operated with a fixed roof, which meets the following specifications, except as provided in paragraph (d) of this section or in § 60.693-2.

(1) The fixed roof shall be installed to completely cover the separator tank, slop oil tank, storage vessel, or other auxiliary equipment with no separation between the roof and the wall.

(2) The vapor space under a fixed roof shall not be purged unless the vapor is directed to a control device.

(3) If the roof has access doors or openings, such doors or openings shall be gasketed, latched, and kept closed at all times during operation of the separator system, except during inspection and maintenance.

(4) Roof seals, access doors, and other openings shall be checked by visual inspection initially and semiannually thereafter to ensure that no cracks or gaps occur between the roof

and wall and that access doors and other openings are closed and gasketed properly.

(5) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after it is identified, except as provided in § 60.692-6.

(b) Each oil-water separator tank or auxiliary equipment with a design capacity to treat more than 16 liters per second (250 gpm) of refinery wastewater shall, in addition to the requirements in paragraph (a) of this section, be equipped and operated with a closed vent system and control device, which meet the requirements of § 60.692-5, except as provided in paragraph (c) of this section or in § 60.693-2.

(c)(1) Each modified or reconstructed oil-water separator tank with a maximum design capacity to treat less than 38 liters per second (600 gpm) of refinery wastewater which was equipped and operated with a fixed roof covering the entire separator tank or a portion of the separator tank prior to May 4, 1987 shall be exempt from the requirements of paragraph (b) of this section, but shall meet the requirements of paragraph (a) of this section, or may elect to comply with paragraph (c)(2) of this section.

(2) The owner or operator may elect to comply with the requirements of paragraph (a) of this section for the existing fixed roof covering a portion of the separator tank and comply with the requirements for floating roofs in § 60.693-2 for the remainder of the separator tank.

(d) Storage vessels, including slop oil tanks and other auxiliary tanks that are subject to the requirements of 40 CFR Subparts K, Ka, or Kb, are not subject to the requirements of this section.

(e) Slop oil from an oil-water separator tank and oily wastewater from slop oil handling equipment shall be collected, stored, transported, recycled, reused, or disposed of in an enclosed system. Once slop oil is returned to the process unit or is disposed of, it is no longer within the scope of this subpart. Equipment used in handling slop oil shall be equipped with a fixed roof meeting the requirements of paragraph (a) of this section.

(f) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment that is required to comply with paragraph (a) of this section, and not paragraph (b) of this section, may be equipped with a pressure control valve as necessary for proper system operation. The pressure control valve shall be set at the maximum pressure necessary for proper system operation, but such that the value will not vent continuously.

§ 60.692-4 Standards: Aggregate facility.

A new, modified, or reconstructed aggregate facility shall comply with the requirements of §§ 60.692-2 and 60.692-3.

§ 60.692-5 Standards: Closed vent systems and control devices.

(a) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C (1,500°F).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

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

(e)(1) Closed vent systems shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined during the initial and semiannual inspections by the methods specified in § 60.696.

(2) Closed vent systems shall be purged to direct vapor to the control device.

(3) A flow indicator shall be installed on a vent stream to a control device to ensure that the vapors are being routed to the device.

(4) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(5) When emissions from a closed system are detected, first efforts at repair to eliminate the emissions shall be made as soon as practicable, but not later than 30 calendar days from the date the emissions are detected, except as provided in § 60.692-6.

§ 60.692-6 Standards: Delay of repair.

(a) Delay of repair of facilities that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial refinery or process unit shutdown.

(b) Repair of such equipment shall occur before the end of the next refinery or process unit shutdown.

§ 60.692-7 Standards: Delay of compliance.

(a) Delay of compliance of modified individual drain systems with ancillary downstream treatment components will be allowed if compliance with the provisions of this subpart cannot be achieved without a refinery or process unit shutdown.

(b) Installation of equipment necessary to comply with the provisions of this subpart shall occur no later than the next scheduled refinery or process unit shutdown.

§ 60.693-1 Alternative standards for individual drain systems.

(a) An owner or operator may elect to construct and operate a completely closed drain system.

(b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device complying with the requirements of § 60.692-5.

(c) An owner or operator must notify the Administrator in the report required in 40 CFR 60.7 that the owner or operator has elected to construct and operate a completely closed drain system.

(d) If an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692-2 or 60.694.

(e)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692-6.

§ 60.693-2 Alternative standards for oil-water separators.

(a) An owner or operator may elect to construct and operate a floating roof on an oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart which meets the following specifications.

(1) Each floating roof shall be equipped with a closure device between the wall of the separator and the roof edge. The closure device is to consist of a primary seal and a secondary seal.

(i) The primary seal shall be a liquid-mounted seal.

(A) A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the separator and the floating roof.

(B) The gap width between the primary seal and the separator wall shall not exceed 3.8 cm (1.5 in.) at any point.

(C) The total gap area between the primary seal and the separator wall shall not exceed 67 cm^2/m (3.2 $in.^2/ft$) of separator wall perimeter.

(ii) The secondary seal shall be above the primary seal and cover the annular space between the floating roof and the wall of the separator.

(A) The gap width between the secondary seal and the separator wall

shall not exceed 1.3 cm (0.5 in.) at any point.

(B) The total gap area between the secondary seal and the separator wall shall not exceed 6.7 cm^2/m (0.32 $in.^2/ft$) of separator wall perimeter.

(iii) The maximum gap width and total gap area shall be determined by the methods and procedures specified in § 60.696(d).

(A) Measurement of primary seal gaps shall be performed within 60 calendar days after initial installation of the floating roof and introduction of refinery wastewater and once every 5 years thereafter.

(B) Measurement of secondary seal gaps shall be performed within 60 calendar days of initial introduction of refinery wastewater and once every year thereafter.

(iv) The owner or operator shall make necessary repairs within 30 calendar days of identification of seals not meeting the requirements listed in paragraphs (a)(1) (i) and (ii) of this section.

(2) Except as provided in paragraph (a)(4) of this section, each opening in the roof shall be equipped with a gasketed cover, seal, or lid, which shall be maintained in a closed position at all times, except during inspection and maintenance.

(3) The roof shall be floating on the liquid (i.e., off the roof supports) at all times except during abnormal conditions (i.e., low flow rate).

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be fitted with a slotted membrane fabric cover that covers at least 90 percent of the drain opening area or a flexible fabric sleeve seal.

(5)(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions.

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in § 60.692-6.

(b) An owner or operator must notify the Administrator in the report required by 40 CFR 60.7 that the owner or operator has elected to construct and operate a floating roof under paragraph (a) of this section.

(c) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of § 60.692-3(a) shall be installed.

(d) Except as provided in paragraph (c) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692-3 or 60.694 applicable to the same facilities.

§ 60.694 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved by the applicable requirement in § 60.692, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

§ 60.695 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder shall be used to measure the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C (±1.0 °F), whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder shall be used to measure the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C (±1.0 °F), whichever is greater.

(3) Where a carbon adsorber is used for VOC emissions reduction, a monitoring device that continuously indicates and records the VOC concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(4) Where a flare is used for VOC emission reduction, the owner or operator shall comply with the monitoring requirements of 40 CFR 60.18(f)(2).

(b) Where a VOC recovery device other than a carbon adsorber is used to meet the requirements specified in § 60.692-5(a), the owner or operator shall provide to the Administrator information describing the operation of the control device and the process parameter(s) that would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements

(c) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

§ 60.696 Performance test methods and procedures and compliance provisions

(a) Before using any equipment installed in compliance with the requirements of §§ 60.692-2, 60.692-3, 60.692-4, 60.692-5, or 60.693, the owner or operator shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this subpart not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.

(b) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.692-5 (other than a flare) is exempt from § 60.8 of the General Provisions and shall use Method 21 to measure the emission concentrations, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using. The calibration gases shall be:

(1) Zero air (less than 10 ppm of hydrocarbon in air), and

(2) A mixture of either methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall conduct a performance test initially, and at other times as requested by the Administrator, using the test methods and procedures in § 60.18(f) to determine compliance of flares.

(d) After installing the control equipment required to meet § 60.693-2(a) or whenever sources that have ceased to treat refinery wastewater for a period of 1 year or more are placed back into service, the owner or operator shall determine compliance with the standards in § 60.693-2(a) as follows:

(1) The maximum gap widths and maximum gap areas between the primary seal and the separator wall and between the secondary seal and the separator wall shall be determined individually within 60 calendar days of the initial installation of the floating roof and introduction of refinery wastewater or 60 calendar days after the equipment is placed back into service using the following procedure

when the separator is filled to the design operating level and when the roof is floating off the roof supports.

(i) Measure seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the separator and measure the gap width and perimetrical distance of each such location.

(ii) The total surface area of each gap described in (d)(1)(i) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the wall to the seal and multiplying each such width by its respective perimetrical distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually, divide the sum for each seal by the nominal perimeter of the separator basin and compare each to the maximum gap area as specified in § 60.693-2.

(2) The gap widths and total gap area shall be determined using the procedure in paragraph (d)(1) of this section according to the following frequency:

(i) For primary seals, once every 5 years.

(ii) For secondary seals, once every year.

§ 60.697 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. All records shall be retained for a period of 2 years after being recorded unless otherwise noted.

(b)(1) For individual drain systems subject to § 60.692-2, the location, date, and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plug is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

(2) For junction boxes subject to § 60.692-2, the location, date, and corrective action shall be recorded for inspections required by § 60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

(3) For sewer lines subject to §§ 60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by §§ 60.692-2(c) and 60.693-1(c) when a problem is identified that could result in VOC emissions.

(c) For oil-water separators subject to § 60.692-3, the location, date, and corrective action shall be recorded for inspections required by by § 60.692-3(a) when a problem is identified that could result in VOC emissions.

(d) For closed vent systems subject to § 60.692-5 and completely closed drain systems subject to § 60.693-1, the location, date, and corrective action shall be recorded for inspections required by § 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions.

(e)(1) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded.

(2) The reason for the delay as specified in § 60.692-6 shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time.

(3) The signature of the owner or operator (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded.

(4) The date of successful repair or corrective action shall be recorded.

(f)(1) A copy of the design specifications for all equipment used to comply with the provisions of this subpart shall be kept for the life of the source in a readily accessible location.

(2) The following information pertaining to the design specifications shall be kept.

(i) Detailed schematics, and piping and instrumentation diagrams.

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

(3) The following information pertaining to the operation and maintenance of closed drain systems and

closed vent systems shall be kept in a readily accessible location.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions shall be kept for the life of the facility. This documentation is to include a general description of the gas streams that enter the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816°C (1,500°F) is used to meet the 95-percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters) shall be kept for the life of the facility.

(iii) Periods when the closed vent systems and control devices required in § 60.692 are not operated as designed, including periods when a flare pilot does not have a flame shall be recorded and kept for 2 years after the information is recorded.

(iv) Dates of startup and shutdown of the closed vent system and control devices required in § 60.692 shall be recorded and kept for 2 years after the information is recorded.

(v) The dates of each measurement of detectable emissions required in §§ 60.692, 60.693, or 60.692-5 shall be recorded and kept for 2 years after the information is recorded.

(vi) The background level measured during each detectable emissions measurement shall be recorded and kept for 2 years after the information is recorded.

(vii) The maximum instrument reading measured during each detectable emission measurement shall be recorded and kept for 2 years after the information is recorded.

(viii) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature, and shall keep such records for 2 years after the information is recorded.

(ix) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the design gas stream temperature, and records of all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference, and shall keep such records for 2 years after the information is recorded.

(x) Each owner or operator of an affected facility that uses a carbon adsorber shall maintain continuous records of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(g) If an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of active service, the owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains.

(h) For storm-water sewer systems subject to the exclusion in § 60.692-1(d)(1), an owner or operator shall keep for the life of the facility in a

readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692-1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonstrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692-1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower

(Approved by the Office of Management and Budget under control number 2060-0172)

§ 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

(Approved by the Office of Management and Budget under control number 2060-0172)

§ 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

Subpart RRR—[Reserved]

Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

Source: 53 FR 38914, Oct. 3, 1988, unless otherwise noted.

§ 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each coating operation; and

(2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 m^3 of solvent or any modified or reconstructed coating operation that utilizes less than 370 m^3 of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of § 60.714(a), § 60.717(b), and § 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

§ 60.711 Definitions, symbols, and cross reference tables

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in Subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)-(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

APPENDIX C

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the outlet continuous monitoring system;

(iii) Identification of times when hourly averages have been obtained based on manual sampling methods;

(iv) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; and

(v) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3.

(vi) Results of daily drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(5) If subject to § 60.104(b)(2), for each day in which a Method 8 sample result was not obtained, the date for which and brief explanation as to why a Method 8 sample result was not obtained, for approval by the Administrator.

(6) If subject to § 60.104(b)(3), for each 8-hour shift in which a feed sulfur measurement was not obtained, the date for which and brief explanation as to why a feed sulfur measurement was not obtained, for approval by the Administrator.

(d) If no exceedances (as defined in paragraphs (c)(1)(i) through (c)(1)(iii) and (c)(2) of this section) occur in a quarter, and if the owner or operator has not changed the standard under § 60.104(b) under which compliance is obtained, then the owner or operator may submit a semiannual report in which a statement is included that states that no exceedances had occurred during the affected quarter(s). If the owner or operator elects to comply with an alternative provision of § 60.104(b), a quarterly report must be submitted for the quarter during which a change occurred.

(e) For any periods for which sulfur dioxide or oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(f) The owner or operator of the affected facility shall submit a signed statement certifying the accuracy and completeness of the information contained in the report.

[Approved by the Office of Management and Budget under control number 2060-0061]

[54 FR 34029, Aug. 17, 1989]

§ 60.108 Performance test and compliance provisions.

(a) Section 60.8(d) shall apply to the initial performance test specified under paragraph (c) of this section, but not to the daily performance tests required thereafter as specified in § 60.108(d). Section 60.8(f) does not apply when determining compliance with the standards specified under § 60.104(b). Performance tests conducted for the purpose of determining compliance under § 60.104(b) shall be conducted according to the applicable procedures specified under § 60.106.

(b) Owners or operators who seek to comply with § 60.104(b)(3) shall meet that standard at all times, including periods of startup, shutdown, and malfunctions.

(c) The initial performance test shall consist of the initial 7-day average calculated for compliance with § 60.104(b)(1), (b)(2), or (b)(3).

(d) After conducting the initial performance test prescribed under § 60.8, the owner or operator of a fluid catalytic cracking unit catalyst regenerator subject to § 60.104(b) shall conduct a performance test for each successive 24-hour period thereafter. The daily performance tests shall be conducted according to the appropriate procedures specified under § 60.106. In the event that a sample collected under § 60.106(g) or (h) is accidentally lost or conditions occur in which one of the samples must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operators' control, compliance may be determined using available data for the 7-day period.

(e) Each owner or operator subject to § 60.104(b) who has demonstrated compliance with one of the provisions of § 60.104(b) but at a later date seeks to comply with another of the provisions of § 60.104(b) shall begin conducting daily performance tests as specified under paragraph (d) of this section immediately upon electing to become subject to one of the other provisions of § 60.104(b). The owner or operator shall furnish the Administrator a written notification of the change in a quarterly report that must be submitted for the quarter in which the change occurred.

[54 FR 34030, Aug. 17, 1989]

§ 60.109 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which shall not be delegated to States:

(1) Section 60.105(a)(13)(iii),

(2) Section 60.106(g)(12).

[54 FR 34031, Aug. 17, 1989]

Subpart K—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

§ 60.110 Applicability and designation of affected facility.

(a) Except as provided in § 60.110(b), the affected facility to which this subpart applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,412 liters (40,000 gallons).

(b) This subpart does not apply to storage vessels for petroleum or condensate stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

(c) Subject to the requirements of this subpart is any facility under paragraph (a) of this section which:

(1) Has a capacity greater than 151,416 liters (40,000 gallons), but not exceeding 246,052 liters (65,000 gallons), and commences construction or modification after March 8, 1974, and prior to May 19, 1978.

(2) Has a capacity greater than 246,052 liters (65,000 gallons) and commences construction or modification after June 11, 1973, and prior to May 19, 1978.

[42 FR 37937, July 25, 1977, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.111 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in Subpart A of this part.

(a) *Storage vessel* means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396-78, gas turbine fuel oils Nos. 2-GT through 4-GT as specified in ASTM D2880-78, or diesel fuel oils Nos. 2-D and 4-D as specified in ASTM D975-78. (These three methods are incorporated by reference—see §60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

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

(e) *Hydrocarbon* means any organic compound consisting predominantly of carbon and hydrogen.

(f) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(g) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(h) *Drilling and production facility* means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation-related equipment used in the production of petroleum but does not include natural gasoline plants.

(i) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see §60.17).

(j) *Floating roof* means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(k) *Vapor recovery system* means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(l) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323-82 (incorporated by reference—see § 60.17).

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr 17, 1974, as amended at 39 FR 20794, June 14, 1974; 45 FR 23379, Apr. 4, 1980; 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987]

§ 60.112 Standard for volatile organic compounds (VOC).

(a) The owner or operator of any storage vessel to which this subpart applies shall store petroleum liquids as follows:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.113 Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each affected facility which stores petroleum liquids with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) Each owner or operator of each affected facility equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112.

[45 FR 23379, Apr. 4, 1980]

Subpart Ka—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

§ 60.110a Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,416 liters (40,000 gallons) and for which construction is commenced after May 18, 1978.

(b) Each petroleum liquid storage vessel with a capacity of less than 1,589,873 liters (420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer is not an affected facility and, therefore, is exempt from the requirements of this subpart.

[45 FR 23379, Apr. 4, 1980]

§ 60.111a Definitions.

In addition to the terms and their definitions listed in the Act and Subpart A of this part the following definitions apply in this subpart:

(a) *Storage vessel* means each tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 204.9 kPa (15 psig) without emissions to the atmosphere except under emergency conditions.

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396-78, gas turbine fuel oils Nos. 2-GT through 4-GT as specified in ASTM D2880-78, gas turbine fuel oils Nos. 2-GT through 4-GT as specified in ASTM D2880-78, or diesel fuel oils Nos. 2-D and 4-D as specified in ASTM D975-78. (These three methods are incorporated by reference—see § 60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

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

(e) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(f) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid such as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see § 60.17).

(g) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323-82 (incorporated by reference—see § 60.17).

(h) *Liquid-mounted seal* means a foam or liquid-filled primary seal mounted in contact with the liquid between the tank wall and the floating roof continuously around the circumference of the tank.

(i) *Metallic shoe seal* includes but is not limited to a metal sheet held vertically against the tank wall by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(j) *Vapor-mounted seal* means a foam-filled primary seal mounted continuously around the circumference of the tank so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

(k) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

[45 FR 23379, Apr. 4, 1980, as amended at 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987]

§ 60.112a Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure equal to or greater than 10.3 kPa (1.5 psia) but not greater than 76.6 kPa (11.1 psia) shall equip the storage vessel with one of the following:

(1) An external floating roof, consisting of a pontoon-type or double-deck-type cover that rests on the surface of the liquid contents and is equipped with a closure device between the tank wall and the roof edge. Except as provided in paragraph (a)(1)(ii)(D) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal. The roof is to be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill and when the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(i) The primary seal is to be either a metallic shoe seal, a liquid-mounted seal, or a vapor-mounted seal. Each seal is to meet the following requirements:

(A) The accumulated area of gaps between the tank wall and the metallic shoe seal or the liquid-mounted seal shall not exceed 212 cm^2 per meter of tank diameter (10.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 3.81 cm (1½ in).

(B) The accumulated area of gaps between the tank wall and the vapor-mounted seal shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in).

(C) One end of the metallic shoe is to extend into the stored liquid and the other end is to extend a minimum vertical distance of 61 cm (24 in) above the stored liquid surface.

(D) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (a)(1)(ii)(B) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per ft. of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in.). There shall be no gaps between the tank wall and the secondary seal used in combination with a vapor-mounted primary seal.

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

(D) The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.

(iii) Each opening in the roof except for automatic bleeder vents and rim space vents is to provide a projection below the liquid surface. Each opening in the roof except for automatic bleeder vents, rim space vents and leg sleeves is to be equipped with a cover, seal or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use or as described in paragraph (a)(1)(iv) of this section. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting.

(iv) Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(2) A fixed roof with an internal floating type cover equipped with a continuous closure device between the tank wall and the cover edge. The cover is to be floating at all times, (i.e., off the leg supports) except during initial fill and when the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the cover is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. Each opening in the cover except for automatic bleeder vents and the rim space vents is to provide a projection below the liquid surface. Each opening in the cover except for automatic bleeder vents, rim space vents, stub drains and leg sleeves is to be equipped with a cover, seal, or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the cover is floating except when the cover is being floated off or is being landed on the leg supports. Rim vents are to be set to open only when the cover is being floated off the leg supports or at the manufacturer's recommended setting.

(3) A vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114a.

(b) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure greater than 76.6 kPa (11.1 psia), shall equip the storage vessel with a vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

[45 FR 23379, Apr. 4, 1980, as amended at 45 FR 83229, Dec. 18, 1980]

§ 60.113a Testing and procedures.

(a) Except as provided in § 60.8(b) compliance with the standard prescribed in § 60.112a shall be determined as follows or in accordance with an equivalent procedure as provided in § 60.114a.

(1) The owner or operator of each storage vessel to which this subpart applies which has an external floating roof shall meet the following requirements:

(i) Determine the gap areas and maximum gap widths between the primary seal and the tank wall and between the secondary seal and the tank wall according to the following frequency:

(A) For primary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum liquid and at least once every five years thereafter. All primary seal inspections or gap measurements which require the removal or dislodging of the secondary seal shall be accomplished as rapidly as possible and the secondary seal shall be replaced as soon as possible.

(B) For secondary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum

liquid and at least once every year thereafter.

(C) If any storage vessel is out of service for a period of one year or more, subsequent refilling with petroleum liquid shall be considered initial fill for the purposes of paragraphs (a)(1)(i)(A) and (a)(1)(i)(B) of this section.

(D) Keep records of each gap measurement at the plant for a period of at least 2 years following the date of measurement. Each record shall identify the vessel on which the measurement was performed and shall contain the date of the seal gap measurement, the raw data obtained in the measurement process required by paragraph (a)(1)(ii) of this section and the calculation required by paragraph (a)(1)(iii) of this section.

(E) If either the seal gap calculated in accord with paragraph (a)(1)(iii) of this section or the measured maximum seal gap exceeds the limitations specified by § 60.112a of this subpart, a report shall be furnished to the Administrator within 60 days of the date of measurements. The report shall identify the vessel and list each reason why the vessel did not meet the specifications of § 60.112a. The report shall also describe the actions necessary to bring the storage vessel into compliance with the specifications of § 60.112a.

(ii) Determine gap widths in the primary and secondary seals individually by the following procedures:

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

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

(C) The total surface area of each gap described in paragraph (a)(1)(ii)(B) of this section shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the appropriate ratio in the standard in § 60.112a(a)(1)(i) and § 60.112a(a)(1)(ii).

(iv) Provide the Administrator 30 days prior notice of the gap measurement to afford the Administrator the opportunity to have an observer present.

(2) The owner or operator of each storage vessel to which this subpart applies which has a vapor recovery and return or disposal system shall provide the following information to the Administrator on or before the date on which construction of the storage vessel commences:

(i) Emission data, if available, for a similar vapor recovery and return or disposal system used on the same type of storage vessel, which can be used to determine the efficiency of the system. A complete description of the emission measurement method used must be included.

(ii) The manufacturer's design specifications and estimated emission reduction capability of the system.

(iii) The operation and maintenance plan for the system.

(iv) Any other information which will be useful to the Administrator in evaluating the effectiveness of the system in reducing VOC emissions.

[45 FR 23379, Apr. 4, 1980, as amended at 52 FR 11429, Apr. 8, 1987]

§ 60.114a Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112a, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only

after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112a.

(e) The primary vapor-mounted seal in the "Volume-Maximizing Seal" manufactured by R.F.I. Services Corporation is approved as equivalent to the vapor-mounted seal required by § 60.112a(a)(1)(i) and must meet the gap criteria specified in § 60.112a(a)(1)(i)(B). There shall be no gaps between the tank wall and any secondary seal used in conjunction with the primary seal in the "Volume-Maximizing Seal".

[52 FR 11429, Apr. 8, 1987]

§ 60.115a Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each storage vessel storing a petroleum liquid with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) Each owner or operator of each storage vessel equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112a (a)(3) and (b).

[45 FR 23379, Apr. 4, 1980]

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 40 cubic meters (m^3) that is used to store volatile organic liquids (VOL's) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) Except as specified in paragraphs (a) and (b) of § 60.116b, storage vessels with design capacity less than 75 m^3 are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(c) Except as specified in paragraphs (a) and (b) of § 60.116b, vessels either with a capacity greater than or equal to 151 m^3 storing a liquid with a maxi-

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mum true vapor pressure less than 3.5 kPa or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in Subpart A of this part, or in this subpart as follows:

(a) *Bulk gasoline plant* means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

(b) *Condensate* means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(c) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

(d) *Fill* means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

(e) *Gasoline service station* means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

(f) *Maximum true vapor pressure* means the equilibrium partial pressure exerted by the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (*incorporated by reference—see* § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM Method D2879-83 (incorporated by reference—see § 60.17);

(4) Any other method approved by the Administrator.

(g) *Reid vapor pressure* means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82 (incorporated by reference—see § 60.17).

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

(i) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(j) *Storage vessel* means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or

(2) Subsurface caverns or porous rock reservoirs.

(k) *Volatile organic liquid (VOL)* means any organic liquid which can emit volatile organic compounds into

the atmosphere except those VOL's that emit only those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone. These compounds are identified in EPA statements on ozone abatement policy for SIP revisions (42 FR 35314, 44 FR 32042, 45 FR 32424, and 45 FR 48941).

(l) *Waste* means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The

sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following *specifications:*

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in § 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, Subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§ 60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in § 60.112b(a)

shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) After installing the control equipment required to meet § 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

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

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in § 60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

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

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

(b) After installing the control equipment required to meet

§ 60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

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

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

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

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

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

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

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

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4)(i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

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

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator

the opportunity to have an observer present.

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

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

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.112b (a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, § 60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the

reduction in emissions achieved by any requirement in § 60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with § 60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under § 60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§ 60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM Method D2879-83 (incorporated by reference—see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM Method D2879-83 (incorporated by reference—see § 60.17); or

(ii) ASTM Method D323-82 (incorporated by reference—see §60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specifications of § 60.112b is exempt from the requirements of paragraphs (c) and (d) of this section.

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Subpart L—Standards of Performance for Secondary Lead Smelters

§ 60.120 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary lead smelters: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.121 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in Subpart A of this part.

(a) *Reverberatory furnace* includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(b) *Secondary lead smelter* means any facility producing lead from a leadbearing scrap material by smelting to the metallic form.

(c) *Lead* means elemental lead or alloys in which the predominant component is lead.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974]

§ 60.122 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9317, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.123 Test methods and procedures.

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

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.122 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of furnace operation, including charging and tapping. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6667, Feb 14, 1989]

Subpart M—Standards of Performance for Secondary Brass and Bronze Production Plants

§ 60.130 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary brass or bronze production plants: Reverberatory and electric furnaces of 1,000 kg (2205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/h (550 lb/h) or greater production capacity. Furnaces from which molten brass or bronze are cast into the shape of finished products, such as foundry furnaces, are not considered to be affected facilities.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 49 FR 43618, Oct. 30, 1984]

§ 60.131 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in Subpart A of this part.

(a) *Brass or bronze* means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(b) *Reverberatory furnace* includes the following types of reverberatory furnaces: Stationary, rotating, rocking, and tilting.

(c) *Electric furnace* means any furnace which uses electricity to produce over 50 percent of the heat required in the production of refined brass or bronze.

(d) *Blast furnace* means any furnace used to recover metal from slag.

[39 FR 9318, Mar. 8, 1974]

§ 60.132 Standard for particulate matter.

(a) On and after the date on which the performance test required to be

APPENDIX D
Issues and Answers About Subpart QQQ

METHODOLOGY

"Issues and Answers About Subpart QQQ" were compiled through the review of documents addressing the proposal and promulgation of the standard, and through conversations with Regional and State enforcement personnel. Each issue that was identified from these sources has been addressed individually in the following section.

ISSUES AND ANSWERS ABOUT SUBPART QQQ

A. Determination of Affected Facility.

B. Emission Offsets for Individual Drain Systems.

C. Emission Offsets for Aggregate Facilities.

D. Existing Catch Basins and Exemptions to the Standard.

E. New Catch Basins and Individual Drain Systems.

F. Conflicts with Subparts QQQ K and K, Ka, and Kb Requirements for Storage Tanks.

G. Using Upgraded Emission Control on Subpart K Tanks as Offsets for Wastewater NSPS Compliance.

H. Applicability of NSPS to Lift and Pump Stations to NSPS.

I. Vents on Junction Boxes with Fire Baffles.

J. Controls on Auxiliary Oil-Water Separator Equipment.

K. Water Draws and Oil-Water Gauging From Slop Oil Tanks.

L. Wastewater Downstream from a Slop Oil Tank.

M. Regulation of Above Grade Collection Equipment.

N. Production of Oil Water During Tank Shutdowns.

O. Existing Catch Basins and New Individual Drain Systems.

A. ISSUE: DETERMINATION OF AFFECTED FACILITY

Section 60.14(e)(2) of the General Provisions for New Source Performance Standards states that an increase in the production rate of an existing facility is not considered a modification if the increase does not involve a capital expenditure. A capital expenditure for petroleum refineries is considered to by any expenditure greater than 7%. The refinery wastewater NSPS makes exceptions to this provision in regard to determining an affected facility for individual drain systems and aggregate facilities. How are the modification provisions applied in the NSPS for refinery wastewater systems?

ANSWER:

The addition of any **new** drain system that results in increased emissions shall be considered a modification to the aggregate facility, regardless of the capital expenditure provision.

Changes within an **existing** individual drain system that do not constitute a capital expenditure in the aggregate facility shall not be considered a modification of the aggregate facility.

Changes within an existing individual drain system that result in increased emissions shall be considered a modification to the individual drain system only.

Changes within an existing individual drain system that result in a capital expenditure as defined by the General Provisions shall be considered a modification to the individual drain system only.

B. ISSUE: EMISSION OFFSETS FOR INDIVIDUAL DRAIN SYSTEMS.

Individual drain systems can be modified by the addition of one of two drains. If this occurs, can the emissions created by the new drains be offset?

ANSWER:

Yes, emission offsets are allowed if new drains are added to an existing individual drain system, thereby causing the individual drain system to become a modified affected facility. However, the offsets are allowed only within that affected facility, and not in any other part of the wastewater system.

C. ISSUE: EMISSIONS OFFSETS FOR AGGREGATE FACILITIES.

Process changes or new equipment may result in the aggregate facility becoming a modification due to increased emissions and a capital expenditure. Can emissions created by the modification be offset?

ANSWER:

Yes, emission offsets are allowed only within the affected aggregate facility, and not in any other part of the wastewater system.

D. ISSUE: EXISTING CATCH BASINS AND EXEMPTIONS TO THE STANDARD.

Catch basins in refinery wastewater systems receive stormwater that has low organic content. Existing wastewater systems may have catch basins located between process drain systems junction boxes and the oil water separators. Are individual drain systems located upstream from the catch basin exempt from the standard if they are modified or reconstructed?

ANSWER:

Yes, if the individual drain systems and the catch basin were in place prior to May 4, 1987, the date of proposal.

E. ISSUE: NEW CATCH BASINS AND INDIVIDUAL DRAIN SYSTEMS.

How would the regulation affect catch basins constructed after May 4, 1987?

ANSWER:

A catch basin constructed after the proposal date shall not receive any process wastewater from new or existing individual drain systems. The new catch basin shall receive only stormwater.

F. ISSUE: CONFLICTS WITH SUBPARTS QQQ AND K, Ka, AND Kb REQUIREMENTS FOR STORAGE TANKS.

The refinery wastewater NSPS calls for controls on slop oil tanks associated with aggregate facilities and oil water separators. The NSPS for volatile organic liquid (VOL) storage vessels also calls for controls on these tanks. Are slop tanks and other associated storage tanks controlled by the storage vessel NSPS exempt from additional control by the wastewater NSPS?

ANSWER:

Yes. Storage vessels that are controlled under the K Subparts are exempt from all of the requirements of Subpart QQQ.

G. ISSUE: USING UPGRADED EMISSION CONTROL ON SUBPART K TANKS AS OFFSETS FOR WASTEWATER NSPS COMPLIANCE.

Since the NSPS for refinery wastewater exempts all tanks controlled by Subpart K, can upgraded controls resulting in reduced emissions be used as offsets in the refinery wastewater NSPS?

ANSWER:

Yes. Even though tanks controlled by the Subpart K standards will not be subject to further control by the Subpart QQQ standards, refineries may choose to upgrade the existing controls on the Subpart K tanks for the purposes of offsetting emissions in affected aggregate facilities or oil water separators.

H. ISSUE: APPLICABILITY OF LIFT AND PUMP STATIONS TO NSPS.

Wastewater systems often include lift and pump stations. These were not specifically identified in the regulation. How are lift and pump stations regulated?

ANSWER:

Lift and pump stations are considered to be part of the individual drain system and not auxiliary equipment. Lift stations and pump stations should be considered as junction boxes, and controlled as required by the standards for junction boxes.

I. ISSUE: VENTS ON JUNCTION BOXES WITH FIRE BAFFLES.

Junction boxes can be constructed with fire baffles that create two separate compartments within the junction box. Can both sides of the junction box be vented?

ANSWER:

Yes. The baffles essentially create two junction boxes. Both sides of the box can therefore be vented as if each side were an individual box.

J. ISSUE: CONTROLS ON AUXILIARY OIL-WATER SEPARATOR EQUIPMENT.

Oil-water separators are often preceded by bar screens, splitter boxes, weirs, and other auxiliary equipment. Maintenance of this equipment may make it difficult to control emissions using control techniques applicable to oil-water separators. Is this equipment subject to control by the NSPS?

ANSWER:

Yes, this equipment is subject to the same control as the oil-water separator. However, the NSPS does allow for alternative controls to be used, which would minimize maintenance problems. For example, separators treating 250 gal/min of wastewater or more must be controlled with a fixed roof with vapors vented to a control device. This also applies to the auxiliary equipment. The standard does allow for floating roofs to be used as equivalent control in lieu of the fixed roof with vapors vented to a control device. If a floating roof is used on the separator, then only fixed roofs would be needed on the auxiliary equipment with no venting to control devices required. Access doors can be used on the auxiliary equipment as long as they are gaskets are installed, and doors are latched and kept closed during operation, allowing for normal inspection and maintenance.

K. ISSUE: WATER DRAWS AND OIL-WATER GAUGING FROM SLOP OIL TANKS.

The NSPS requires that "...oily wastewater from slop oil handling equipment be collected, stored, transported, recycled, reused, or disposed of in an enclosed system." A literal interpretation of this rule would not allow for visual inspection of water draws and oil water gauging that is common in industry practice. Can operators visually inspect water draws, therefore violating the integrity of the "closed system."

ANSWER:

Yes, if there is no other technically feasible alternative available at the site for monitoring the drawdowns. However, the system shall be operated in a closed manner during all other periods of operation.

L. ISSUE: WASTEWATER DOWNSTREAM FROM A SLOP OIL TANK.

A slop oil tank is used to separate water and oil from process units. The water from the slop oil tank is pumped directly to an equalization basin that is located downstream from the secondary oil-water separator. Are the facilities downstream from the slop tank subject to the regulations?

ANSWER:

If the wastewater is pumped directly to the equalization basin that is located downstream from the oil-water separator, no other facilities are affected by the regulations. The assumption is made that the

quality of water drawn from the slop oil tank is adequate to bypass the API separators, and therefore will have low concentrations of VOC.

If the wastewater was pumped to a facility located upstream of the API separator, then all facilities downstream from the slop tanks up to and including the primary and secondary API separators would be impacted.

M. ISSUE: REGULATION OF ABOVE GRADE COLLECTION EQUIPMENT.

Facilities may occasionally include water collection vessels that are located above grade. Examples of these vessels would include water drain sumps and sealed drain funnels. Are these vessels impacted by the standards?

ANSWER:

No, collection equipment above grade is not subject to the regulations.

N. ISSUE: PRODUCTION OF OILY WATER DURING TANK SHUTDOWNS.

As a matter of refinery practice, excess oily water can be generated because of tank shutdowns and maintenance. Tank shutdowns may occur every 10-15 years. Does the production of this excess wastewater cause the facility to become a modification or reconstruction, and therefore an affected facility?

ANSWER:

No, because the increased production of oily wastewater is not the result of a capital expenditure.

O. ISSUE: EXISTING CATCH BASINS AND NEW INDIVIDUAL DRAIN SYSTEMS.

Can an new individual drain system that includes new drains and a new common downstream junction box be exempt from the standard if it is routed through an existing catch basin?

ANSWER:

No, the regulation prohibits routing of any new individual drain system through an existing catch basin. However, any new drains added to an individual drain system that is connected to a catch basin that was in the wastewater configuration prior to May 4, 1987 are exempt.

APPENDIX E
Test Methods

1. Reference Method 21
2. Gap Measurement Instructions

in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as follows:

7.2.1 Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation.

$$\frac{F_o = 0.209}{\frac{F_d}{F_c}} \qquad \text{Eq. 20-2}$$

where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air, dimensionless.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu).

F_c = Ratio of the volume of carbon dioxide produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu).

7.2.2 Calculate the CO_2 correction factor for correcting measurement data to 15 percent oxygen, as follows:

$$X_{co_2} = \frac{5.9}{F_o} \qquad \text{Eq. 20-3}$$

where:

X_{co_2} = CO_2 Correction factor, percent.

5.9 = 20.9 percent O_2 − 15 percent O_2, the defined O_2 correction value, percent.

7.3 Correction of Pollutant Concentrations to 15 percent O_2. Calculate the NO_x and SO_2 gas concentrations adjusted to 15 percent O_2 using Equation 20-4 or 20-5, as appropriate. The correction to 15 percent O_2 is very sensitive to the accuracy of the O_2 or CO_2 concentration measurement. At the level of the analyzer drift specified in Section 3, the O_2 or CO_2 correction can exceed 5 percent at the concentration levels expected in gas turbine exhaust gases. Therefore, O_2 or CO_2 analyzer stability and careful calibration are necessary.

7.3.1 Correction of Pollutant Concentration Using O_2 Concentration. Calculate the O_2 corrected pollutant concentration, as follows:

$$C_{adj} = C_d \frac{5.9}{20.9 - \%O_2} \qquad \text{Eq. 20-4}$$

where:

C_{adj} = Pollutant concentration corrected to 15 percent O_2, ppm.

C_d = Pollutant concentration measured, dry basis, ppm.

$\%O_2$ = Measured O_2 concentration dry basis, percent.

7.3.2 Correction of Pollutant Concentration Using CO_2 Concentration. Calculate the CO_2 corrected pollutant concentration, as follows:

$$C_{adj} = C_d \frac{X_{co_2}}{\%CO_2} \qquad \text{Eq. 20-5}$$

where:

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

7.4 Average Adjusted NO_x Concentration. Calculate the average adjusted NO_x concentration by summing the adjusted values for each sample point and dividing by the number of points for each run.

7.5 NO_x and SO_2 Emission Rate Calculations. The emission rates for NO_x and SO_2 in units of pollutant mass per quantity of heat input can be calculated using the pollutant and diluent concentrations and fuel-specific F-factors based on the fuel combustion characteristics. The measured concentrations of pollutant in units of parts per million by volume (ppm) must be converted to mass per unit volume concentration units for these calculations. Use the following table for such conversions:

CONVERSION FACTORS FOR CONCENTRATION

From	To	Multiply by
g/scm³	ng/scm³	10^9
mg/scm³	ng/scm³	10^6
lb/scf	ng/scm³	1.602×10^{11}
ppm (SO_2)	ng/scm³	2.660×10^6
ppm (NO_2)	ng/scm³	1.912×10^6
ppm (SO_2)	lb/scf	1.660×10^{-7}
ppm (NO_2)	lb/scf	1.194×10^{-7}

7.5.1 Calculation of Emission Rate Using Oxygen Correction. Both the O_2 concentration and the pollutant concentration must be on a dry basis. Calculate the pollutant emission rate, as follows:

$$E = C_d F_o \frac{20.9}{20.9 - \%O_2} \qquad \text{Eq. 20-6}$$

where:

E = Mass emission rate of pollutant, ng/J ($lb/10^6$ Btu).

7.5.2 Calculation of Emission Rate Using Carbon Dioxide Correction. The CO_2 concentration and the pollutant concentration may be on either a dry basis or a wet basis, but both concentrations must be on the same basis for the calculations. Calculate the pollutant emission rate using Equation 20-7 or 20-8:

$$E = C_d F_c \frac{100}{\%CO_2} \qquad \text{Eq. 20-7}$$

$$E = C_w F_c \frac{100}{\%CO_{2w}} \qquad \text{Eq. 20-8}$$

where:

C_w = Pollutant concentration measured on a moist sample basis, ng/sm^3 (lb/scf).

$\%CO_{2w}$ = Measured CO_2 concentration measured on a moist sample basis, percent.

8. *Bibliography*

1. Curtis, F. A Method for Analyzing NO_x Cylinder Gases-Specific Ion Electrode Procedure, Monograph available from Emission Measurement Laboratory, ESED, Research Triangle Park, NC 27711, October 1978.

2. Sigsby, John E., F. M. Black, T. A. Bellar, and D. L. Klosterman. Chemiluminescent Method for Analysis of Nitrogen Compounds in Mobile Source Emissions (NO, NO_2, and NH_3). "Environmental Science and Technology," 7:51-54. January 1973.

3. Shigehara, R.T., R.M. Neulicht, and W.S. Smith. Validating Orsat Analysis Data from Fossil Fuel-Fired Units. Emission Measurement Branch, Emission Standards and Engineering Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. June 1975.

METHOD 21—DETERMINATION OF VOLATILE ORGANIC COMPOUNDS LEAKS

1. *Applicability and Principle*

1.1 Applicability. This method applies to the determination of volatile organic compound (VOC) leaks from process equipment. These sources include, but are not limited to, valves, flanges and other connections, pumps and compressors, pressure relief devices, process drains, open-ended valves, pump and compressor seal system degassing vents, accumulator vessel vents, agitator seals, and access door seals.

1.2 Principle. A portable instrument is used to detect VOC leaks from individual sources. The instrument detector type is not specified, but it must meet the specifications and performance criteria contained in Section 3. A leak definition concentration based on a reference compound is specified in each applicable regulation. This procedure is intended to locate and classify leaks only, and is not to be used as a direct measure of mass emission rates from individual sources.

2. *Definitions*

2.1 Leak Definition Concentration. The local VOC concentration at the surface of a leak source that indicates that a VOC emission (leak) is present. The leak definition is an instrument meter reading based on a reference compound.

2.2 Reference Compound. The VOC species selected as an instrument calibration basis for specification of the leak definition concentration. (For example, if a leak definition concentration is 10,000 ppmv as methane, then any source emission that results in a local concentration that yields a meter reading of 10,000 on an instrument calibrated with methane would be classified as a leak. In this example, the leak definition is 10,000 ppmv, and the reference compound is methane.)

2.3 Calibration Gas. The VOC compound used to adjust the instrument meter reading to a known value. The calibration gas is usually the reference compound at a concentration approximately equal to the leak definition concentration.

2.4 No Detectable Emission. Any VOC concentration at a potential leak source (adjusted for local VOC ambient concentration) that is less than a value corresponding to the instrument readability specification of section 3.1.1(c) indicates that a leak is not present.

2.5 Response Factor. The ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the reference compound specified in the application regulation.

2.6 Calibration Precision. The degree of agreement between measurements of the same known value, expressed as the relative percentage of the average difference between the meter readings and the known concentration to the known concentration.

2.7 Response Time. The time interval from a step change in VOC concentration at the input of the sampling system to the time at which 90 percent of the corresponding final value is reached as displayed on the instrument readout meter.

3. *Apparatus*

3.1 Monitoring Instrument.

3.1.1 *Specifications*

a. The VOC instrument detector shall respond to the compounds being processed. Detector types which may meet this re-

quirement include, but are not limited to, catalytic oxidation, flame ionization, infrared absorption, and photoionization.

b. Both the linear response range and the measurable range of the instrument for each of the VOC to be measured, and for the VOC calibration gas that is used for calibration, shall encompass the leak definition concentration specified in the regulation. A dilution probe assembly may be used to bring the VOC concentration within both ranges; however, the specifications for instrument response time and sample probe diameter shall still be met.

c. The scale of the instrument meter shall be readable to ±2.5 percent of the specified leak definition concentration when performing a no detectable emission survey.

d. The instrument shall be equipped with an electrically driven pump to insure that a sample is provided to the detector at a constant flow rate. The nominal sample flow rate, as measured at the sample probe tip, shall be 0.10 to 3.0 liters per minute when the probe is fitted with a glass wool plug or filter that may be used to prevent plugging of the instrument.

e. The instrument shall be intrinsically safe as defined by the applicable U.S.A. standards (e.g., National Electric Code by the National Fire Prevention Association) for operation in any explosive atmospheres that may be encountered in its use. The instrument shall, at a minimum, be intrinsically safe for Class 1, Division 1 conditions, and Class 2, Division 1 conditions, as defined by the example Code. The instrument shall not be operated with any safety device, such as an exhaust flame arrestor, removed.

f. The instrument shall be equipped with a probe or probe extension for sampling not to exceed ¼ in. in outside diameter, with a single end opening for admission of sample.

3.1.2 Performance Criteria.

(a) The instrument response factors for each of the VOC to be measured shall be less than 10. When no instrument is available that meets this specification when calibrated with the reference VOC specified in the applicable regulation, the available instrument may be calibrated with one of the VOC to be measured, or any other VOC, so long as the instrument then has a response factor of less than 10 for each of the VOC to be measured.

(b) The instrument response time shall be equal to or less than 30 seconds. The instrument pump, dilution probe (if any), sample probe, and probe filter, that will be used during testing, shall all be in place during the response time determination.

c. The calibration precision must be equal to or less than 10 percent of the calibration gas value.

d. The evaluation procedure for each parameter is given in Section 4.4.

3.1.3 Performance Evaluation Requirements.

a. A response factor must be determined for each compound that is to be measured, either by testing or from reference sources. The response factor tests are required before placing the analyzer into service, but do not have to be repeated at subsequent intervals.

b. The calibration precision test must be completed prior to placing the analyzer into service, and at subsequent 3-month intervals or at the next use whichever is later.

c. The response time test is required prior to placing the instrument into service. If a modification to the sample pumping system or flow configuration is made that would change the response time, a new test is required prior to further use.

3.2 Calibration Gases. The monitoring instrument is calibrated in terms of parts per million by volume (ppmv) of the reference compound specified in the applicable regulation. The calibration gases required for monitoring and instrument performance evaluation are a zero gas (air, less than 10 ppmv VOC) and a calibration gas in air mixture approximately equal to the leak definition specified in the regulation. If cylinder calibration gas mixtures are used, they must be analyzed and certified by the manufacturer to be within ±2 percent accuracy, and a shelf life must be specified. Cylinder standards must be either reanalyzed or replaced at the end of the specified shelf life. Alternately, calibration gases may be prepared by the user according to any accepted gaseous standards preparation procedure that will yield a mixture accurate to within ±2 percent. Prepared standards must be replaced each day of use unless it can be demonstrated that degradation does not occur during storage.

Calibrations may be performed using a compound other than the reference compound if a conversion factor is determined for that alternative compound so that the resulting meter readings during source surveys can be converted to reference compound results.

4. *Procedures*

4.1 Pretest Preparations. Perform the instrument evaluation procedures given in Section 4.4 if the evaluation requirements of Section 3.1.3 have not been met.

4.2 Calibration Procedures. Assemble and start up the VOC analyzer according to the manufacturer's instructions. After the appropriate warmup period and zero internal calibration procedure, introduce the calibration gas into the instrument sample probe. Adjust the instrument meter readout to correspond to the calibration gas value.

NOTE: If the meter readout cannot be adjusted to the proper value, a malfunction of the analyzer is indicated and corrective actions are necessary before use.

4.3 Individual Source Surveys.

4.3.1 Type I—Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

a. Valves—The most common source of leaks from valves is at the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

b. Flanges and Other Connections—For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.

c. Pumps and Compressors—Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.

d. Pressure Relief Devices—The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.

e. Process Drains—For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.

f. Open-Ended Lines or Valves—Place the probe inlet at approximately the center of the opening to the atmosphere.

g. Seal System Degassing Vents and Accumulator Vents—Place the probe inlet at approximately the center of the opening to the atmosphere.

h. Access Door Seals—Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

4.3.2 Type II—"No Detectable Emission" Determine the local ambient concentration around the source by moving the probe inlet randomly upwind and downwind at a distance of one to two meters from the source. If an interference exists with this determination due to a nearby emission or leak, the local ambient concentration may be determined at distances closer to the source, but in no case shall the distance be less than 25 centimeters. Then move the probe inlet to the surface of the source and determine the concentration described in 4.3.1. The difference between these concentrations determines whether there are no detectable emissions. Record and report the results as specified by the regulation.

For those cases where the regulation requires a specific device installation, or that specified vents be ducted or piped to a control device, the existence of these conditions shall be visually confirmed. When the regulation also requires that no detectable emissions exist, visual observations and sampling surveys are required. Examples of this technique are:

(a) Pump or Compressor Seals—If applicable, determine the type of shaft seal. Perform a survey of the local area ambient VOC concentration and determine if detectable emissions exist as described above.

(b) Seal System Degassing Vents, Accumulator Vessel Vents, Pressure Relief Devices—If applicable, observe whether or not the applicable ducting or piping exists. Also, determine if any sources exist in the ducting or piping where emissions could occur prior to the control device. If the required ducting or piping exists and there are no sources where the emissions could be vented to the atmosphere prior to the control device, then it is presumed that no detectable emissions are present. If there are sources in the ducting or piping where emissions could be vented or sources where leaks could occur, the sampling surveys described in this paragraph shall be used to determine if detectable emissions exist.

4.3.3 Alternative Screening Procedure. A screening procedure based on the formation of bubbles in a soap solution that is sprayed on a potential leak source may be used for those sources that do not have continuously moving parts, that do not have surface temperatures greater than the boiling point or less than the freezing point of the soap solution, that do not have open areas to the atmosphere that the soap solution cannot bridge, or that do not exhibit evidence of

liquid leakage. Sources that have these conditions present must be surveyed using the instrument techniques of 4.3.1 or 4.3.2.

Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or a squeeze bottle may be used to dispense the solution. Observe the potential leak sites to determine if any bubbles are formed. If no bubbles are observed, the source is presumed to have no detectable emissions or leaks as applicable. If any bubbles are observed, the instrument techniques of 4.3.1 or 4.3.2 shall be used to determine if a leak exists, or if the source has detectable emissions, as applicable.

4.4 Instrument Evaluation Procedures. At the beginning of the instrument performance evaluation test, assemble and start up the instrument according to the manufacturer's instructions for recommended warmup period and preliminary adjustments.

4.4.1 Response Factor. Calibrate the instrument with the reference compound as specified in the applicable regulation. For each organic species that is to be measured during individual source surveys, obtain or prepare a known standard in air at a concentration of approximately 80 percent of the applicable leak definition unless limited by volatility or explosivity. In these cases, prepare a standard at 90 percent of the saturation concentration, or 70 percent of the lower explosive limit, respectively. Introduce this mixture to the analyzer and record the observed meter reading. Introduce zero air until a stable reading is obtained. Make a total of three measurements by alternating between the known mixture and zero air. Calculate the response factor for each repetition and the average response factor.

Alternatively, if response factors have been published for the compounds of interest for the instrument or detector type, the response factor determination is not required, and existing results may be referenced. Examples of published response factors for flame ionization and catalytic oxidation detectors are included in Section 5.

4.4.2 Calibration Precision. Make a total of three measurements by alternately using zero gas and the specified calibration gas. Record the meter readings. Calculate the average algebraic difference between the meter readings and the known value. Divide this average difference by the known calibration value and mutiply by 100 to express the resulting calibration precision as a percentage.

4.4.3 Response Time. Introduce zero gas into the instrument sample probe. When the meter reading has stabilized, switch quickly to the specified calibration gas. Measure the time from switching to when 90 percent of the final stable reading is attained. Perform this test sequence three times and record the results. Calculate the average response time.

5. *Bibliography*

5.1 DuBose, D.A., and G.E. Harris Response Factors of VOC Analyzers at a Meter Reading of 10,000 ppmv for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2-81-051. September 1981.

5.2 Brown, G.E., et al. Response Factors of VOC Analyzers Calibrated with Methane for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2-81-022. May 1981.

5.3 DuBose, D.A., et al. Response of Portable VOC Analyzers to Chemical Mixtures U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No EPA 600/2-81-110. September 1981.

Method 22—Visual Determination of Fugitive Emissions From Material Sources and Smoke Emissions from Flares

1. *Introduction*

This method involves the visual determination of fugitive emissions, i.e., emissions not emitted directly from a process stack or duct. Fugitive emissions include emissions that (1) escape capture by process equipment exhaust hoods; (2) are emitted during material transfer; (3) are emitted from buildings housing material processing or handling equipment; and (4) are emitted directly from process equipment. This method is used also to determine visible smoke emissions from flares used for combustion of waste process materials.

This method determines the amount of time that any visible emissions occur during the observation period, i.e., the accumulated emission time. This method does not require that the opacity of emissions be determined. Since this procedure requires only the determination of whether a visible emission occurs and does not require the determination of opacity levels, observer certification according to the procedures of Method 9 are not required. However, it is necessary that the observer is educated on the general procedures for determining the presence of visible emissions. As a minimum, the observer must be trained and knowledgeable regarding the effects on the visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor). This training is to be obtained from written materials found in References 7.1 and 7.2 or from the lecture portion of the Method 9 certification course.

2. *Applicability and Principle*

2.1 Applicability. This method applies to the determination of the frequency of fugitive emissions from stationary sources (located indoors or outdoors) when specified as the test method for determining compliance with new source performance standards.

This method also is applicable for the determination of the frequency of visible smoke emissions from flares.

2.2 Principle. Fugitive emissions produced during material processing, handling, and transfer operations or smoke emissions from flares are visually determined by an observer without the aid of instruments.

3. *Definitions*

3.1 Emission Frequency. Percentage of time that emissions are visible during the observation period.

3.2 Emission Time. Accumulated amount of time that emissions are visible during the observation period.

3.3 Fugitive Emissions. Pollutant generated by an affected facility which is not collected by a capture system and is released to the atmosphere.

3.4 Smoke Emissions. Pollutant generated by combustion in a flare and occurring immediately downstream of the flame. Smoke occurring within the flame, but not downstream of the flame, is not considered a smoke emission.

3.5 Observation Period. Accumulated time period during which observations are conducted, not to be less than the period specified in the applicable regulation.

4. *Equipment*

4.1 Stopwatches. Accumulative type with unit divisions of at least 0.5 seconds; two required.

4.2 Light Meter. Light meter capable of measuring illuminance in the 50- to 200-lux range; required for indoor observations only.

5. *Procedure*

5.1 Position. Survey the affected facility or building or structure housing the process to be observed and determine the locations of potential emissions. If the affected facility is located inside a building, determine an observation location that is consistent with the requirements of the applicable regulation (i.e., outside observation of emissions escaping the building/structure or inside observation of emissions directly emitted from the affected facility process unit). Then select a position that enables a clear view of the potential emission point(s) of the affected facility or of the building or structure housing the affected facility, as appropriate for the applicable subpart. A position at least 15 feet, but not more than 0.25 miles, from the emission source is recommended. For outdoor locations, select a position where the sun is not directly in the observer's eyes.

5.2 Field Records.

5.2.1 Outdoor Location. Record the following information on the field data sheet (Figure 22-1): company name, industry process unit, observer's name, observer's affiliation, and date. Record also the estimated wind speed, wind direction, and sky condition. Sketch the process unit being observed and note the observer location relative to the source and the sun. Indicate the potential and actual emission points on the sketch.

5.2.2 Indoor Location. Record the following information on the field data sheet (Figure 22-2): company name, industry process unit, observer's name, observer's affiliation, and date. Record as appropriate the type, location, and intensity of lighting on the data sheet. Sketch the process unit being observed and note observer location relative to the source. Indicate the potential and actual fugitive emission points on the sketch.

5.3 Indoor Lighting Requirements. For indoor locations, use a light meter to measure the level of illumination at a location as close to the emission source(s) as is feasible. An illumination of greater than 100 lux (10 foot candles) is considered necessary for proper application of this method.

5.4 Observations. Record the clock time when observations begin. Use one stopwatch to monitor the duration of the observation period; start this stopwatch when the observation period begins. If the observation period is divided into two or more segments by process shutdowns or observer rest breaks, stop the stopwatch when a break begins and restart it without resetting when the break ends. Stop the stopwatch at the end of the observation period. The accumulated time indicated by this stopwatch is the duration of the observation period. When the observation period is completed, record the clock time.

During the observation period, continuously watch the emission source. Upon observing an emission (condensed water vapor is not considered an emission), start the second accumulative stopwatch, stop the watch when the emission stops. Continue this procedure for the entire observation period. The accumulated elapsed time on this stopwatch is the total time emissions were visible during the observation period, i.e., the emission time.

5.4.1 Observation Period. Choose an observation period of sufficient length to meet the requirements for determining compliance with the emission regulation in the applicable subpart. When the length of the observation period is specifically stated in the

GAP MEASUREMENT WORKSHEET

When floating roofs are used as an alternative emission control for oil-water separators, gap measurements must be conducted periodically to insure maximum emission reduction. This worksheet provides guidelines for conducting gap measurements of the seals.

Primary Seals

Inspection Intervals:	Within 60 days of installation and every 5 years.
Gap Width Criteria:	Gaps not to exceed 3.8 cm (1.5 in.) at any point.
Gap Length Criteria:	Area not to exceed 67 cm^2/m (0.32 in^2/ft) of separator wall perimeter.

Secondary Seals

Inspection Intervals:	Within 60 days of installation and every year.
Gap Width Criteria:	Gaps not to exceed 1.3 cm (0.5 in.) at any point.
Gap Length Criteria:	Area not to exceed 6.7 cm^2/m (0.32 in^2/ft) of separator wall perimeter.

Procedure

For each primary and secondary seal, proceed as follows:

1. Measure the seal gaps around the entire perimeter of the separator in each place where a 0.32-cm (0.125 in.) diameter uniform probe passes freely between the seal and the wall, without forcing or binding against the seal.
2. Record the actual gap width and the perimetrical distance of the gap.
3. Add the gap surface area for each gap location.
4. Divide the sum of the gaps by the nominal perimeter of the separator basin.
5. Check all gap widths and total gap area for compliance with the standard.

Calculations (use centimeters or inches)

Gap width	x	Gap length	=	Gap Area
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____

Sum of gap areas _____

Nominal perimeter of basin (use meters or feet) _____

Sum of Gap Area ÷ Perimeter = _____

APPENDIX F

Appendix F is designed to be a collection of forms that the inspector can use to conduct a compliance inspection. This section can be copied as needed for numerous inspections. Included in the appendix are the following forms:

TABLE F-1. APPLICABILITY CHECKLIST

I. GENERAL

a. Construction, modification, or reconstruction of the refinery wastewater system commenced after May 4, 1987.

____ **Yes, the facility is subject to the NSPS, proceed to Sections II, III, IV and V.**
____ No, the facility is exempt from the NSPS.

II. NEW INDIVIDUAL DRAIN SYSTEMS (IDS)

a. The new individual drain system will handle wastewater containing hydrocarbons.

____ **Yes, the facility must meet the requirements of the standard for an aggregate facility, regardless of the capital expenditure.**
____ No, the drain system will handle only noncontact cooling water or stormwater and is exempt from the standard.

III. MODIFIED OR RECONSTRUCTED INDIVIDUAL DRAIN SYSTEMS (IDS)

a. The modified/reconstructed IDS drains directly into the main sewer system, and there is not an existing catch basin as part of the configuration of the existing drain system.

____ **Yes, go to III-b.**
____ No, there is a catch basin in the configuration that was present prior to May 4, 1987, the IDS is exempt from the standard.

b. The modified/reconstructed IDS results in an emission increase and a capital expenditure.

____ **Yes, the IDS is subject to the standard, go to III-c.**
____ No, the IDS is not an affected facility.

c. Emission increases created by the modified/reconstructed IDS can be offset elsewhere in the aggregate facility.

____ **Yes, only the IDS is subject to the standard.**
____ No, go to III-d.

d. The modification/reconstruction created an emission increase in the aggregate facility that cannot be offset.

____ **Yes, the aggregate facility is subject to the standard.**
____ No, emissions can be offset, only the IDS is an affected facility.

continued

TABLE F-1. APPLICABILITY CHECKLIST (Concluded)

IV. OIL-WATER SEPARATORS

a. A new oil-water separator is constructed.

____ **Yes, the new separator is subject to the standard.**
____ No, the standard does not apply.

b. A new oil-water separator is added upstream of an existing separator resulting in a capital expenditure and an emission increase to the aggregate facility.

____ **Yes, the new separator and downstream components are subject to the standard.**[a]
____ No, the standard does not apply.

c. A physical or operational change to an existing oil-water separator results in an emission increase and capital expenditure.

____ **Yes, the separator is subject to the standard.**[b]
____ No, the standard does not apply.

d. Auxiliary equipment is added to the operation of the separator, and the equipment comes into contact with the oily wastewater.

____ **Yes, the equipment is subject to the standard.**
____ No, the standard does not apply.

V. AGGREGATE FACILITY

a. A physical or operational change is made in the aggregate facility that results in a capital expenditure and an emission increase.

____ **Yes, the aggregate facility is subject to the standard.**[a]
____ No.

[a]Slop oil facilities should not be considered in determining whether a capital expenditure is made on the aggregate facility.

[b]In determining whether an oil-water separator will be modified, the capital cost of the new components should be applied only to the actual oil-water separator treatment unit. Slop oil facilities should not be considered.

TABLE F-2. DETAILED REQUIREMENTS FOR INDIVIDUAL DRAIN SYSTEMS

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
a. PROCESS DRAINS			
Required Control: Water seals.			
Alternative Control: Completely closed drain system/caps or sealed drains when out of service.			
Water seals (unit in service)	Initially Monthly	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Water seals (unit out of service)	Initially Weekly	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Location of out of service drains Design specifications
Caps/Seals (unit out of service)	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Location of out of service drains Design specifications
Closed System[b]	None	Notification to use closed drain system	None
Other control	None	Notification to use alternative control	None
		Demonstration of compliance	None

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]See Table 5-5 for requirements of recovery/destruction devices.

Continued

TABLE F-2. DETAILED REQUIREMENTS FOR INDIVIDUAL DRAIN SYSTEMS (Concluded)

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
b. JUNCTION BOXES			
Required Control: Tightly sealed cover, vent at least 3 feet in length, diameter 4 inches or less - or length ≥3 feet, diameter ≤ 4 inches			
Alternative Control: Completely closed drain system			
Covers	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
c. SEWER LINES			
Required Control: Closed to the atmosphere, no open sewers.			
Alternative Control: Buried sewer.			
Covered sewer lines	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Buried sewer lines	None	None	Design specifications

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

TABLE F-3. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS

COMPONENT/CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
a. OIL-WATER SEPARATORS			
Required Control: New separators.			
<250 gpm (16 L/sec)	Fixed roof.		
≥250 gpm (16 L/sec)	Fixed roof, vapors vented to a control device.		
Modified/reconstructed separators.			
<600 gpm (38 L/sec)	Fixed roof.		
≥600 gpm (38 L/sec)	Fixed roof, vapors vented to a control device.		
Alternative Control: Floating roof.			
Fixed roof	Initially Semiannually	*Initial report/certification* Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Fixed roof vented to control[b]			

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]Same monitoring/inspection, reporting, and recordkeeping requirements for the fixed roof, plus additional requirements for the control device. See Table 5-5 for requirements of recovery/destruction devices.

TABLE F-3. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS (Continued)

CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
Floating roof	Gap measurements on seals within 60 days	Notification to use floating roof as control	Design specifications Location, date, corrective action Expected date of repair
	Gaps on primary seals every 5 years	None	None
	Gaps on secondary seals every year	None	None
Other control	None	Notification to use alternative control	None
	None	Demonstration of compliance	None

b. AUXILIARY EQUIPMENT, SLOP OIL TANKS

Required Control: New tanks and equipment.

<250 gpm (16 L/sec)	Fixed roof (pressure relief valve allowed).
≥250 gpm (16 L/sec)	Fixed roof, vapors vented to a control device.

Modified/reconstructed tanks and equipment.

<600 gpm (38 1/sec)	Fixed roof (pressure relief valve allowed).
≥600 gpm (38 1/sec)	Fixed roof, vapors vented to a control device.

Continued

aRecords must be maintained for two year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

TABLE F-3. DETAILED REQUIREMENTS FOR OIL-WATER SEPARATORS (Concluded)

CONTROL	MONITORING/INSPECTION	REPORTING	RECORDKEEPING[a]
Fixed roof	Initially Semiannually	Initial report/certification Semiannual inspection Delay of compliance	Location, date, corrective action Expected date of repair Design specifications
Fixed roof vented to control[b]			
Other control		Notification to use alternative control Demonstration of compliance	

[a]Records must be maintained for 2 year periods. Design specifications for equipment used to comply with the standard must be kept for the life of the emission source.

[b]Same monitoring/inspection, reporting, and recordkeeping requirements for the fixed roof, plus additional requirements for the control device. See Table 5-5 for requirements of recovery/destruction devices.

TABLE F-4. REQUIREMENTS FOR CLOSED VENT SYSTEMS

MONITORING/INSPECTION

1. Initial, semiannual inspections to ensure no detectable emissions as measured by Method 21.

2. Flow indicator to ensure flow to control device.

3. *Control Devices*

   a. Thermal and Catalytic incinerators
      - continuous temperature recording device.

   b. Carbon Adsorber
      continuous monitoring device for measuring outlet VOC concentration, or inlet and outlet VOC concentration.

   c. Recovery devices other than a carbon adsorber
      date and monitoring information necessary to ensure compliance.

   d. Flare
      monitoring requirement of 40 CFR 60.18.

REPORTING

1. Notification to use recovery device other than a carbon adsorber.

2. Initial certification of equipment needed to comply with standard.

3. Initial performance test for flares.

4. Initial and semiannual inspection reports, including reports on abnormal operation of control devices.

5. Date of next shutdown if delay of compliance provisions apply.

RECORDKEEPING

1. Date, location, and corrective action for all repairs.

2. Expected date of repair if corrective action is delayed, with reason for delay.

3. Design specifications for all equipment used to comply with the standard.

4. Documentation of control device performance.

5. Continuous records of control device performance.

TABLE F-5. MISCELLANEOUS REQUIREMENTS OF THE STANDARD

1. **Modifications**

Reporting

The EPA Administrator must be notified prior to any modification of the refinery wastewater system.

2. **Stormwater Sewers**

Recordkeeping

The facility must keep records showing the location of any stormwater sewer. These records will be used to document exemptions to the requirements of individual drain systems, and to insure that wastewater from new drain systems does not flow into a stormwater sewer.

3. **Ancillary Equipment**

Recordkeeping

Plans and specifications for any equipment exempt from the standards must be kept to demonstrate that this equipment does not come into contact with oily wastewater.

4. **Noncontact Cooling Water**

Recordkeeping

Plans and specifications for noncontract cooling water exempt from the standards must be kept to demonstrate that this water does not come into contact with oily wastewater or hydrocarbons.

TABLE F-6. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS

Complete this form for each individual drain system subject to the standard. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance, unless the response is related to repair provisions that allow for delays.

LOCATION OF INDIVIDUAL DRAIN SYSTEM_____
NUMBER OF DRAINS_____ NUMBER OF JUNCTION BOXES_____
SEWER LINES: BURIED _____ ABOVE GROUND _____ PARTIALLY BURIED/ABOVE GROUND _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the drain system is available, including all control equipment for drains, junction boxes, and sewer lines.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no

IF THE DRAIN SYSTEM IS ACTIVE

3.	Water sealed drains were inspected when the unit was placed in service. Date of initial inspection _____.	yes	no
4.	Water sealed drains are inspected monthly. Date of last monthly inspection _____.	yes	no
5.	All repairs on water sealed drains were made immediately, or no later than 24 hours after detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no
6.	All junction boxes are equipped with tight fitting covers.	yes	no
7.	The junction boxes were inspected when they were put in service. Date of initial inspection _____.	yes	no
8.	Junction boxes are inspected every 6 months. Date of last semiannual inspection _____.	yes	no
9.	Broken seals and gaps were repaired within 15 days of detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no

Continued

TABLE F-6. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS

10.	All sewer lines are tightly covered.	yes	no
11.	The sewer lines were inspected when they were put in service. Date of initial inspection _____.	yes	no
12.	Cracks, gaps, and other problems in the sewer line were repaired within 15 days of detection. (if "no" see GENERAL category below for delay of repair compliance)	yes	no
13.	Covered sewer lines are inspected every 6 months. Date of last semiannual inspection _____.	yes	no
IF ANY PART OF THE DRAIN SYSTEM IS INACTIVE			
14.	Water sealed drains were inspected when they were taken out of service. Date drains were taken out of service _____.	yes	no
15.	Water sealed drains are inspected weekly. Date of last weekly inspection _____	yes	no
16.	All drains that are capped or sealed were inspected following initial installation of the caps or seals. Date when installation was complete _____.	yes	no
17.	All drains that are capped or sealed are inspected every 6 months. Date of last semiannual inspection _____.	yes	no
GENERAL			
18.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
19.	When repairs were not made immediately, the expected date of repair was noted.	yes	no
20.	All reported deficiencies have been repaired or are scheduled for repair.	yes	no
B. VISUAL INSPECTION			
1.	Water seals present on all drains.	yes	no
2.	Caps/seals on inactive drains are in place and tightly fitting.	yes	no

Continued

TABLE F-6. COMPLIANCE CHECKLIST FOR INDIVIDUAL DRAIN SYSTEMS USING WATER SEALED CONTROLS (Concluded)

3.	Covers on junction boxes are tight and have no visible gaps or openings.	yes	no
4.	Vents on junction boxes are at least 3 feet in length with a diameter of 4 inches or less.	yes	no
5.	Joints and connections on sewer lines have no visible gaps, cracks, or openings.	yes	no
6.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

TABLE F-7. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS

Complete this form for each oil-water separator subject to the standard. This form is applicable only if fixed or floating roofs are the control technique used for compliance. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance, unless the response is related to repair provisions that allow for delays.

LOCATION OF OIL-WATER SEPARATOR _____
DESIGN CAPACITY _____ FIXED ROOF _____ FLOATING ROOF _____
AUXILIARY EQUIPMENT SUBJECT TO THE STANDARD _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the separator and control equipment is available.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no

IF THE CONTROL IS A FIXED ROOF OR A FLOATING ROOF

3.	The roof was inspected and certified when the separator was placed in service. Date of initial inspection _____.	yes	no
4.	The roof is inspected every 6 months. Date of last semiannual inspection _____.	yes	no
5.	All repairs were made within 15 days of detection. (if "no" see GENERAL category below for delay or repair compliance)	yes	no
6.	All auxiliary equipment subject to the standard is equipped with tight fitting covers.	yes	no
7.	The auxiliary equipment was inspected and control equipment certified when initially placed in service. Date of initial inspection _____.	yes	no
8.	Auxiliary equipment is inspected every 6 months. Date of last semiannual inspection _____.	yes	no
9.	Pressure relief valves (if present) on auxiliary equipment are set at maximum release pressure.	yes	no

Continued

TABLE F-7. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS

IF THE CONTROL IS A FLOATING ROOF

10.	The EPA was notified that a floating roof was being installed.	yes	no
11.	Measurement of primary gap seals was conducted within 60 days of installation. Date of measurement _____.	yes	no
12.	Measurement of primary gap seal is conducted every 5 years. Date of last inspection _____.	yes	no
13.	Measurement of secondary gap seals was conducted within 60 days of installation. Date of last measurement _____.	yes	no
14.	Measurement of secondary gap seal is conducted every year. Date of last measurement _____.	yes	no
15.	All doors and openings were inspected when the roof was installed. Date of initial inspection _____.	yes	no
16.	All doors and openings are inspected every 6 months. Date of last semiannual inspection _____.	yes	no

GENERAL

17.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
18.	When repairs were not made immediately, the expected date of repair was noted.	yes	no
19.	All reported deficiencies have been repaired or are scheduled for repair.	yes	no

B. VISUAL INSPECTION

FIXED ROOFS ON SEPARATORS AND AUXILIARY EQUIPMENT, FOR EACH SEPARATOR OR AUXILIARY EQUIPMENT

1.	The roof fit tightly with no visible gaps, cracks, or openings.	yes	no
2.	All access doors and openings were sealed properly.	yes	no

Continued

TABLE F-7. COMPLIANCE CHECKLIST FOR OIL-WATER SEPARATORS WITH FIXED AND FLOATING ROOFS (Concluded)

3.	Pressure relief valves are set at maximum pressures.	yes	no
4.	Visual inspection of facility is consistent with written records.	yes	no
FLOATING ROOFS			
5.	All access doors and openings were sealed properly.	yes	no
6.	The gap width between the primary seal and the separator wall was acceptable using gap measuring methods specified in the rule.	yes	no
7.	The total gap area between the primary seal and the separator wall was acceptable uisng gap measuring methods specified in the rule.	yes	no
8.	The gap width between the secondary seal and the separator wall was acceptable using gap measuring methods specified in the rule.	yes	no
9.	The total gap area between the secondary seal and the separator wall was acceptable using gap measuring methods specified in the rule.	yes	no
10.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

TABLE F-8. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

Complete this form when a closed vent system is used to comply with the standard for an individual drain system or oil-water separator. A "yes" response to all questions will indicate full compliance with the standard. A "no" response will indicate noncompliance.

CLOSED VENT SYSTEM FOR: _____ OIL-WATER SEPARATOR
_____ INDIVIDUAL DRAIN SYSTEM
DESTRUCTION OR RECOVERY DEVICE _____
DATE OF STARTUP _____

A. REVIEW OF RECORDS

1.	A record of the design specifications for the closed vent system is available.	yes	no
	a. Record includes detailed schematics, piping and instrumentation diagrams.	yes	no
	b. Record includes dates and descriptions of any design changes.	yes	no
2.	Certification of installation and inspection of equipment needed to comply with the standards was submitted to the regulatory agency within 60 days of initial startup.	yes	no
IF A CLOSED VENT SYSTEM IS USED FOR A DRAIN SYSTEM			
3.	The EPA was notified that a closed drain system was being installed.	yes	no
IF THE CONTROL DEVICE IS A FLARE			
4.	A report of the initial performance test was submitted within 60 days of the intial startup.	yes	no
5.	The presence of a flare pilot flame is monitored using a thermocouple or other device designed to detect the presence of a flare.	yes	no
6.	All periods when the flare pilot did not have a flame have been recorded, with records kept for 2 years.	yes	no
7.	The flare meets all other operational and monitoring requirements of 40 CFR 60.18.	yes	no
IF THE CONTROL DEVICE IS A THERMAL INCINERATOR			
8.	A temperature monitoring device equipped with a continuous monitor is used to measure the temperature of the gas stream in the combustion zone. (accuracy of 1% of the temperature measured in ^{o}C or $\pm$ 0.5°C [$\pm$ 1.0°F] whichever is greater).	yes	no

Continued

TABLE F-8. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

9.	Documentation exists demonstrating 95% control efficiency [or #10].	yes	no
10.	Documentation exists demonstrating minimum residence time of 0.75 seconds and minimum temperature of 816°C (1500°F).	yes	no
11.	A description of operating parameters used to determine compliance is available.	yes	no
12.	Continuous records of temperature of the gas stream in the combustion zone of the incinerator are kept for 2 year periods.	yes	no
13.	Records are kept for all 3-hour periods when the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature.	yes	no
14.	All other periods of operation not in conformation with design criteria are recorded.	yes	no
IF THE CONTROL DEVICE IS A CATALYTIC INCINERATOR			
15.	Temperature monitoring devices equipped with continuous recorders are used to measure the temperature in the gas stream immediately before and after the catalyst bed (accuracy of 1% of the temperature measured in °C or ± 0.5°C [± 1.0°F] whichever is greater).		
16.	Documentation exists demonstrating 95% control efficiency [or #17].	yes	no
17.	Documentation exists demonstrating minimum residence time of 0.75 seconds and minimum temperature of 816°C (1500°F).	yes	no
18.	A description of operating parameters used to determine compliance is available.	yes	no
19.	All periods of operation not in conformance with design criteria are recorded.	yes	no
20.	Continuous records are kept of the temperature of the gas stream upstream and downstream of the catalyst bed.	yes	no
21.	Records are kept for all 3-hour periods during which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the design gas stream temperature.	yes	no

Continued

TABLE F-8. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

22.	Records are kept for all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80% of the design temperature difference.	yes	no
23.	All periods of operation not in conformance with design criteria are recorded.	yes	no
IF THE VAPOR RECOVERY DEVICE IS A CARBON ADSORBER			
24.	A monitoring device is used that continually indicates and records the VOC concentration or reading of organics in the exhaust gas of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
25.	Documentation exists demonstrating 95% control efficiency.	yes	no
26.	A description of operating parameters used to determine compliance is available.	yes	no
27.	All periods of operation not in conformance with desing criteria are recorded.	yes	no
28.	Continuous records are kept of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
29.	Records are kept for all 3-hour periods during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream is more than 20% greater than the design exhaust gas concentration level.	yes	no
30.	All other periods of operation not in conformance with design criteria are recorded.	yes	no
IF THE VAPOR RECOVERY DEVICE IS NOT A CARBON ADSORBER			
31.	The EPA was notified that a recovery device other than a carbon was being used.	yes	no
32.	A monitoring device is used that continually indicates and records the VOC concentration or reading of organics in the exhaust gas of the control device outlet gas stream or inlet and outlet gas stream.	yes	no
33.	Documentation exists demonstrating 95% control efficiency.	yes	no
34.	A description of operating parameters used to determine compliance is available.	yes	no

Continued

TABLE F-8. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS

35.	Continuous records are kept of operating parameters needed to determine compliance.	yes	no
36.	All periods of operation not in conformance with design criteria are recorded.	yes	no
GENERAL			
37.	A flow indicator is present on the vent stream to the control device.	yes	no
38.	Documentation exists describing the gas stream entering the control device, including flow and VOC content under static and dynamic liquid level conditions.	yes	no
39.	Manufacturers design specifications for the control device are available.	yes	no
40.	The closed vent system was inspected initially and found to be operating with no detectable emissions (<500 ppm above background) Date of initial inspection _____	yes	no
41.	The closed vent system is inspected every 6 months to ensure operation with no detectable emissions. Date of last semiannual inspection _____.	yes	no
42.	All deficiencies have been recorded, including location, date, and corrective action to be taken.	yes	no
43.	The location, date, and corrective action was noted when detectable emissions were measured during any inspection.	yes	no
44.	When repairs were not made immediately, the expected date of repair was noted and was within 30 days of the reported deficiency.	yes	no
45.	All reported deficiencies were repaired within 30 days or are scheduled for repair within 30 days of the initial report.	yes	no
B. VISUAL INSPECTION			
1.	A flow indicator is present on the vent stream to the control device.	yes	no
2.	For flares, a device for detecting the flame is present.	yes	no
3.	For incinerators, a temperature monitoring device in present.	yes	no

Continued

TABLE F-8. COMPLIANCE CHECKLIST FOR CLOSED VENT SYSTEMS (Concluded)

4.	For carbon adsorbers, a device for measuring VOC content is present.	yes	no
5.	The closed vent system has no detectable emissions.	yes	no
6.	Visual inspection of facility is consistent with written records.	yes	no

NOTE ALL DEFICIENCIES

F-9. GAP MEASUREMENT WORKSHEET

When floating roofs are used as an alternative emission control for oil-water separators, gap measurements must be conducted periodically to insure maximum emission reduction. This worksheet provides guidelines for conducting gap measurements of the seals.

Primary Seals

Inspection Intervals:	within 60 days of installation and every 5 years.
Gap Width Criteria:	gaps not to exceed 3.8 cm (1.5 in.) at any point.
Gap Length Criteria:	area not to exceed 67 cm^2/m (0.32 in^2/ft) of separator wall perimeter.

Secondary Seals

Inspection Intervals:	within 60 days of installation and every year.
Gap Width Criteria:	gaps not to exceed 1.3 cm (0.5 in.) at any point.
Gap Length Criteria:	area not to exceed 6.7 cm^2/m (0.32 in^2/ft) of separator wall perimeter.

Procedure

For each primary and secondary seal, proceed as follows:

1. Measure the seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely between the seal and the wall, without forcing or binding against the seal.
2. Record the actual gap width and the perimetrical distance of the gap.
3. Add the gap surface area for each gap location.
4. Divide the sum of the gaps by the nominal perimeter of the separator basin.
5. Check all gap widths and total gap area for compliance with the standard.

Calculations (use centimeters or inches)

Gap width	x	Gap length	=	Gap Area
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____
_____		_____		_____

Sum of gap areas _____

Nominal perimeter of basin (use meters or feet) _____

Sum of Gap Area ÷ Perimeter = _____

F-10. DELAY OF REPAIR REPORTING FORM

If emission points cannot be repaired or corrected without a process unit shutdown or because of any other reason, the owner/operator shall record the following information.

Location of Emission Point

Corrective Action to Be Taken

Reason for Delay of Repair

Date of Next scheduled Process Unit Shutdown

Anticipated Date of Repair

Signature of Decision Maker

FOLLOWUP:

Actual Date Repair Completed

F-11. METHOD 21 CHECKLIST

1. Instrument Detector

   a. Instrument Type:

   b. Serial Number:

   c. Manufacturer and Model:

   d. Calibration Gas:

   e. Instrument Lower Limit of Detection (ppmv):

   f. Saturation Point of Instrument Without Dilution Probe:

   g. Did you use a dilution probe? yes no

   h. Can instrument scale read $\pm$5% of leak definitions? yes no

   i. Does instrument include a pump capable of 1/2 to 1/3 1/min flow rate? yes no

2. Instrument Performance

   a. Has a response factor for the detector been determined? yes no

   b. Is the response factor <10? yes no

   c. Report response factor:

   d. Has a response time test for the detectors been performed? yes no

   e. Is response time $\leq$30 seconds? yes no

   f. Report response time:

   g. Have there been any changes to the sample pumping system or flow configuration since the response time test? yes no

   h. Has a calibration precision test for the detector been completed? yes no

   i. Report date of last calibration precision test:

   j. Is calibration precision $\leq$10% of calibration gas value? yes no

F-12. CALIBRATION CHECKLIST (METHOD 21)

Completed

1. Calibration Gas

   a. Is a zero gas used as a first step in calibrating the detector? yes no ____

   b. For calibration gas:

      1. Cylinder standards
         a. has it been certified by the manufacturer to be ±2% accuracy? ____
         b. report shelf life: ____
         c. are the standards reanalyzed or replaced after shelf life? ____
         d. from whom do you purchase cylinder standards? ____

      2. Prepared standards
         a. is the mixture accurate to within ± 2 percent? ____
         b. are the standards replaced each day of use? ____

2. Calibration Procedure Checklist

   a. Assemble and start-up VOC analyzer. ____

   b. Allow for instrument warm-up. ____

   c. Zero internal calibration procedure. ____

   d. Introduce calibration gas into sample probe. ____

   e. Adjust meter readout to correspond to calibration gas value. ____

3. Instrument Evaluation Procedures

   a. Assemble and start-up instrument according to manufacturer's instructions. ____

   b. Response Factor

      1. Calibrate with reference compound. ____

      2. Obtain or prepare known standard of the organic species to be measured. ____

      3. Introduce standard to analyzer and record observed meter reading. ____

      4. Introduce zero air until a stable reading is obtained. ____

      5. Repeat 3 and 4 twice more to obtain three measurements. ____

      6. Calculated 3 individual and 1 average response factors. ____

      7. Was a published response factor used? yes no ____

F-12. CALIBRATION CHECKLIST (METHOD 21)(Concluded)

		Completed
C.	Calibration precision	
	1. Make three measurements by alternately using zero gas and specified calibration gas.	____
	2. Record meter readings.	____
	3. Calculate average algebraic difference between meter readings and known value.	____
	4. Calculate calibration precision (%) Average algebraic difference* 100. (Known calibration value).	____
D.	Response time	
	1. Introduce zero gas into sample probe.	____
	2. When meter has stabilized, switch quickly to specified calibration gas.	____
	3. Measure time form switching to 90 percent of final stable reading.	____
	4. Repeat twice more.	____
	5. Calculate average response time.	____

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA 340/1-91-013		

4. TITLE AND SUBTITLE	5. REPORT DATE
Inspection Manual - New Source Performance Standards for Emissions from Petroleum Refinery Wastewater Systems	September, 1991
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Alpha-Gamma Technologies, Inc. 900 Ridgefield Drive, Suite 350 Raleigh, NC 27609	10. PROGRAM ELEMENT NO.
	11. CONTRACT/GRANT NO. 68-02-4464
12. SPONSORING AGENCY NAME AND ADDRESS Stationary Source Compliance Division US Environmental Protection Agency 401 M Street, SW Washington, DC 20460	13. TYPE OF REPORT AND PERIOD COVERED Final
	14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

16. ABSTRACT

Information and guidance is provided to assist federal, state, and local regulatory personnel with the enforcement of the New Source Performance Standards for Petroleum Refinery Wastewater Systems, Subpart QQQ of the Code of Federal Regulations (40 CFR Part 60). The inspection manual includes descriptions of the emission sources to be regulated, emissions control techniques, detailed requirements of the standard, and a series of checklists and inspection forms. Appendices include the full text of the regulation, along with other supporting information to guide regulatory personnel.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air pollution Pollution control Standards of performance VOC emissions Petroleum refineries Wastewater treatment systems	Air pollution	

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS *(This Report)*	21. NO. OF PAGES
Unlimited	Unclassified	
	20. SECURITY CLASS *(This page)*	22. PRICE
	Unclassified	