

40 CFR Part 61

Thursday
January 7, 1993

Part II

**Environmental
Protection Agency**

40 CFR Part 61
**National Emission Standards for
Hazardous Air Pollutants; Benzene Waste
Operations; Final Rule**

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 61****[AD-FRL-4534-2]****National Emission Standards for Hazardous Air Pollutants; Benzene Waste Operations****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: EPA is clarifying widely misunderstood provisions to the national emission standards for hazardous air pollutants (NESHAP) for benzene emissions from benzene waste operations; subpart FF of 40 CFR part 61. Sources affected by subpart FF of this part include chemical manufacturing plants, coke by-product recovery plants, petroleum refineries, and facilities at which waste management units are used to treat, store, or dispose of waste generated by chemical manufacturing plants, coke by-product recovery plants, or petroleum refineries.

The final amendments clarify points on which there has been confusion and provide additional options for compliance that give owners and operators increased flexibility in meeting the requirements of the rule while still meeting the NESHAP goals for health risk protection.

DATES: *Effective Date:* January 7, 1993.

Judicial Review. Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of the clarifying amendments to the NESHAP is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit on or before March 8, 1993. Under section 307(b)(2) of the CAA, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements. Judicial review is not available for aspects of subpart FF that are not addressed by today's amendments.

ADDRESSES: *Docket.* Information related to the development of the amendments to subpart FF promulgated today is contained in categories XI through XIV of Docket No. A-89-06. The docket is available for public inspection and copying between 8:30 a.m. and 3:30 p.m., Monday through Friday, at the EPA's Air Docket Section, Waterside Mall, room 1509, 1st Floor, 401 M Street, SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For information on the rule amendments, contact Robert B. Lucas, Chemicals and Petroleum Branch (MD-13), telephone (919) 541-0884 or Gail Lacy, Standards Development Branch (MD-13), telephone (919) 541-5261, Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711. For information on the waiver policy for Subpart FF, contact Eric Crump, Chemicals and Petroleum Branch (MD-13), telephone (919) 541-5032, Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION: The information presented in this preamble is organized as follows:

- I. Background.
- II. Overview of Final Rule Clarifications and Implementation.
- III. Facility Applicability.
- IV. Control Requirements.
- V. Additional Exemption for Small Benzene Quantity Wastes.
- VI. Alternative Compliance Options.
- VII. Monitoring, Recordkeeping, and Reporting.
- VIII. Policy for Granting Waivers of Compliance.
- IX. General.
- X. Administrative Requirements.

I. Background

On March 7, 1990 (55 FR 8292), the EPA promulgated under section 112 of the Clean Air Act (as it was written prior to the Clean Air Act Amendments of 1990), 42 U.S.C. 7412, NESHAP controlling emissions of benzene to the ambient air from waste operations (subpart FF of 40 CFR part 61). The NESHAP for benzene waste operations is applicable to owners or operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries. In addition, this subpart applies to owners and operators of facilities at which waste management units are used to treat, store, or dispose of waste generated by chemical plants, coke by-product recovery plants, or petroleum refineries.

Due to widespread confusion among affected industries concerning key provisions of the rule, the EPA issued a stay of effectiveness of subpart FF on March 5, 1992 (57 FR 8012). The stay was to remain in effect until the EPA took final action on clarifying amendments to subpart FF. Clarifying amendments to the rule were also proposed on March 5, 1992. The EPA agreed to take final action on these amendments or before December 1, 1992

in a settlement agreement filed in connection with litigation on subpart FF. See *API v. EPA*, No. 90-1238 (D.C. Circuit) (Settlement Agreement).

With today's notice, the EPA is promulgating clarifying amendments to subpart FF and removing the stay. In accordance with section 112(q) of the Clean Air Act, as amended in 1990, these amendments are being promulgated under the authority of the Clean Air Act prior to enactment of the Clean Air Act Amendments of 1990. They are intended to clarify existing provisions of subpart FF and to provide additional flexibility to owners and operators who must comply with the rule while still meeting the NESHAP goals for health risk protection.

The comment period on the proposed clarifying amendments was from March 5, 1992 to May 4, 1992. Thirty-three comment letters were received. The commenters included companies affected by the rule, trade associations, and an environmental group. Most comment letters contained multiple comments. Commenters generally supported the proposed amendments, although many offered specific criticisms and suggested changes. The EPA considered all comments on the proposed rule amendments in developing the final amendments promulgated today.

In the March 5, 1992 notice of proposed rulemaking, the EPA requested specific comments on potential alternative structures for the rule that would encourage reclamation and recycling without compromising the NESHAP risk protection goals. To inform the affected public of the suggested alternative rule structures and major rule clarifications being considered, the EPA held a series of meetings, between proposal and promulgation of the rule amendments, with industry and an environmental group. A written record of each meeting was placed in the rulemaking docket for subpart FF. During and following these meetings, additional comments were submitted on the major rule clarifications and alternative rule structures. These comments were also considered by the EPA in developing the final rule amendments.

The clarifying amendments to subpart FF that are being promulgated today are discussed below. Comments received on the proposed amendments and the EPA's responses to those comments are also discussed.

Some commenters submitted comments on aspects of the original rule that were unaffected by the proposed amendments. These comments are outside the scope of the rulemaking for

the proposed amendments. Therefore, these comments, although mentioned, are not addressed in this rulemaking.

Overview of Final Rule Clarifications and Implementation

The EPA proposed clarifying amendments to several provisions of subpart FF to resolve confusion. Several clarifications related to facility applicability including: (1) Clarifying which wastes are included in the calculation of total annual benzene quantity in all aqueous waste streams (TAB); (2) elaboration on the definition of point of waste generation; and (3) making clear that waste treatment cannot be used to lower facility TAB. Other proposed amendments included a 1.0 megagram per year (Mg/yr) of benzene exemption from controls for small quantity benzene wastes, a requirement that facilities prepare and implement a maintenance turnaround plan, and other miscellaneous clarifications. Comments were specifically requested on the need for a maintenance turnaround plan, the risks associated with organic wastes, and on possible alternative structures for the rule that would encourage recycling and reclamation while still meeting the NESHAP risk protection goals.

The EPA carefully considered comments received on the proposed clarifying amendments, and has made several changes in the final rule. These changes include the following:

- (1) Raising the proposed 1.0 Mg/yr of benzene exemption to 2.0 Mg/yr of benzene, and removing the proposed restrictions on which wastes are eligible for this exemption;
- (2) Deleting the requirement for a maintenance turnaround plan;
- (3) Adding an elective option for averaging the benzene in process unit turnaround wastes in the calculation of facility TAB;
- (4) Establishing separate control requirements based on containment controls for certain organic wastes that are managed in tanks; and
- (5) Including an additional compliance option for facilities that are above the 10 Mg/yr applicability threshold.

Other more minor changes were also made based on comments received. All changes made to the clarifying amendments between proposal and promulgation are discussed in detail beginning in section III of this preamble.

Facilities subject to the rule are required to be in compliance with all provisions of the amended rule within 90 days from today, unless a waiver of compliance is obtained under §§ 61.10 and 61.11 of the General Provisions to

40 CFR part 61. Additional information on the policy for granting waivers of compliance for subpart FF, as amended, is discussed in section VIII of this preamble. Detailed guidance on the waiver policy is provided in a separate document, "Benzene Waste Operations—NESHAP Waiver Guidance." No waiver of compliance issued will extend beyond 2 years from today's date.

All facilities subject to Subpart FF are required to submit a report that summarizes the regulatory status of each waste stream covered by the rule to the appropriate EPA regional office or delegated State or local agency. A facility that has previously submitted this report to the EPA or to the delegated State or local agency and, after reviewing the clarifying amendments promulgated today, believes that the previous report is accurate, may submit a statement to this effect rather than resubmitting the entire previous report.

In an advance notice of proposed rulemaking (ANPR), the EPA is announcing the intent to propose an additional compliance option, based on site-specific risk assessment, for public comment. Facilities that may want to utilize this alternative compliance option if it is added to the rule are eligible to apply for a waiver of compliance. Additional information on waivers of compliance for facilities that may want to utilize site-specific risk assessment as a compliance option is presented in section VIII of this preamble.

III. Facility Applicability

Subpart FF is applicable to petroleum refineries, chemical plants, and coke by-product recovery facilities. It also is applicable to treatment, storage, and disposal facilities (TSDF) that receive wastes from petroleum refineries, chemical plants, and coke by-product recovery facilities.

The calculation of TAB determines whether a facility is subject to the control requirements of the rule. A facility at or above the TAB threshold in the rule of 10 Mg/yr is required to control each benzene waste stream at the facility or demonstrate that the waste stream meets a criterion in the rule for exemption from control. A facility with a TAB below 10 Mg/yr is only subject to the rule's reporting and recordkeeping provisions, unless the facility receives a waste from offsite that must be controlled to meet subpart FF, in which case that waste must be controlled.

Following promulgation of subpart FF on March 7, 1990, it was evident that

many members of the regulated community were either confused about or had misunderstood the EPA's intent on how the applicability of control requirements in the rule to facilities should be determined. Given the critical importance of this determination of facility applicability, the EPA proposed amendments in the March 5, 1992 notice to clarify how facility applicability is determined. Comments received on the proposed clarifications related to facility applicability, and the EPA's responses to them, are discussed in the following sections.

A. Wastes Included in the TAB Calculation to Determine Applicability of Control Requirements

The proposed amendments sought to clarify the EPA's general intent that the benzene in all aqueous wastes and wastes that become aqueous be included in the TAB calculation. To resolve prior confusion, discussion in the preamble and proposed clarifying language in the regulation specifically stated that the following wastes are among those whose benzene should be included in the calculation of facility TAB: Organic wastes that become aqueous (i.e., are mixed with water or other aqueous wastes such that the water content of the waste exceeds 10 percent); materials subject to subpart FF that are sold; and wastes that may be exempted from control under the rule based on low benzene concentration, low benzene quantity, or low total waste quantity.

The proposed amendments also included a clarification to address how wastes generated on an infrequent basis, such as wastes from process unit turnarounds, are counted in the TAB calculation. Under the proposed clarifications, these wastes would have been counted in a facility's TAB for the year in which they are generated.

To avoid creating a disincentive for facilities to undertake voluntary remediation activities, the proposal included an exception for remediation wastes. The proposed clarification would exclude these wastes from the facility TAB calculation but require that they are subject to control if the facility TAB is 10 Mg/yr or greater. Thus, the benzene content of remediation wastes would not affect whether a facility is subject to the control requirements of the rule.

Industry representatives commented on several aspects of the proposed clarifications related to facility applicability. After consideration of these comments, the EPA is proceeding with all of the clarifications as proposed with the exception of the proposed language for process unit turnarounds.

The final amendments allow facilities to average the benzene in wastes generated by process unit turnarounds in the calculation of TAB. Further discussion of the comments received and the EPA's responses is presented below.

Materials Subject to Subpart FF That Are Sold

One commenter claimed that the EPA had created additional confusion with the proposed clarification in § 61.342(a)(2) that the benzene in a material subject to subpart FF that is sold is included in the calculation of TAB if the material meets the definition of a waste and has an annual average water content greater than 10 percent. The commenter further states that with this proposed change, the EPA has raised questions concerning the status of materials that have never been regarded as wastes.

It has always been the EPA's intent that if a material meets the definition of a waste in the rule, then the benzene in that material should be included in the calculation of TAB based on its benzene content at the point of generation. The purpose of the proposed amendment was to clarify more specifically that the act of selling a material does not, by itself, mean that the material is not subject to subpart FF. The definition of waste in the rule is intentionally broad and does not differentiate between materials based on their ultimate end use. This is because any material containing benzene that meets the rule's definition of waste has the potential to be a source of benzene emissions. Further, materials that meet the definition of waste are generally not subject to other rules that limit benzene air emissions.

Although not explicitly stated by the commenter, the EPA sees two potential concerns by industry associated with materials subject to Subpart FF that are sold. One concern might be that including the benzene in these materials in facility TAB causes facilities otherwise below 10 Mg/yr to exceed this TAB threshold for the applicability of subpart FF control requirements. However, the commenter gave no indication to what extent this may be a problem.

A second potential concern might be from the perspective of facilities with TAB's above 10 Mg/yr. The owners or operators of these facilities may not understand the control requirements at the generator site and at the site receiving them for materials that are sold. Since these materials are potential sources of benzene emissions, the EPA has always intended that they be controlled as are other materials that

meet the definition of waste in subpart FF. At the generator site, these materials must be managed in units equipped with emission controls prior to shipment offsite as specified in the rule. As required under § 61.342(f), the generator is required to include with each shipment offsite of waste, a notice stating that the waste must be managed and treated in accordance with the requirements of subpart FF. In the case of materials that are sold, the receiving site may be purchasing them for input to another process as a raw material. In that case, at the receiving site, materials subject to subpart FF would have to be managed in units meeting the subpart FF requirements for benzene air emission control up to the point the materials reenter a process; at the process reentry point the sold materials would no longer be subject to subpart FF. In meetings following the proposal of the clarifying amendments, the EPA asked for additional supporting information from industry to indicate the extent of concern regarding materials subject to subpart FF that are sold and to aid in evaluating the impact of the proposed clarification. No additional information has been received by the EPA.

Without additional information submitted to support the comment on materials subject to subpart FF that are sold, the EPA is not persuaded that these wastes should be excluded from the rule or the TAB calculation. Therefore, the promulgated clarification is unchanged from proposal.

Remediation Activities

The EPA received comments from industry in support of and in opposition to the proposed clarification on remediation wastes. Those supporting the proposed amendments believed that the EPA had correctly recognized that without this clarification, there would be a disincentive for facilities to undertake voluntary remediation activities. Those opposing the proposed clarification objected to inclusion of these wastes in the rule at all. One commenter argued that remediation wastes are already controlled under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and thus should not be controlled by subpart FF. Another commenter claimed that the control requirement for remediation wastes would create a disincentive to conduct remediation activities and that solid waste remediation (e.g., contaminated soils) should be removed from the scope of the rule because control of these

wastes is best left to the regulatory agency directing the cleanup, and because these wastes may require controls and equipment dissimilar to the controls discussed in the rule. The commenter noted that few solid waste remediation activities are voluntary, citing RCRA and CERCLA as statutes driving many such remediation activities.

The EPA disagrees with the commenters opposed to the proposed clarification. While the EPA believes it is reasonable to exclude the benzene in remediation wastes from facility applicability determination (in order not to create a disincentive for voluntary remediation actions), there is a strong rationale to control these wastes at a facility to which the control requirements apply. Materials generated by remediation actions fall within the definition of waste in the rule and can contain significant amounts of benzene. In general, these materials would be expected to be managed with other wastes at a facility. If these materials were excluded from the control requirements of the rule, benzene air emissions from remediation actions could be left uncontrolled, resulting in the remediation activity transferring benzene contamination from another media into the air. Consequently, the EPA believes that at facilities with a TAB above the control threshold in the rule of 10 Mg/yr, wastes from remediation activities should be subject to the control requirements of the rule as are other wastes containing benzene.

The EPA also disagrees that the proposed change would create a disincentive for facilities to undertake remediation activities. To the contrary, by proposing that the benzene in remediation wastes not be included in the TAB calculation, the proposed change would remove the potential disincentive in the original rule for a facility with a TAB below 10 Mg/yr to undertake voluntary remediation actions. That the proposed change would accomplish this is supported by some commenters. Further, to the extent that benzene emissions from these wastes are controlled by CERCLA or RCRA, no additional effort would be required under subpart FF. For these reasons, remediation wastes are excluded from TAB, but are subject to the control requirements of the rule. At facilities whose TAB's are at or above 10 Mg/yr, remediation wastes are subject to the rule's control requirements in the same manner as any other wastes.

Regarding the types of controls needed for soil remediation wastes, the EPA believes that these wastes can be managed and treated in units that meet

the control requirements of subpart FF. The rule does not apply to the act of excavating benzene-contaminated soil, a point perhaps misunderstood by the commenter. However, after the contaminated soil is excavated, it then meets the definition of a waste, and is subject to the rule. Once excavated, waste containing 10 ppmw or greater benzene is required to be handled in waste management units (e.g., containers) for which the controls specified in the rule are applicable and appropriate. The treatment requirement in the rule is a performance standard (i.e., reduce concentration of benzene in the waste to below 10 ppmw; or by 99 percent) and does not specify the method of treatment. Methods such as solvent extraction and thermal treatment are demonstrated technologies that are available to meet this performance standard for soil remediation wastes. The requirement in subpart FF for the control of air emissions from a treatment technology that is used is also a performance standard (reduce organic emissions by 95 percent or benzene by 98 percent). This level of control has been demonstrated to be achievable and is comparable to what is required for the control of air emissions from treatment units permitted under the RCRA.

One company asked whether the benzene in a remediation waste that is sent offsite to a TSDF is counted towards the TAB of the TSDF. The benzene in all wastes (including remediation wastes) received by a TSDF from chemical plants, petroleum refineries, and coke by-product recovery plants and that contain 10 percent or greater of water count towards the TAB of the TSDF. This is discussed further in section III.C of this preamble.

Infrequently Generated Wastes

The proposed rule amendments included a clarification that the benzene in waste streams generated on an infrequent basis, such as wastes from process unit turnarounds (also referred to as maintenance turnarounds) that occur only once every 2 to 5 years or less frequently, is counted in the TAB calculation for the year in which the wastes are generated. The proposed clarification specifically stated that the benzene in these wastes is not averaged over the time period between occurrences of the activities that generate the wastes. The EPA received a number of comments on this proposed clarification.

Most of the comments received on this proposed clarification addressed process unit turnaround wastes. Commenters specifically opposed the

proposed inclusion of the benzene in process unit turnaround wastes in the TAB calculation for the year in which the waste is generated. The concern expressed by commenters was that, because of the potentially significant amount of benzene in process unit turnaround wastes, the proposed clarification could cause facilities with a TAB otherwise below 10 Mg/yr to go above this level in the year that process unit turnaround occurs.

One commenter cited an example where wastes containing 2.5 tons of benzene were generated during process unit turnaround at a facility with a TAB that in other years is just below 10 Mg/yr. In this situation, process unit turnaround wastes would trigger applicability of the control requirements of the rule to all wastes at the facility, but only in the years that process unit turnaround occurs. As a remedy for this, commenters suggested that the EPA allow the averaging of infrequently generated wastes in the TAB calculation over the period between occurrences.

The EPA agrees with commenters that the clarification as proposed would create the potential for a facility to exceed the 10 Mg/yr TAB threshold only in those years when a process unit turnaround occurs. Previously, the EPA was not aware of the extent to which the benzene in process unit turnaround wastes could influence the applicability of control requirements at facilities subject to the rule. Based on the comments received, it is clear that the proposed clarification would substantially impact some smaller facilities, requiring them to purchase and install controls for use only in years in which process unit turnaround occurs or face penalties for noncompliance in those years. This is not the EPA's intent.

The EPA considers the suggestion made by commenters that, for the purpose of the TAB calculation, the benzene in intermittently generated wastes be averaged over the period between occurrences to be a reasonable one for process unit turnaround wastes generated as infrequently as once every 2 years or longer. Consequently, the final rule clarifications include an elective option in § 61.355(b)(4) for averaging the benzene in process unit turnaround wastes in the calculation of facility TAB. To compute a yearly contribution to facility TAB under this option, the benzene in process unit turnaround wastes generated during the most recent turnaround is divided by the period of time between the two most recent turnarounds. A facility selecting this approach will report an annual contribution to facility TAB for the

process unit regardless of whether the unit had a turnaround in the reporting year. If turnaround occurs separately for individual process units within a facility, the annual contribution to facility TAB shall be computed separately for each process unit.

For example, assume there is a process unit for which turnaround occurred in 1988 and in 1991, and the facility does not anticipate turnaround again until 1995. In 1993, the first year of compliance with the amended rule, the annual contribution to TAB from turnaround of the process unit would be the benzene quantity from the 1991 turnaround divided by three (because the period from 1988 to 1991 covers three years). This same value would be used in the calculation of TAB for 1994 and 1995. If the process unit turns around again in 1995, as anticipated, the value would change in 1996 to be the quantity generated from the 1995 turnaround divided by four (4-years between 1991 and 1995). Subsequent TAB calculations would use this value until the next turnaround of the process unit.

Owners and operators are not required to average process unit turnaround wastes. For most facilities, it will simplify the TAB calculation to record the benzene in process unit turnaround wastes only in the year that a turnaround occurs. The option of averaging the benzene in process unit turnaround waste is expected to be elected by a facility whose TAB is just below 10 Mg/yr and where the benzene in process turnaround waste could cause the facility to exceed 10 Mg/yr in the year that turnaround occurs if averaging were not allowed. A facility with a TAB significantly below 10 Mg/yr is not likely to average the benzene in process unit turnaround waste unless averaging is necessary to maintain the facility TAB below 10 Mg/yr. Facilities whose TAB is above 10 Mg/yr based on the benzene in wastes other than process unit turnaround wastes, are not likely to elect this option.

Commenters also requested that wastes associated with process upsets should be excluded from the TAB calculation. No information was supplied by the commenters on the possible magnitude of the benzene in these wastes or the potential impact of these wastes on facility applicability determinations. Without such information, the EPA has no basis for assessing the impact on benzene emissions and risk basis for assessing the impact on benzene emissions and risk if these wastes were excluded. Consequently, these wastes are covered by the rule and must be included in a

facility's TAB calculation if the waste contains greater than 10 percent water, or is mixed with water or other wastes at any time and has an annual average water content over 10 percent. Further, since process upsets are random events that do not occur at predictable intervals (as do process unit turnarounds), the development of a methodology whereby the benzene in these wastes could be averaged in the calculation of TAB is not appropriate. Therefore, the benzene in a waste generated by a process upset must be included in the facility's TAB calculation in the year the waste is generated.

B. Clarifications on Point of Waste Generation

Subpart FF requires that the characteristics of waste streams at their "point of generation" be used for the purposes of calculating a facility's TAB, which in turn determines applicability of Subpart FF control requirements to a facility. For a limited number of facilities that are subject to the rule, in particular for those whose TAB is just below or above 10 Mg/yr, the definition of the point of generation of waste streams can affect facility applicability.

Due to confusion over the rule's original language related to point of generation, the EPA proposed to simplify the definition of point of generation in § 61.341 and also clarify in §§ 61.355 (b) and (c) where waste quantity and flow-weighted annual benzene concentration are determined for the purpose of calculating TAB. Comments received on these proposed changes are discussed below.

Definition of Point of Generation

The proposed definition of point of generation in § 61.341 focused on the difference between process and waste management units and emphasized that the point of waste generation is before any waste treatment. Numerous comments were received on the proposed definition.

Several commenters argued that the point of generation should be where a waste is first exposed to the atmosphere. These commenters claimed that relating the point of generation to the point of exposure to the atmosphere was essential to simplifying applicability of the rule and promoting recycling and source reduction of wastes.

The EPA explained in the preamble to the proposed rule amendments that its intent in specifying the point of generation was (1) to establish the true emission potential of a stream, prior to any losses that occur through volatilization to the atmosphere and prior to any waste treatment, and (2) to

have affected facilities calculate their TAB in a manner consistent with the EPA's intended structure for the rule; that is, consistent with how the EPA determined which facilities should be controlled to meet the NESHAP risk goals. To adopt the commenters' suggestion would be contrary to these stated intentions for the rule as originally structured. A definition entirely based on where waste is exposed to the atmosphere would allow waste treatment as a means of reducing facility TAB. If this were allowed, facilities could simply treat wastes such that facility TAB was lowered to just below 10 Mg/yr, thereby avoiding the control requirements of the rule. Further, there would be no assurance that treatment processes would be controlled for benzene air emissions. As discussed in the proposal preamble, this was not the EPA's intent in the original rule structure and may not achieve the NESHAP risk goals (see 57 FR 8021 and 8022). Therefore, the EPA has not adopted the commenters suggested definition of point of generation for the original rule structure.

Moreover, the purpose for these amendments is to clarify the original intent of the rules with respect to the point of waste generation. If this rulemaking was just being initiated, the EPA may have considered a different regulatory approach to meet the NESHAP risk policy goals.

However, as discussed in section VI of this preamble, the EPA has included in the final rule amendments an additional compliance option for facilities subject to the control requirements of subpart FF (i.e., those facilities with TAB's above 10 Mg/yr). This option is being promulgated specifically in response to commenters who requested an additional compliance option that would further promote reclamation and recycling of wastes at facilities affected by the rule and that must install controls. Under this option, a facility owner or operator may selectively manage wastes such that the mass of benzene in wastes after management in units equipped with air emission controls (or after treatment in devices equipped with air emission controls), plus the mass of benzene in wastes not managed in controlled units (at their point of generation) is less than 6 Mg/yr (see section VI of this preamble). For waste streams that are managed from their point of generation in units controlled at least to the level required by the rule or that are treated to reduce benzene, the benzene quantity is determined before the waste enters the first unit uncontrolled for air emissions. Thus, this option does, in effect, allow

compliance with the rule for controlled waste streams to be determined based on the characteristics of the waste at the point where it is first exposed to the atmosphere.

One commenter stated that rarely is there a "bright line" between equipment that is integral to a process and equipment that is nonintegral in refinery processes. The commenter expressed concern about how the EPA would make case-by-case decisions on integral versus nonintegral equipment and whether these decisions would be published. Other commenters described site-specific equipment configurations claimed to be processes that promote resource recovery and requested that the EPA clarify the location of the point of generation for these configurations.

The EPA believes that through the definitions of waste, waste management unit, and point of generation, the rule provides adequate direction to determine the distinction between a waste management unit and a process unit. The definition of waste determines which materials at a facility comes under potential coverage by subpart FF. Which facilities are subject to the control requirements of subpart FF, and which waste streams must be controlled at those facilities is determined based on the characteristics of waste streams at their point of generation. The point of generation of a stream is after it has left a process and prior to handling or management in a unit that is not integral to the process, including prior to processes that promote resource recovery.

In general, and as discussed in the proposal preamble, the distinction between what is a waste management unit and what is a process unit is based on the material managed in the unit (see 57 FR 8020). If the material meets the definition of waste in the rule, then the unit is a waste management unit and the point of generation would be at a location prior to where the waste enters this unit. This is a primary criterion for distinguishing waste management units from process units for the purposes of subpart FF.

In limited situations, a material may meet the definition of a waste, but because it never leaves a process unit component, there may not be a point for that material that technically meets the definition of point of generation in the rule. This may be the case where materials are recycled within a process (e.g., product distillation reflux streams) or where materials are directly hardpiped from one process to another without accumulation, storage, or treatment. If a material never leaves a process, it is not covered by the rule,

even though it may meet the definition of waste. The burden, however, will be on owners and operators to demonstrate that the material does not leave the process, and that units claimed to be process units are, in fact, integral to the process. Additional discussion on materials recycled to a process or within a process is presented in section III.E of this preamble.

Where site-specific determinations on the point of generation are requested, they will be made by the EPA regional offices and delegated State and local agencies consistent with the final rule amendments. Regions, States, or local agencies that get applicability determinations that may be precedent setting or have nationwide importance will work with the EPA Headquarters in making the determinations. The EPA Headquarters will then distribute these determinations to other EPA regional offices, and State and local agencies as appropriate.

Listed Exceptions in § 61.355 for Sour Water Streams and Wastes at Coke By-Product Plants

The proposed rule amendments, clarify that for the purpose of a facility's TAB calculation, all determinations of waste stream annual quantity and benzene concentration are made at the point of generation with three exceptions. The listed exceptions are for wastes at coke by-product recovery plants handled in units subject to subpart L of 40 CFR part 61, sour water streams treated in sour water strippers, and wastes received by a TSDf from offsite. Due to the special circumstances explained in the proposal preamble, the quantity and benzene concentration of these wastes are determined at a location different from the point of generation (and described in §§ 61.355 (b) and (c) of the proposed rule amendments).

Several commenters supported this proposed clarification. One commenter asked the EPA to accord natural gas strippers and other strippers inherently controlled for air emissions the same status in the rule as sour water strippers. The EPA does not believe that the exception should apply to natural gas and other strippers.

In general, in the analysis performed to support subpart FF, the EPA evaluated waste streams based on their benzene content at the point of generation, and prior to any waste treatment. Certain exceptions were made, however, based on unique circumstances.

Although sour water strippers are considered by the EPA to be waste treatment devices, the benzene content

of each sour water stream treated in a sour water stripper was assumed in the analysis based on its benzene concentration at the exit of the stripper. This is because information supplied to the EPA by industry at the time the analysis was performed was for the characteristics of waste streams at the exit of sour water strippers. The analysis showed that for these streams, assuming benzene content at the exit of the stripper, and assuming inherent control for air emissions of the treatment device, the NESHAP risk protection goals would be met. This was explained in the preamble to the proposed amendments (see 57 FR 8021). Similar assumptions could not be made for other strippers based on the limited information available at the time of the analysis. Further, the application of sour water strippers is limited to the treatment of sour water streams, not any waste containing benzene.

For these reasons, the EPA considers sour water strippers to be unique relative to other treatment devices, not comparable to natural gas strippers and other strippers inherently controlled for air emissions. To accord natural gas strippers and other strippers the same status in the rule as sour water strippers would imply a general allowance of waste treatment as a means of lowering facility TAB. As discussed in the notice of proposed rulemaking for the clarifying amendments, this is clearly not the EPA's intention. Generically allowing waste treatment to lower facility TAB would be inconsistent with the EPA's intended rule structure in a way that could jeopardize attainment of the NESHAP risk protection goals for several reasons. For example, if waste treatment were generically allowed to lower TAB such that a facility is no longer subject to the control requirements of the rule, there would be no assurance that the treatment process was controlled for air emissions, there would be no control of benzene emissions from organic wastes, and facilities could treat wastes such that facility TAB was lowered only to 10 Mg/yr. All of these results would be inconsistent with the EPA's intended structure for the rule. Based on this, the commenter's suggestion was not adopted in the final rule amendments. It should be pointed out, however, that natural gas strippers and other strippers inherently controlled for air emissions are likely in compliance with the control requirements of the rule for those sources, although other waste management sources at the same facility may require additional control.

C. Applicability of the Rule to TSDf

The preamble to the proposed amendments described how control of wastes received by TSDf from chemical plants, petroleum refineries, and coke by-product recovery plants can be required under the rule in two ways (see 57 FR 8021). Control of these wastes is required at the TSDf if either (1) the TAB calculated for the TSDf is 10 Mg/yr or greater (based on the characteristics of the wastes at the point they enter the TSDf), or (2) if the waste would have been required to be controlled to meet the rule by the generator if it had not been shipped offsite (i.e., the generator's TAB is 10 Mg/yr or greater and the waste contains 10 ppmw or more of benzene).

Although no changes were proposed to the specific rule requirements that address the shipment of wastes offsite in the second case, comments were received that the "need to control" a waste should not accompany the waste when it is shipped from a generator with a TAB of 10 Mg/yr to a TSDf with a TAB below 10 Mg/yr. Two commenters specifically stated that this could restrict the number of TSDf willing to accept refinery wastes.

It is the EPA's intent that wastes generated by any facility subject to the rule with a TAB of 10 Mg/yr or greater be controlled, regardless of whether the waste is sent offsite or not. Consistent with this intent, the rule requires that wastes sent to any offsite facility (including TSDf) by a generator with a TAB of 10 Mg/yr continue to be subject to the control requirements of subpart FF until they are treated to the level required by the rule or they reenter a process at the offsite facility.

Dispersal of wastes to offsite facilities where controls may not be required is not an acceptable means of reducing the potential health risks associated with these wastes for two reasons. First, if the "need to control" a waste did not go with it when it is shipped offsite as suggested by the commenters, this could lead to the distribution of significant quantities of benzene wastes to uncontrolled facilities (e.g., to TSDf's with TAB's significantly below 10 Mg/yr currently). This would result in an increase in benzene emissions and risk and conflict with the NESHAP risk protection goal of minimizing the population at a risk of greater than one in one million.

Secondly, there would be no guarantee that potential benzene emissions and risk would actually be dispersed. For example, even if a TSDf were under separate ownership, it could be located contiguous to a facility

generating the waste. In this case, "offsite" may simply be across the street. For these reasons, the final rule as amended still requires wastes shipped to a TSDF from a generator with a TAB of 10 Mg/yr to be controlled at the TSDF, even when the TSDF's TAB is below 10 Mg/yr.

As mentioned earlier, a question was raised after proposal of the rule amendments as to whether the benzene in a remediation waste that is sent offsite to a TSDF is counted towards the TAB of the TSDF. The benzene in all wastes (including remediation wastes) that are received by a TSDF from chemical plants, petroleum refineries, and coke by-product recovery plants and that contain greater than 10 percent water or that are mixed with water or other wastes and have over 10 percent water content count towards the TAB of the TSDF. The benzene in remediation wastes generated offsite are not excluded from the calculation of TAB (see § 61.342 (a) (3)) for a TSDF or any other facility subject to the rule (although it is still not included in the TAB for the generator site) for two reasons.

First, the objective in excluding remediation wastes from facility TAB is to remove the potential influence that concern over facility applicability might have on a facility owner or operator's decision whether or not to undertake a voluntary remediation action. That is, would the benzene in remediation wastes, if generated, cause facility TAB to go from below 10 Mg/yr to above 10 Mg/yr, triggering the possible need for controls? This consideration does not apply to facilities receiving wastes from offsite where the owners are not making decisions on whether to generate wastes.

Second, if the benzene in remediation wastes were excluded from the TAB calculation at a TSDF, there would be no limit on the amount of remediation wastes that could be received before facility controls would be required. This could potentially result in an unacceptable increase in the maximum individual risk or the population exposure. (As explained in section III.C of this preamble, however, any waste that is subject to the control requirements of the Subpart at a generator site must also be controlled if sent to a TSDF, regardless of the TAB of the TSDF.) Thus, under the final rule amendments, if remediation wastes are sent offsite to a TSDF or other facility, the benzene in these wastes does count towards the TAB of the TSDF.

D. Wastes Exempt From the Rule

The EPA proposed to remove confusion over what wastes are exempt from the rule by removing paragraph (c)(3) of § 61.340. This section identified intermediate and product distillation reflux streams as examples of materials that could meet the definition of waste but are not subject to subpart FF because they are not discharged from a process. This section had caused confusion and, in the EPA's view is unnecessary since other provisions in the rule clearly indicate that materials that never leave a process are not subject to the rule. A commenter objected to the complete removal of § 61.340(c)(3), claiming that if it is removed, the EPA will be bringing streams under the rule that would have been exempt.

The EPA considered this comment but is proceeding with the deletion of § 61.340(c)(3). The exemption in this section was originally designed to apply to a narrow population of wastes that included primarily intermediate and product reflux streams, but the examples provided in the rule had been misinterpreted by some affected facilities to mean that a wider population of wastes were not subject to the rule. The EPA believes that the focus in determining which materials are subject to the rule such as identified in the commenters example should be on the definition of waste. Under this definition, waste means "any material resulting from industrial, commercial, mining, or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled or discharged."

The prior wording of § 61.340(c)(3) was unclear in that it did not adequately tie the status of materials under subpart FF to the definition of waste in the rule, and as such, led some to believe that even if a material were accumulated or stored prior to waste treatment, it might be exempt from the rule. A proper focus on the definition of waste makes § 61.340(c)(3) in the original rule unnecessary. Applying the test of whether a material is accumulated, stored, or treated prior to being discharged or recycled will resolve uncertainty about the status of a material under subpart FF in most cases.

Examples provided by commenters reinforced the need to clarify coverage of the rule in a more general way than through the limited examples previously provided in § 61.340(c)(3). For instance, a refinery example cited

by one commenter was overhead condensate from a distillation column that is recycled in enclosed piping to the crude desalter. This operation is not integral to the process. However, it is an example of voluntary direct recycle from one process to another (i.e., the material never leaves the process). As discussed in the next section, if a material never leaves a process, it is not within the scope of subpart FF.

E. Materials Recycled to a Process or Within a Process

The proposal included a revision to § 61.342(c)(1)(iii) to clarify the EPA's intent that waste streams that are recycled be managed and treated according to the requirements in § 61.342(c) up to the point that the waste reenters the process, including entry to a tank used for the storage of production process feed, product, or product intermediates. Commenters did not specifically object to this proposed clarification, but stated that further rule language was needed to clarify that materials recycled within a process or directly to another process are outside the scope of subpart FF. One commenter claimed that in the preamble to the proposed rule amendments, the EPA had indicated that recycled or reclaimed materials that are recycled within a process or directly recycled to another process are not within the scope of the rule. This commenter believes that similar language should be added to the regulation in order that there be a clear understanding on this point by both enforcement officials and the regulated community.

After consideration of the comments, the EPA believes that further clarification in the rule on materials recycled within a process or directly to another process is unnecessary. In the preamble to the proposed rule amendments, the EPA stated that "recycled or reclaimed materials will generally be subject to subpart FF unless they are recycled within a process or are directly recycled to another process." The basis for this statement was not the EPA's intent that materials recycled within a process or directly recycled to another process should by definition be exempt from the rule, but an assumption by the EPA that these materials generally would not meet the definition of waste in the rule.

To meet the definition of waste in the rule, a material must either be discarded or accumulated; stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled or discharged. The test for whether materials recycled within a process or that are recycled directly to

another process are subject to the rule is whether they are accumulated, stored, or treated prior to recycling. If they are, they are subject to the rule.

F. Definition of Waste

Although the EPA did not propose to amend the definition of waste in the original rule, several commenters suggested that the EPA take action on this. Commenters criticized the definition of waste in the rule as overly broad, discouraging pollution prevention, and covering non-waste materials. Two commenters objected to the EPA's use of spent caustic in the proposal preamble, stating that it is not always a waste. One commenter requested that the EPA redefine waste to reflect the end use of a material.

As noted, the EPA did not propose any change to the definition of waste in the original rule. The definition of waste that was promulgated in the original rule was the same as proposed on September 14, 1989 (54 FR 38083). The EPA responded to comments on the proposed definition of waste in the notice of final rulemaking issued on March 7, 1990 (see 55 FR 8318). Therefore, comments on the definition of waste in the rule that were received following publication of the proposed rule amendments are outside the scope of this rulemaking.

Regarding spent caustic, the EPA acknowledges that this material is not always subject to subpart FF. In the example presented in the proposal preamble, it was assumed that spent caustic met the definition of waste. If spent caustic does not meet the definition of waste in the rule, then it is not subject to subpart FF.

IV. Control Requirements

Several comments were received on proposed clarifying amendments affecting control requirements that apply at facilities with TAB's of 10 Mg/yr or greater. These comments and the EPA's responses are discussed below.

A. Control Requirements for Organic Wastes

A clarification to § 61.342(c)(1) was proposed to reflect the EPA's intent that all wastes (that contain benzene at a concentration of 10 ppmw or more and do not meet other exemption criteria) at a facility with a TAB of 10 Mg/yr or more are subject to the control requirements of the rule. For the purpose of the TAB calculation, aqueous wastes are those containing 10 percent or more total water and nonaqueous (i.e., organic) wastes are those containing less than 10 percent total water. Only the benzene in

aqueous wastes counts towards facility TAB. Once it is determined that a facility must install controls, the original rule made no distinction between aqueous and organic wastes. The same level of control was required for all wastes except those containing less than 10 ppmw benzene or those meeting other criteria for exemption from controls. In the proposal preamble, the EPA specifically solicited comments on the risks associated with organic waste streams.

The EPA did not propose that the benzene in organic wastes be included in facility TAB, a point apparently misunderstood by one commenter. Rather, language was included in § 61.342(a) of the proposed amendments to clarify the EPA's original intent that the benzene in organic wastes that become aqueous during waste management are included in TAB. If organic wastes are not mixed with water or with other wastes such that they become aqueous, the benzene in them is not included in TAB and, therefore, does not affect determinations of which facilities are subject to the control requirements in the rule.

Several comments were received on the need to control organic wastes and the level of control required. Most of the commenters requested that the EPA raise the threshold level for control for organic wastes in the final rule to 1,000 ppmw (i.e., not require controls for organic wastes containing benzene below this concentration level). This request was based on the commenters' assertion that the emission potential of benzene dissolved in organic waste is much lower than the emission potential of benzene dissolved in aqueous waste. One commenter presented calculations on the basis of which it was suggested that the control level concentration for organic wastes could be raised to 1,000 ppmw with no increase in emissions. Another commenter argued that organic wastes are already adequately controlled under the RCRA and that control by subpart FF was redundant.

The EPA has always acknowledged that when benzene is dissolved in organics, it is much less volatile than benzene in aqueous waste at the same concentration. This is a major reason why the benzene in organic wastes that are not mixed with aqueous wastes is excluded from the TAB calculation in the rule. However, the benzene in organic wastes can contribute to benzene emissions and risk, and further, if organic wastes are not controlled at facilities with TAB's at or above 10 Mg/yr, attainment of the NESHAP risk goals could be jeopardized. Therefore, the EPA concluded that organic wastes

should not be excluded from control at facilities with TAB's at or above 10 Mg/yr. The rule promulgated on March 7, 1990 reflected this conclusion.

In the preamble to the final rule in the March 7, 1990 Federal Register notice, the EPA also responded to commenters on the original proposed rule (proposed on September 14, 1989) who had commented that other regulations promulgated under the Clean Air Act and other Federal statutes (including the RCRA) already adequately controlled benzene emissions from waste operations. In its response, the EPA explained in detail why existing regulations are not adequate for controlling benzene emissions from benzene waste operations (see 45 FR 8321, March 7, 1990). These reasons are still valid.

After reviewing information submitted by commenters on the proposed rule amendments and other information, the EPA still believes, as discussed below, that organic wastes can be a source of significant benzene emissions and risk and, therefore, should be subject to control at facilities above the threshold for applicability of controls. In addition to the concentration of benzene in a waste and its volatility in that medium, potential benzene emissions and risk are also affected by the quantity of the waste and the manner in which the waste is managed. Commenters did not address these factors.

Although no information on the quantity of organic wastes managed at facilities subject to subpart FF was submitted by commenters on the proposed rule amendments, information supplied by facilities to comply with the reporting requirements of the original rule (in § 61.357) suggests that the quantities of organic wastes, and the benzene contained in them, may be substantial. For example, in a report summarizing the regulatory status of each waste stream submitted as required in § 61.357(a) of the original rule, one facility reported over 42,000 Mg of slop oil containing less than 10 percent total water. The average benzene reported for this organic waste was 506 ppmw, which yields an annual benzene quantity of 21 Mg/yr. Another facility reported a waste that was 19 percent benzene with a benzene quantity of almost 20 Mg/yr.

With these large amounts of benzene in organic wastes, it is critical that they be properly managed or else significant benzene emissions may result. If they are managed in covered tanks, benzene emissions can be minimal. However, if at some point the wastes are managed in tanks, aerated units, or heated units (for

example, to break emulsions) that are uncontrolled for air emissions, the benzene emissions would be much higher than if the waste is managed only in covered tanks. In addition, if the waste is splash loaded into open containers several times before final disposition or recycle, much of the benzene could be emitted.

Once a facility is subject to the control requirements of the rule on the basis of the benzene in their aqueous wastes, organic wastes are also subject to control. Organic wastes are eligible for the exemption from control promulgated in today's final rule amendments for wastes containing up to a total of 2.0 Mg/yr of benzene. However, because the potential benzene emissions and risk associated with organic wastes in certain waste management scenarios could be significant, the EPA continues to believe that organic wastes not meeting other exemption criteria in the rule should be controlled for air emissions.

At the same time, the EPA also believes that due to the acknowledged lower volatility of benzene contained in organic wastes, the level of control required for organic wastes does not need to match the level of control required for aqueous wastes. The EPA considered the suggestion by commenters to establish a control threshold specifically for organic wastes based on a benzene concentration of 1,000 ppmw. However, this suggestion puts no limit on the quantity of wastes below the control threshold or on how these wastes are managed. Consequently, if this suggestion were adopted, there could be no assurance that potential benzene emissions would be limited below a level that would not jeopardize attainment of the NESHAP risk goals. On this basis, the commenters' suggestion was rejected.

As an alternative, the EPA has retained the concentration threshold for control for all wastes at 10 ppmw benzene, but has established separate control requirements for organic wastes that have not been mixed such that they become aqueous. Considering the lower volatility of benzene contained in organic wastes and the typical fate of these wastes (generally returned to a process or incinerated), the EPA has determined that controls that suppress benzene emissions are adequate for organic wastes.

Organic wastes are managed primarily in tanks and containers. The existing requirements in the rule for containers are for covers only (unless treatment occurs in the container, in which case a closed-vent system and control device are also required) and, therefore, no

change is necessary. For tanks, however, the original rule required a fixed-roof plus a closed-vent system and control device (or the alternative controls for tanks described in § 61.351). Based on the considerations discussed above, the final rule amendments promulgated today include separate requirements for tanks in which organic wastes are managed. These separate requirements, in § 61.343(b) of the amended rule, specify that under certain conditions, a tank in which organic wastes are managed need only be equipped with a fixed roof. The vapor pressure and tank size cutoffs from the new source performance standards for volatile organic liquids in storage tanks (subpart Kb of 40 CFR part 60) have also been adopted in § 61.343(b) as additional eligibility criteria for the less stringent control requirements for tanks. For tanks above these size and vapor pressure cutoffs, the control requirements in the originally promulgated subpart FF are reasonable and typical. Most organic wastes will have vapor pressures below the specified limits or be managed in tanks smaller than the size cutoffs. Therefore, the vapor pressure and tank size cutoffs should not limit the utility of this new provision.

The new provisions for the management of organic wastes in tanks also include language that limits the conditions under which tank venting to the atmosphere may occur (see § 61.343(b)(3)). This language, in effect, means that tanks in which wastes are agitated, treated, or heated must also be equipped with a closed-vent system and control device.

B. Alternative Control Devices

Two comments were received on the proposed amendments to § 61.349 regarding alternative control devices. The original rule (§ 61.349(a)) specified requirements for closed-vent systems and control devices used to comply with the rule's control requirements. Requirements were specified for enclosed combustion devices, vapor-recovery systems, and flares. The EPA proposed to amend this section to allow owners and operators to use alternative control devices, provided that it is demonstrated, prior to the installation of the alternative device, that it will achieve 95 percent control of organic compounds or 98 percent control of benzene.

One commenter supported the proposed amendment as a positive one that would provide flexibility and provide a means to make the rule more cost effective. However, this and another commenter were also concerned

that the language of proposed § 61.349(a)(2)(iv)(E) could be interpreted to mean that an alternative control device could not be operated until approval was received from the EPA Administrator. The commenters claimed this interpretation could discourage use of this provision and the development of innovative controls. The commenters suggested options to limit the time available to the Administrator for approval or denial of an alternative device or to allow operation of an alternative control device during the approval period, with the risk that if approval is denied, a facility may be cited for violation for the period it operated the device.

It is the EPA's intent that the performance of an alternative control device be demonstrated and that information documenting that a device will meet the requirements of the rule be submitted before it is installed and operated.

If facilities were prohibited from installing and operating alternative control devices before approval is received from the Administrator, the EPA agrees that owners and operators could be discouraged from attempting to develop and use alternative control devices. However, this is not the case. After the documentation has been submitted to the EPA, the owner or operator may install and operate the device before receiving the EPA's approval. Nevertheless, the owner or operator may be subject to enforcement action beginning from the time the control device began operation. For example, if the EPA disapproves of the device, the facility may be cited for violation for the period it operated the device. Even if the EPA approves of the use of the device, an owner or operator may not have operated the device in accordance with § 61.349 for a portion of the time period before approval was granted. In such a case, the EPA may cite the facility for a violation during that period.

The EPA considered placing a limit in the rule on the time available to the EPA to review information submitted on alternative control devices and to issue approval or denial. However, the review of each device proposed will be different, and the level and complexity of information that will be submitted to document performance cannot be predicted. For this reason, the EPA concluded that it is not reasonable to limit the amount of time available to the EPA to review the information submitted and to issue approval or denial.

The EPA does not, however, want concern about the possible time

quired to receive approval from the Administrator to discourage the development of alternative control devices that will not meet or exceed the performance requirements of the rule. This was the EPA's original intent, but apparently, it was unclear in the language proposed. Therefore, the EPA has included language in the rule that will allow owners and operators at their risk to install and operate alternative control devices, pending approval by the Administrator, provided information and data on the device have been submitted as required by the rule. If an owner or operator chooses to install and operate an alternative control device prior to receiving approval and the EPA determines that the control device did not achieve the emission limitations or was not properly operated, the owner or operator may be cited for noncompliance with subpart FF during the period after the compliance date that the device was operated.

C. Other Comments on Control Requirements

The EPA received comments on the proposed amendment to § 61.349(a)(1)(ii) that would allow, as an alternative to flow indicators required in the original rule, the use of car-seals to indicate the position of any valves that might be used to divert the flow of emissions from a control device. One commenter supported the proposed amendment, and suggested that small connections (e.g., low-point drains and high-point bleeds) on the closed-vent system be excluded from requirements for flow indicators, car-sealed valves, and recordkeeping. Another commenter suggested plugging, capping, or blinding as an alternative to car-sealed valves for some vents and drains installed for maintenance around control devices.

The EPA believes that it is essential that air pollution control systems installed to meet the rule be equipped such that it can easily be determined if emissions are being routed to a control device. Any opening that allows emissions to by-pass a control device for an extended period of time can be a potential source of significant air emissions. It is the EPA's intent that routine opening of potential avenues of control device by-pass be prevented and monitored. It should be pointed out, however, that not all openings are prevented. Openings such as emergency venting of pressure relief devices are permitted to prevent physical damage to the closed-vent system and control device. Opening of low-point drains as described by the commenter would also be allowed as long as the drain does not

permit diversion of the vent stream away from the control device.

Flow indicators and car-sealed valves provide easily observable visual evidence that control systems are not being by-passed, are widely used in industry, and are required in other NESHAP. These devices also provide recordable evidence that emissions may be escaping, whereas plugs and caps can be removed with no evidence visible that emissions are actually escaping. Although plugging and capping can be effective in controlling fugitive emissions that result from equipment leaks when used in combination with valves, the commenters do not make a strong argument why these would be as effective as flow indicators or car seals in demonstrating the integrity of a closed-vent system, especially without the valve before the cap or plug. For these reasons, § 61.349(a)(1)(ii) is not changed from proposal.

The EPA also received comments on the need for dilution air to prevent explosive mixtures in the headspace of waste management units. The EPA agrees with the commenters and the final rule has been amended to allow the addition of dilution air into waste management units that are maintained at less than atmospheric pressure. Facilities must do annual monitoring to demonstrate no detectable emissions from the opening. Also, the pressure must be monitored continuously to ensure that the pressure remains below atmospheric pressure.

One commenter asked the EPA to recognize that there are equipment cleaning and waste removal activities that are not feasible to control, and requested that these be excluded from the control requirements of the rule. Examples cited were routine pipe, strainer, and equipment cleaning; and tank and vessel cleaning.

When tanks and other equipment are opened for cleaning, the emissions from the tank opening are not covered by subpart FF. However, cleaning activities generate wastes subject to subpart FF. If the wastes have 10 ppmw or greater benzene, then the wastes must be controlled and treated in accordance with the rule. To simply exempt these wastes from control without any cap that would limit potential emissions would jeopardize attainment of the NESHAP risk goals. Therefore, these activities are not, by definition, exempted from the control requirements of the rule.

However, the EPA has included an option in the rule amendments promulgated today, as described in the next section of this preamble, that is specifically designed to provide an

option for facilities to exclude from control wastes that contain benzene in small quantities, such as those cited by the commenter. Under this option, in § 61.342(c)(3), owners and operators may exclude wastes containing up to a total of 2.0 Mg/yr of benzene from the control requirements of the rule. There are no limits on which wastes are eligible. The EPA believes that with this option, and other compliance options provided in the rule as amended, owners and operators have flexibility in deciding which waste streams to control while the EPA limits the maximum possible emissions.

Since proposal of the clarifying rule amendments, questions have been submitted to the EPA concerning the definition of "water seal controls" in § 61.341 of the rule. Water seal controls are identified as acceptable controls for drains and junction boxes in the alternative standards for individual drain systems specified in § 61.346(b).

In the original rule, "water seal controls" is defined as "a seal pot, p-leg trap, or other type of trap filled with water that has a design capacity to create a water barrier between the sewer line and the atmosphere." The EPA has been asked if the examples cited in this definition are the only acceptable types of water seal controls. Other potential types of water seal controls identified by questioners were flooded sewers and baffle plates on junction boxes that extend to below the liquid surface.

The objective of the controls specified for drains and junction boxes in an individual drain system is to isolate them such that the free flow of vapors within the system is prevented. The examples cited in the original definition of water seal controls in the rule were not intended to be limiting. Other types of seals that achieve this objective are also acceptable. More specifically, flooded sewers are an acceptable control technique for individual drains and junction boxes, provided that the liquid level in the seal is maintained in the vertical leg of the drain. A baffle plate is an acceptable control for a junction box, provided each plate extends below the liquid level. In the final rule amendments, additional examples of acceptable controls have been added to the definition of water seal controls in § 61.341 to clarify this point. It is also clarified that for all water seals for drains, the water level must be maintained in the vertical leg of the trap for it to be considered a water seal.

V. Additional Exemption for Small Benzene Quantity Wastes

Numerous commenters addressed the proposed additional option for

exempting wastes that contain small quantities of benzene from the control requirements of the rule. The EPA proposed (in § 61.342(c)(3)) that wastes containing a total of up to 1.0 Mg/yr of benzene, on an annual basis, could be exempted from control, with certain restrictions. The proposed restrictions on the use of this exemption option were that (1) the annual quantity of benzene in any waste stream exempted under this provision, except for process wastewater, could not exceed 25 kilograms per year (kg/yr); (2) if this option were elected by a facility, it would be as an alternative to the low-flow or mass quantity cutoffs for process wastewater in § 61.342(c)(3); and (3) tank drawdown and wastes from purging prior to sampling ("sample purge") would not be eligible for the proposed exemption.

In general, commenters supported the concept of providing an additional option in the rule for exempting small benzene quantity wastes from control. However, numerous commenters objected to the proposed limits on the use of the option. Commenters also requested that the EPA raise the amount of benzene that can be exempted from 1.0 to 2.0 Mg/yr. Some commenters argued that there should be no limit on either the quantity or type of streams that could qualify for the exemption, as long as the cap on the total amount of benzene was not exceeded. Other commenters specifically requested that the restrictions placed on tank drawdown and sample purge be removed. One commenter suggested that tank drawdown should not be excluded from the proposed exemption option if the tank drawdown were equipped with an oil/water monitoring device that can detect the presence of hydrocarbon in the water phase and automatically close the tank draw. Some commenters requested additional clarifying language in the regulation on which wastes would not be excluded from the proposed option.

After reviewing the comments submitted, the EPA has concluded that providing an additional option for exempting small benzene quantity wastes from the control requirements of the rule is still appropriate. However, in the final rule amendments, several changes have been made to the proposed exemption option based both on an assessment of the comments and on concerns the EPA has related to the tracking of wastes exempted under this provision. These are discussed below.

Specifically, the 25 kg per stream quantity limit and the exclusion of tank drawdown and sample purge from eligibility in the proposed exemption

provisions have been removed. The cap on total benzene that may be exempted has also been raised to 2.0 Mg/yr.

The EPA's intent in proposing the additional exemption option was to expand the range of options available to owners and operators in seeking the most cost effective control strategy at each facility that must install controls to comply with the rule. In developing the proposed amendments, concerns related to tank drawdown and sample purge led the EPA to propose that these wastes would not be eligible for the new small quantity benzene exemption. Specifically, the volume and benzene content of waste streams generated through tank drawdown are highly dependent on the techniques of individual operators, making the monitoring of compliance by enforcement agencies difficult for these streams. Sample purge is required to be controlled under certain conditions by other NESHAP applicable to facilities also subject to subpart FF, and the EPA did not want to imply that the requirements of other standards would be overridden by allowing sample purge to be excluded from control under subpart FF.

Commenters argued forcefully that the restrictions proposed on use of the exemption option and the 1.0 Mg/yr of benzene proposed cap could severely limit its utility. After weighing these arguments against the EPA's earlier concerns, as discussed below, the EPA concluded that to accomplish its goal of providing a viable additional option for exempting small benzene quantity wastes, there should be no limits on which waste streams are eligible for the exemption. Further, a reevaluation of the cap indicated that the NESHAP risk goals would still be met if the cap were raised to 2.0 Mg/yr. The increase to 2.0 Mg/yr does allow benzene emissions to increase but it would not allow any facility to exceed one in ten thousand and it still results in significant reductions in population exposed to greater than one in one million risk. Thus, in the final rule amendments, any stream is eligible as long as the total benzene in all streams exempted under this provision is less than 2.0 Mg/yr.

As in the proposal, however, if this option were elected by a facility, the facility would not also be able to take advantage of the low-flow or mass quantity cutoffs for process wastewater in § 61.342(c)(3). Further, any facility electing to comply with the alternative compliance option for the rule would not also be able to exempt streams from control under the small quantity exemption options (please see section VI of this preamble).

Although the restrictions proposed for the exemption option have been removed in the final rule amendments, the EPA remains concerned about the potential for facilities to underestimate the quantity of benzene in an exempted stream. Incorrect determinations could cause the actual risk to be higher than the risk associated with 2.0 Mg/yr if the incorrect determinations result in greater than 2.0 Mg/yr of benzene in exempted wastes.

This is of particular concern for tank drawdown. As mentioned previously, the quantity of tank drawdown waste generated during each tank water draw and the benzene content of this waste is determined by individual operators and can be highly variable. Further, tank drawdown can be a multiple phase waste, making determination of the average benzene concentration difficult and subject to error. These factors make the quantity and benzene concentration of tank drawdown highly variable and difficult to predict. This creates a significant potential for the benzene in these wastes to be severely underestimated by facilities. Although less variable than tank drawdown, the quantity and benzene concentration of other small quantity wastes can also be difficult to predict.

Due to the variability in tank drawdown, the difficulty inherent in estimating the benzene content of these and other small quantity wastes, and without the restrictions on use of the option that were in the proposal, the EPA believes that it is critical that wastes exempted under this option be tracked separately and be easily identifiable by enforcement agencies. Facilities subject to subpart FF generally must already identify and characterize all benzene-containing waste streams in order to prepare the initial and annual reports required by the rule summarizing the regulatory status of each waste stream. For the purpose of tracking wastes exempted under § 61.342(c)(3), this general requirement has been clarified in the final rule amendments to specify that waste streams exempted under § 61.342(c)(3) must be separately identified in these reports. Further, the mass of benzene in these streams must be separately totaled to demonstrate compliance with the 2.0 Mg/yr benzene limit. Finally, although owners and operators are still allowed to use knowledge of the waste to estimate the concentration of benzene in these streams, it is clarified in the rule that the Administrator may require measurements to verify estimated concentrations in the case of disputes.

Due to the concerns the EPA has about tank drawdown, the suggestion by

a commenter to require a device that would automatically shut off tank draw when organic material is detected was considered. A device such as this could minimize the amount of tank drawdown waste generated by eliminating the potential for operator error. The EPA did not, however, adopt this suggestion. While at least one facility has found shut-off devices helpful in controlling tank drawdown, these devices are not widely demonstrated to be technically feasible. In addition, the cost of equipping all tanks that must be controlled under this rule with these devices may be prohibitive. Consequently, the commenter's suggestion was not adopted in the final rule amendments.

It should be noted that although the exemption option in the final rule amendments contains no restrictions on which streams may be exempted under this provision, this does not override the requirements of other NESHAP that may require control of specific streams. In particular, subpart L, applicable to coke by-product recovery facilities, and subpart J, applicable to equipment leaks of benzene, contain requirements to control benzene emissions during sampling that apply under conditions specified in those standards.

VI. Alternative Compliance Options

In the March 5, 1992 notice of proposed rulemaking, the EPA specifically solicited suggestions from the public for other structures for the rule, including supporting information, that would encourage reclamation and recycling without compromising attainment of the NESHAP risk protection goals (57 FR 8022). The EPA stated that any rule structures suggested would be considered as an alternative compliance option to the structure of the rule originally promulgated on March 7, 1990.

In the notice of proposal, the EPA set forth several criteria that must be met for suggested alternative rule structures to be considered. First, the supporting information submitted must clearly describe the suggested structure and level of protection it would provide. Secondly, any structure suggested should address the benzene emission concerns including, but not limited to, characterizing and assuring adequate control of the benzene emissions that would result from aqueous waste treatment processes, nonaqueous wastes, treatment residuals, or materials sold offsite. Thirdly, the structure should be generic in that it should be able to be applied at any facility and result in achievement of the NESHAP risk protection goals. The proposal

specifically stated that the EPA was not seeking suggestions for structures based on site-specific control or risk protection. The last criterion for suggested structures was that any structure suggested should be one that can be developed and evaluated for the level of protection it provides within the timeframe of this rulemaking.

A. Compliance Options Suggested by Commenters

In response to the EPA's request in the notice of proposal, several alternative compliance options were suggested by commenters. Four general types of options were suggested. These can generally be described as (1) site-specific risk assessment, (2) emissions averaging, (3) a structure based on other existing rules that would not require calculation of TAB, and (4) treat to a target benzene quantity in waste. The suggestions made by commenters are referred to as compliance options rather than alternative rule structures because they would not change the fundamental way that facilities become subject to the control requirements in the rule, but rather would provide an alternative way to comply with these requirements.

There were also commenters who argued that the EPA should not promulgate any alternative compliance options, but require all facilities subject to the rule to comply with the rule as originally structured. These commenters contend that for the EPA to provide a more cost effective compliance option at this time would reward those facilities that did not meet the original schedule for compliance and penalize those facilities that did comply on schedule with the original rule by putting them at a competitive disadvantage.

After consideration of these comments and additional analysis, the EPA determined that a treat to a target benzene quantity compliance option would best meet the criteria set forth in the notice of proposal. Consequently, an alternative compliance option of this type is included in the final rule amendments promulgated today. A brief discussion of each compliance option suggested by commenters, and the rationale for selecting the compliance option promulgated today, is presented below.

As noted earlier, the EPA is publishing an ANPR in the Federal Register announcing the EPA's intent to propose for public comment an additional compliance option based on site-specific risk assessment.

Site-Specific Risk Assessment

Several commenters suggested that the EPA should allow any facility above

the facility control applicability threshold of 10 Mg/yr TAB to conduct a site-specific risk assessment to demonstrate either that controls were not needed or that controls less than mandated by the rule would meet the NESHAP risk goals. Although suggested by several commenters, site-specific risk assessment as an alternative compliance option does not meet two of the criteria set forth in the March 5, 1992 notice of proposed rulemaking. As noted earlier, the EPA's solicitation of suggestions for alternative rule structures specifically stated that the EPA was not seeking suggestions for structures based on site-specific control or risk protection. The suggestion of site-specific risk assessment as an alternative compliance option clearly does not meet this criterion. Further, it was stated in the March 5, 1992 notice of proposed rulemaking that any structure suggested should be one that could be developed within the timeframe of this rulemaking (i.e., by today's date). Due to the need to resolve risk assessment policy issues and to prepare guidance for both facilities and regulatory agency personnel on how to conduct and evaluate risk assessments for benzene waste sources, the development of an alternative compliance option for subpart FF involving site-specific risk assessment would have been impossible within the timeframe of this rulemaking. For these reasons, site-specific risk assessment was not considered by the EPA as a viable alternative compliance option to be included in the rule amendments promulgated today.

Emissions Averaging

Three commenters suggested that control strategies involving benzene emissions averaging, or "bubbling," across all benzene emission sources at a facility, be allowed by the EPA as a compliance option for subpart FF. Commenters contend that at some facilities, reductions in benzene emissions from sources not covered by subpart FF (e.g., process vents or vehicles) can be achieved at less cost than controlling low-flow, low-concentration benzene waste streams. Further, commenters argue that the EPA should not be concerned about which sources at a facility are controlled if the total benzene emission reduction achieved at the entire facility is equivalent to what would have been achieved with controls as specified in the rule for benzene waste sources.

One suggestion made by commenters to implement emissions averaging is for the EPA not to change the language of § 61.353 of the rule, "Alternative Means of Emission Limitation," as proposed in

the March 5 notice. Commenters contend that without the proposed change, the EPA may approve emissions averaging strategies under this section. Emissions averaging was also indirectly suggested by other commenters who criticized the proposed change to § 61.353 as limiting consideration of emissions to those "from the source."

The EPA does not view emissions averaging as suggested by commenters to be a viable candidate for promulgation at this time as an alternative compliance option for subpart FF. Similar to the compliance option based on site-specific risk assessment suggested by other commenters, emissions averaging does not meet the criteria set forth for an alternative rule structure for subpart FF in the March 5 notice. Emissions averaging is also an inherently site-specific compliance option that would require consideration and analysis by the EPA of proposals from facilities on a case-by-case basis, with each proposal based on the unique characteristics of benzene emission sources at individual plants. Further, some commenters suggest that they be allowed to control benzene emissions from sources outside of the scope of applicability of this rule as an alternative to controlling some benzene waste sources. This raises regulatory and other issues that cannot be resolved within the timeframe of the current rulemaking. For these reasons, the EPA did not select emissions averaging as an alternative compliance option for subpart FF at this time.

The change proposed to § 61.353 by the EPA was to correct an inadvertent omission of language that would make this section consistent with the language of the General Provisions to part 61. Based on the decision not to adopt emissions averaging as an alternative compliance option for Subpart FF at this time, § 61.353 is promulgated in today's rule amendments as proposed.

Compliance Option Based on Other Existing Rules That Would Not Require Calculation of TAB

One commenter suggested an alternative compliance option incorporating the requirements of other new source performance standards (NSPS) and NESHAP, that, if elected by a facility, would not require a facility to perform or document the calculation of TAB. This commenter claimed that the control requirements of subpart Kb of part 60, and subparts Y, V, and BB of part 61 would, for example, provide adequate emissions limitation if also applied to low-concentration benzene waste streams. The commenter provided detailed regulatory language to

implement this suggestion and contended that this alternative compliance option would be widely used by industry and would result in equal or better emissions reduction at a much lower cost to both industry and government agencies as a result of more uniform regulatory provisions.

For several reasons, the EPA did not adopt this suggested alternative compliance option in the final rule promulgated today. One of the criteria set out in the proposal notice is not met in that the commenter provided no estimates of benzene emissions and risk associated with the suggested alternative, and not enough information was submitted for the EPA to make these estimates. There are substantive differences in the technical requirements in the suggested regulatory language provided by the commenter as compared to the requirements in subpart FF (and in the proposed amendments) that could jeopardize attainment of the NESHAP risk protection goals. For example, the regulatory language suggested by the commenter exempts from control all waste streams that contain less than 10 kg/yr of benzene, with no cap on total mass of benzene exempted.

Also, there are no requirements in the suggested regulatory language that facilities keep records of the quantity and benzene concentration individual waste streams or of how wastes are managed. The EPA views the identification and tracking of wastes through proper recordkeeping as an essential element of the original rule and of any alternative compliance option. The need to keep records of wastes subject to the rule is particularly critical for wastes claimed to be exempt from control by owners and operators on the basis of low benzene concentration, benzene quantity, or under other compliance options provided in the rule. Without recordkeeping requirements to identify, characterize, and track the management of these wastes, there can be no assurance that the requirements of the rule are met.

The EPA disagrees that other NSPS and NESHAP provide adequate emission limitation for waste streams. Although many aspects of the control requirements of subpart FF are very similar to the control requirements of other rules, there are distinct differences in the sources and materials covered by each rule that warrant separate standards. This was discussed in the EPA's response to a similar comment submitted when subpart FF was originally proposed (see 55 FR 8321, March 7, 1990).

Although the commenter claimed that the suggested alternative compliance option would be widely used, there was no evidence supplied supporting this contention. Based on the considerations discussed above, and given the time and resources that would be required to evaluate all elements of the commenter's suggested regulatory language, the EPA did not adopt this commenter suggested alternative compliance option in the final rule amendments.

One motivation for the commenter's suggested alternative appears to be to avoid the calculation of TAB. The EPA does not view the requirement that TAB be calculated by sources affected by the rule as overly burdensome. As described in § 61.355, direct measurement of flow rate and benzene concentration of waste streams is not required, although it is acceptable. For example, the flow rate of wastes through a waste management unit can be determined based on the unit's maximum design capacity, and the concentration of benzene in a waste stream can be determined based on knowledge of the waste. Further, the initial calculation of TAB should have already been completed by facilities since its promulgation on March 7, 1990. The amendments promulgated today do not substantively change the way TAB is calculated. Therefore, the resubmission of the TAB calculation and the periodic update of the TAB calculation by facilities as required in today's final rulemaking should require minimal additional expenditures beyond what is required to characterize changes since the last update.

Treat to a Target Benzene Quantity

Four commenters suggested that the rule should include an alternative under which facilities could treat only those streams necessary to lower the total benzene in waste to a specified target level. Three commenters, without providing any details of how such an option would be implemented, suggested that the target level should be 10 Mg/yr, the same as the TAB threshold in the rule for facility control.

In the most detailed description of an alternative compliance option of this type, one commenter suggested that only the benzene in wastes not recycled or recovered should be counted in the calculation of TAB. Materials sent offsite for recycling or resale would also not count towards facility TAB provided that these wastes were not exposed to the atmosphere. Coupled with the TAB calculation that would exclude recycled, recovered, or resold materials, this commenter suggested that the facility applicability threshold be

lowered to 6 Mg/yr in the alternative compliance option. The commenter claims that his suggested compliance option would encourage pollution prevention approaches and estimates that typically 40 percent of the benzene waste contained in refinery waste streams is technologically capable of being reclaimed or recycled.

The EPA agrees that an alternative compliance option based on a target benzene quantity would encourage recycling and reclamation. Further, it meets the criteria set out in the March 5 notice for an alternative structure. However, there are two concerns about the specifics of the suggestions made by commenters. First, as noted above, some commenters suggested that the target level should be equal to the facility threshold control level, based on TAB, of 10 Mg/yr. The EPA stated in the preamble to the proposed rule amendments published on March 5, 1992, and in the preamble to the final rule issued March 7, 1990, that the 10 Mg/yr control threshold was not intended to be a target level, and that a target level, if established, would need to be less than 10 Mg/yr to guarantee attainment of the NESHAP risk protection goals.

Second, the descriptions of the treat to a target alternatives suggested by some of the commenters imply that if a facility met the target level, then it would not be subject to the monitoring, reporting, and recordkeeping provisions of the rule. Facilities would, in effect, be able to "treat out" of the rule. Because facilities above the 10 Mg/yr TAB control threshold level have been identified as potentially not meeting the NESHAP risk protection goals if controls are not installed, operated, and maintained properly, the EPA believes that all facilities subject to control requirements should also be subject to monitoring, reporting, and recordkeeping requirements.

Based on the considerations described above, the EPA has developed and included in the final rule amendments promulgated today an alternative compliance option based on treatment to a target benzene quantity. The proposal solicited alternative compliance options that would encourage reclamation and recycling. This structure is conceptually based on responses of commenters to that solicitation, with specific variations to address concerns of the EPA.

B. Description of Alternative Compliance Option Selected by the EPA for Promulgation

As discussed above, the EPA selected treat-to-a-target benzene quantity as the

format for an alternative compliance option. This compliance option is available to facilities who are subject to the control requirements of the rule. To demonstrate compliance under this new alternative, a facility determines its benzene quantity. The facility benzene quantity is determined by summing the mass of benzene in all aqueous wastes subject to the rule at the point where each waste first enters a waste management unit that is not controlled for air emissions to at least the same degree required by §§ 61.343 through 61.348(a). The benzene in wastes that are aqueous at their point of generation and the benzene in wastes that become aqueous through mixing are included in the target benzene quantity. Wastes that are organic (and remain organic) must be managed in controlled units under this option. The facility target benzene quantity alternative compliance option is an alternative within the general standards. A facility choosing this option is not allowed to use the process wastewater exemption or the 2.0 Mg/yr small benzene quantity exemption.

To determine the target benzene quantity level for this alternative, the EPA used the same modeling and exposure analysis performed to support development of the original rule. The analysis indicated that a target benzene quantity of 6.0 Mg/yr, even under reasonable worst-case assumptions, would meet the NESHAP goals for maximum individual risk and total population risk.

In the final rule amendments, the alternative compliance option is set forth in § 61.342(e). Under this provision, the owner or operator may choose to control or treat any combination of aqueous waste streams that contain benzene provided that the target benzene quantity is maintained below 6.0 Mg/yr. Organic wastes are required to be managed in units controlled for benzene air emissions as they would be without the target benzene quantity alternative compliance option.

The rule specifies that under this alternative compliance option, the target benzene quantity is calculated by summing the mass of benzene in all waste streams managed in units that do not comply with §§ 61.343 through 61.348(a). The mass of benzene is determined at the point of generation for a waste stream if the first unit in which the waste is managed is not equipped with air emission controls as specified in the rule. If the first unit after the point of generation is controlled, the mass of benzene in each waste stream is determined at a point before the waste enters the first unit that is not controlled

for benzene air emissions in accordance with §§ 61.343 through 61.348(a).

The EPA recognizes that in some waste management scenarios, wastes may be mixed in ways that could result in multiple counting of benzene in the determination of the target benzene quantity. For example, where controlled and uncontrolled wastes are combined in a controlled unit and then later managed in an uncontrolled unit, the benzene quantity determined in the resultant stream would contain benzene previously counted toward the target benzene quantity, since, as described in this example, some of the wastes were managed in uncontrolled units prior to combination. In this situation, the final rule requires that the total benzene quantity in the combined stream be determined to count towards the target benzene quantity. However, if this approach results in a benzene quantity that exceeds the 6.0 Mg/yr target benzene quantity, and a portion of the benzene has previously been included in the benzene quantity, the benzene quantity determined for the combined stream may be corrected to not double count the portion of the benzene that had been counted previously. In this correction, losses of benzene due to emissions, removal, or destruction in management units prior to the determinations for the combined streams shall be calculated and considered in the target benzene quantity. All calculations must be documented.

Similar to the determination of facility TAB, the benzene in all materials that meet the definition of waste in the rule and that contain 10 percent or more of water (or that are combined with other streams such that they contain 10 percent or more of water) must be included in the target benzene quantity determination except for those materials exempted from all aspects of subpart FF in § 61.340(c). Wastes transferred offsite must also be included in the target benzene quantity determination. For the purpose of determining the target benzene quantity, the benzene in an aqueous waste managed entirely in units uncontrolled for air emissions is counted at the waste's point of generation. The benzene in an aqueous waste managed in units equipped with air emission controls is counted at the point where the waste enters the first waste management unit not controlled for air emissions to the level required by the applicable control requirements of §§ 61.343 through 61.348(a). The benzene in an aqueous waste that is treated to reduce benzene is counted after the treatment device when the

waste first enters a unit not controlled to the level required by §§ 61.343 through 61.348(a), provided that the treatment device and the units in which the waste is managed prior to treatment are controlled for air emissions. If each waste stream entering an enhanced biodegradation unit is less than 10 ppmw on a flow-weighted annual average basis and all prior units are controlled, then the benzene entering the enhanced biodegradation unit is not included in the determination.

Organic wastes (i.e., those containing less than 10 percent water) are not included in the target benzene quantity unless they are mixed with other materials such that they become aqueous. For example, the benzene in an organic waste managed in a wastewater system not controlled to the level required by §§ 61.343 through 61.348(a) where the waste becomes mixed with aqueous waste is included in the target benzene quantity based on the benzene content of the waste at its point of generation or if an organic waste is managed in controlled units, where the waste enters the first unit not controlled to the level required by §§ 61.343 through 61.348(a).

However, the control requirements for organic wastes that remain organic during waste management are still applicable under this alternative. That is, organic wastes containing 10 ppmw or greater of benzene must be managed in units equipped with air emission controls to the level required by subpart FF. Further, an owner or operator who selects this alternative compliance option may not also take advantage of any other compliance option in the rule under which wastes may be exempted from control such as the option for exempting wastes containing up to 2.0 Mg/yr of benzene in § 61.342(c)(3).

There are three key differences in how the benzene quantity is determined under the new alternative compliance option as opposed to how facility TAB is determined. First, as already mentioned under the target benzene quantity alternative compliance option, if a waste stream is continuously managed beyond the point of generation in waste management or treatment units equipped with air emission controls, benzene concentration and quantity are not determined at the waste's point of generation, as would be done for TAB, but at a point before the waste enters the first unit not controlled to the level required by §§ 61.343 through 61.348(a). Second, the benzene in remediation wastes, which is not included in TAB, is included in the target benzene quantity determination. Third, the benzene in process unit turnaround

wastes, which may be averaged over the period between turnarounds in the calculation of TAB, is included in the target benzene quantity determination in the year in which the wastes are generated.

Remediation wastes are not included in the calculation of TAB to not discourage voluntary remediation actions by facilities whose TAB's are below 10 Mg/yr by not subjecting them to the control requirements of the rule. Since treatment to lower TAB is not allowable, these facilities have no options that would keep the remediation wastes from possibly affecting facility applicability.

In contrast, the target benzene quantity alternative compliance option is an optional means of compliance available to facilities determined to be subject to the control requirements of the rule. Facilities have flexibility to take actions (such as treating wastes) that affect the calculation of the benzene quantity that they do not have with TAB. Due to the flexibility available under the target benzene quantity alternative compliance option, the EPA believes it is appropriate that the benzene in all aqueous wastes, including the benzene in aqueous remediation wastes, be included in the benzene quantity.

Similarly, the benzene in process unit turnaround wastes may be averaged over the period between turnarounds in the calculation of TAB due to a facility applicability concern, namely to reduce the impact on small facilities whose TAB would go above 10 Mg/yr only in years that turnaround occurs if averaging were not allowed. With the flexibility provided under the target benzene quantity option, a facility may treat process unit turnaround wastes if necessary to keep its benzene quantity below 6.0 Mg/yr. Considering this flexibility, the EPA sees no need to provide an averaging option for process unit turnaround wastes under the target benzene quantity alternative compliance option.

A facility that selects the target benzene quantity alternative compliance option must also account for wastes that are sent offsite. The benzene in wastes sent offsite that contain 10 percent or more of water at their point of generation counts towards the target benzene quantity of the facility from which the waste is transferred (e.g., the generating facility). The benzene quantity of these wastes is determined at the point before the waste enters the first unit that is not controlled according to §§ 61.343 through 61.348(a). This point may be at the offsite facility provided that documentation of the

benzene quantity is obtained from the offsite facility and the documentation also indicates that the waste is managed in controlled units up to the point the benzene quantity is determined. The benzene in wastes that are input to another process at an offsite facility may be counted as zero in the determination of target benzene quantity for the generating facility, provided the waste is managed in units controlled according to §§ 61.343 through 61.348(a) prior to reentering a process and documentation is obtained. A generating facility without documentation from the offsite facility determines benzene quantity of these wastes at the point where the waste leaves the generating facility, assuming the waste is managed in units controlled according to §§ 61.343 through 61.348(a) up to that point. All organic wastes sent offsite must also be controlled at the receiving facility in units that meet subpart FF control requirements, and documentation of these controls must be obtained by the generating facility.

Similar to the notification requirements in the rule for other wastes required to be controlled under subpart FF that are sent offsite, the rule requires the generator to include, with each shipment of waste that must be controlled under the target benzene quantity alternative compliance option, a notice to the receiving facility indicating that the waste is subject to subpart FF and how it must be controlled at the offsite facility.

The target benzene quantity alternative compliance option is also available to a TSDF that is subject to the control requirements of subpart FF because the facility has a TAB of 10 Mg/yr or greater. However, any wastes received by the TSDF that have been designated for control under a generator's compliance plan under §§ 61.342(e) or (f) are not eligible for less stringent control at the TSDF under the target benzene quantity compliance option.

As noted earlier, the EPA held several meetings following proposal of the clarifying amendments to discuss possible alternative compliance options for subpart FF with representatives of individual companies, trade associations, and an environmental group. At these meetings, the EPA presented a tentative description of the target benzene quantity alternative compliance option.

Following these meetings, members of industry suggested that streams containing less than 10 ppmw benzene not be included in the determination of benzene quantity. However, no information was submitted on the total

mass of benzene in these streams, or on their impact on their contribution to facility benzene emissions and risk.

The EPA intended that the target benzene quantity alternative compliance option encompass all waste streams managed at a facility, including those containing less than 10 ppmw of benzene. This provides the maximum degree of flexibility to owners and operators in choosing a compliance approach while still limiting benzene emission to ensure that the NESHAP risk goals will be met. For example, an owner or operator may find that it is more cost effective to treat certain high volume waste streams containing less than 10 ppmw benzene than controlling numerous other low volume streams, such as maintenance wastes, containing higher concentrations of benzene. The target benzene quantity alternative compliance option would allow this.

Further, the benzene in all waste streams, including the benzene in less than 10 ppmw benzene streams, was counted towards the benzene quantity in the analysis that identified 6.0 Mg/yr as a target benzene quantity level that would meet the NESHAP risk goals. If streams containing less than 10 ppmw of benzene were to be excluded from the target benzene quantity, the target level would be substantially lower than 6.0 Mg/yr to ensure that the NESHAP risk protection goals would be met. For these reasons, the benzene in waste streams with less than 10 ppmw benzene must be included in benzene quantity as it is determined under the final rule amendments.

VII. Monitoring, Recordkeeping, and Reporting

Comments were received on specific monitoring, recordkeeping, and reporting requirements included in the proposed clarifying amendments. In addition, general comments on the reporting and recordkeeping burden associated with the entire rule were received. These comments and the EPA's responses are presented below.

A. Proposed Clarification on Monitoring Requirement for Wastewater Treatment Systems

In the March 5, 1992 notice, the EPA proposed that § 61.354(b) of the rule be changed to require that the flow rate and benzene concentration of each stream entering the first unit not controlled for air emissions (an "exempt unit") be continuously monitored, except for biodegradation units. For each enhanced biodegradation unit that is the first exempt unit in a treatment train, it was proposed that the benzene concentration of waste streams entering

the unit be continuously monitored. These changes were proposed to make the § 61.354(b) monitoring requirements consistent with the control requirements for wastewater treatment systems complying with § 61.348(b). Section 61.354(b) in the original rule required monitoring of the flow rate of each wastewater stream exiting the wastewater treatment system. The EPA's intent, as explained in the preamble to the proposed clarifying amendments, was that monitoring be conducted of both the flow rate and benzene concentration of streams entering the first exempt unit, and of the benzene concentration of streams entering enhanced biological treatment units.

Numerous commenters objected to the proposed change to § 61.354(b). Many commenters stated that the continuous monitoring of benzene in waste streams is unduly expensive. Cost estimates cited by commenters ranged from \$300,000 capital costs for an entire plant to over \$350,000 for each waste stream. One commenter estimated that between 10 and 40 analyzers would be necessary at the typical refinery, resulting in annual costs ranging from \$3.5 million to \$14 million for continuous benzene monitoring at a single facility.

Some commenters argued that monitoring requirements were unnecessary. Others suggested that other less frequent techniques, such as periodic grab sampling, would provide information comparable to continuous monitors.

After an evaluation of the comments received and further investigation, the EPA has revised the monitoring requirements for wastewater treatment systems in § 61.354(b) in the final rule amendments. Monitoring of the flow rate and benzene concentration of the streams entering the first exempt unit is required, as well as monitoring of the benzene concentration of the streams entering an enhanced biological treatment unit. However, the proposed requirement for continuous monitoring has been deleted. Instead, monthly determinations are required.

Since compliance with the wastewater treatment system provisions of § 61.348(b) is based on a determination of the total mass of benzene in streams entering exempt units, and the benzene concentration of streams entering both exempt units and enhanced biological treatment units, the EPA believes that monitoring of these parameters is reasonable and appropriate. Although compliance is based on annual flow rates and annual average benzene concentration of streams managed in the wastewater treatment system, monitoring of these

parameters on a more frequent basis will track fluctuations in flow rate and concentration. Data obtained through this monitoring will provide an early indication of whether compliance will be achieved on an annual basis and allow owners and operators to make changes in process or waste management operations if necessary.

Although, for these reasons, the EPA believes that monitoring is reasonable and appropriate, further investigation of the cost of continuous monitoring systems led the EPA to agree with commenters that the costs of these systems outweigh the benefits for the purposes of this rule. Vendor estimates obtained by the EPA of the capital cost of a system to continuously monitor benzene concentration ranged from \$40,000 to \$125,000 per stream monitored. In addition to the initial cost of the system, maintenance costs can be significant. For example, the EPA estimates that the annual costs of the weekly calibration required could be about \$10,000 per monitoring device. While these costs are lower than those estimated by commenters, the EPA considers these costs to be high when compared to other available options.

The EPA believes that for the purposes of monitoring compliance with § 61.348(b), monthly determinations of benzene concentration and flow rate are adequate. Units that are expected to be exempt from control are likely to be near the end of the wastewater treatment system, after the mixing of many waste streams and management in units that tend to dampen out variation in flow and concentration. Therefore, frequent fluctuation in the benzene concentration is not expected. This sampling frequency is consistent with the requirements contained in § 61.354(a) for monitoring the effluent from waste treatment systems. Therefore, in the final rule amendments, § 61.354(b) requires monthly monitoring using grab sampling to determine benzene concentration and the procedures of § 61.355(b) to determine flow rate.

Some comments on the monitoring requirements for wastewater treatment systems complying with § 61.348(b) suggested misunderstanding of the EPA's intent. For example, many commenters focused only on the need to monitor benzene concentration. These commenters are reminded that under § 61.348(b), there are two criteria that must be met before a waste management unit is exempt from control. A unit does not have to be equipped with benzene air emission controls if (1) the benzene content of each stream entering the unit

is less than 10 ppmw benzene on a flow-weighted annual average basis, and (2) the total annual benzene quantity contained in all waste streams managed in exempt units in the wastewater treatment system is less than 1 Mg/yr. To determine if the second criterion is met, the flow rate of streams must be estimated and hence the need to monitor this parameter as well as benzene concentration.

Misunderstanding is also evident in comments made on the number of waste streams that must be monitored, and on the costs associated with monitoring these streams. Wastewater treatment systems typically are comprised of a combination of waste management units (e.g., oil/water separators, DAF units, equalization basins, activated sludge tanks, and clarifiers) configured in series to form a wastewater treatment train. Facilities typically have one treatment train, although larger plants may have two parallel trains. Prior to entering a wastewater treatment system, individual wastewater streams are normally combined to facilitate treatment in a treatment train. The intent of proposed § 61.354(b) is to monitor the benzene concentration and flow of this combined wastewater stream at the point where it enters the first exempt unit in a treatment train. This requirement should require a limited number of monitoring devices. Commenters who claimed that many streams would have to be monitored apparently misinterpreted § 61.354(b) to mean that the flow and benzene concentration of each waste stream that is eventually combined and managed in an exempt unit in a wastewater treatment system must be monitored at its point of generation. This is not a correct interpretation of the rule. Monitoring of the combined stream at the point where it enters an exempt unit is what is intended.

B. Maintenance Turnaround Plan

In the notice of proposal, the EPA asked for comments on several aspects of the proposed requirement for a maintenance turnaround plan in § 61.356(m) (see 57 FR 8023).

Several commenters argued that because maintenance turnaround wastes were already subject to the control requirements of the rule at facilities with a TAB of 10 Mg/yr or greater, the requirement for a plan to minimize air emissions from maintenance turnaround wastes at these facilities was redundant and unnecessary. The recordkeeping burden associated with preparing a plan was criticized as excessive by some commenters who requested a reduction in the level of detail required. One

commenter said that the language of the proposal preamble suggested that a separate plan would be required for each turnaround and asked that it be clarified that a single generic plan was required at a facility.

Many commenters asked that the proposed requirement that the maintenance turnaround plan be in the plant operating record by the effective date of the rule amendments be modified such that the plan was not required until 60 to 90 days before turnaround actually occurs. One commenter supported the need for a maintenance turnaround plan in conjunction with a suggested alternative compliance option.

The maintenance turnaround plan, as proposed, has been interpreted to apply to benzene emissions generated during activities associated with process unit turnarounds. However, subpart FF is intended to apply only to the wastes generated by process unit turnarounds. The EPA considers the turnaround activities, even though they generate the wastes, to be part of process unit operations, rather than waste management operations.

The EPA considered all of the comments on the turnaround plan and has deleted the plan from the requirements. Because wastes generated during a turnaround are subject to the requirements of the rules, there is an incentive for facilities to minimize the amount of wastes generated. Wastes that are generated must be accounted for in the TAB determination. Further, not all wastes generated during turnarounds require control due to the small quantity exemptions and the alternative compliance option. Finally, there appears to be some confusion over the scope of the plan. For these reasons, the EPA has deleted the requirement for the process unit turnaround plan in the final rule amendments.

C. Other Comments on Monitoring, Reporting, and Recordkeeping

Comments were also received on other aspects of the monitoring, reporting, and recordkeeping requirements of the rule. These are discussed below.

Several comments were received on the monitoring, reporting, and recordkeeping requirements associated with wastes that are sent offsite by a generator to a TSDF. One commenter stated that no rationale had been presented by the EPA for requiring the generator to include a notice with wastes shipped offsite that they must be managed and treated to meet subpart FF. Another commenter claimed that the inspection, monitoring,

recordkeeping and reporting requirements will be a heavy burden for handlers of a large number of containers such as drums that are filled once and then sent to a TSDF. This commenter proposed an alternative that would allow initial monitoring of containers for detectable emissions after the containers are filled. Containers certified to have no detectable emissions would be labeled as such. No additional monitoring or inspection of these containers would be required until the containers were reopened.

These comments are outside of the scope of the proposed clarifying amendments. Further, they are not questions for clarification; rather they are requests to change the original rule requirements.

Commenters noted that § 61.357(d)(1) in the proposed amendments requiring a compliance certification "within 90 days after March 5, 1992" was in error. The proposed language of this section should have read "within 90 days after (date of promulgation of clarifying amendments)." A notice was issued by the EPA on May 20, 1992 (57 FR 21368) to correct this error.

One commenter suggested that if there have been no changes to a report previously submitted that summarizes the regulatory status of each waste stream (as described in proposed § 61.357(a)) then only a statement that the previous report is still valid should be required, rather than the submission of a copy of the previous report. The EPA agrees with the commenter on this point and § 61.357 has been amended as suggested.

One commenter stated that there should be no reporting requirements for facilities that do not have any benzene in process or waste materials. The EPA views the reporting requirements in the rule for these facilities as minimal and necessary. Chemical plants, petroleum refineries, coke by-product recovery plants, and TSDF that receive wastes from these industries are subject to subpart FF. Under § 61.357(a), a facility subject to subpart FF that has no benzene onsite in wastes, products, by-products, or intermediates is required to submit only a statement to this effect. The EPA believes that this minimal reporting is necessary to identify all plants potentially subject to the rule and to differentiate those facilities that must install controls from those that do not have to install controls. Therefore, there is no change to this requirement from proposal.

Two comments were received by the EPA on recordkeeping and reporting requirements promulgated in the original rule for subpart FF, although

the EPA did not propose changes to these requirements in the clarifying rule amendments. Commenters requested that the EPA consider the overlap of recordkeeping and reporting requirements under subpart FF with recordkeeping and reporting requirements under the new standards developed under Section 112 of the Clean Air Act as amended in 1990, including, in particular, the proposed NESHAP for Source Categories: Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry and Seven Other Processes NESHAP. One commenter recommended specifically that the EPA require reporting for subpart FF on a semiannual basis to be consistent with the new operating permit program requirements (57 FR 32250).

In the clarifying amendments, the EPA did not propose any change to the recordkeeping and reporting requirements of the original rule. These requirements were proposed on September 14, 1989, and opportunity for public comment occurred at that time. The EPA responded to comments on the proposed recordkeeping and reporting requirements in the notice of final rulemaking issued on March 7, 1990 (see 55 FR 8318). Therefore, these comments on the original recordkeeping and reporting requirements are outside the scope of this rulemaking. However, one of the commenters requested corrections of some errors in the cross-referencing in the rule requirements and also suggested minor changes. The EPA made the suggested corrections and minor changes to the recordkeeping and reporting requirements and they do not change the burden associated with the recordkeeping and reporting.

One commenter claimed that hundreds of hours per year per response would be required to collect information necessary to comply with the reporting and recordkeeping requirements of subpart FF as opposed to the EPA's estimate of 11.9 hours per response. This commenter claimed that additional review is called for under the Paperwork Reduction Act.

The estimate of 11.9 hours per response presented in the preamble to the proposed clarifying amendments is for the information collection requirements in the proposed amendments, and not for the information collection requirements of the entire rule. The information collection requirements of the original rule were approved by the Office of Management and Budget at the time the original rule was promulgated. Based on changes to the clarifying amendments

since proposal, the public reporting burden for the rule amendments has been reestimated and is presented in the next section of this preamble.

VIII. Policy for Granting Waivers of Compliance

Owners and operators of existing sources subject to a NESHAP promulgated under the Clean Air Act prior to the 1990 Clean Air Act Amendments must be in compliance with the rule within 90 days of the rule's effective date, unless a waiver of compliance is granted by the Administrator. The period for a waiver may not exceed 2 years beyond the effective date of the rule. For a NESHAP, the effective date is the date of promulgation in the Federal Register.

To resolve confusion about subpart FF, the EPA chose to stay the effectiveness of the rule while clarifying amendments were developed. The effective date for the amended rule is today's date, and existing sources must be in compliance within 90 days of today's date unless a waiver of compliance is granted by the Administrator.

The owner or operator of an existing source unable to come into complete compliance with the NESHAP for existing waste operations within 90 days of the effective date of this rule may apply for a waiver of compliance in accordance with the procedures described in 40 CFR §§ 61.10 and 61.11. One requirement of those provisions is to demonstrate that the additional time is necessary for the installation of controls. In addition, as the EPA stated in the March 5, 1992 proposal, the EPA believes that it is essential that the risk to human health from benzene emissions be mitigated. The EPA believes that the best way to mitigate the benzene emission reductions that will be lost due to delayed compliance during the waiver period is to reduce benzene emissions elsewhere at the facility. However, in some instances it may not be technically or economically feasible to achieve such benzene emission reductions. Accordingly, in the preamble to the proposed rule, the EPA indicated that it would consider various other types of environmentally beneficial activities that could be credited (on a discounted basis) towards the mitigation goal. In the preamble to the proposed rule amendments, the EPA set forth a hierarchy of activities (see 57 FR at 8026).

One commenter objected to the broad degree of available mitigation options. The commenter expressed concern over the ability of the EPA to determine whether the mitigation made up for the

lost benzene emission reductions where the mitigation included emission reduction of nonhazardous air pollutants, nonair emission reductions and nonquantifiable pollution reduction projects. The commenter requested that only benzene emissions be credited for mitigation or at least that mitigation be limited to reductions of other hazardous air pollutants with a weighting factor included.

The EPA understands the concern about the uncertainty in equating one type of emissions reduction with a reduction of another pollutant or in another media, and, as a result, the final mitigation policy is somewhat narrower than outlined in the proposed rule.

It remains the EPA's policy that a source should seek to reduce other benzene emissions first, where such reductions are technically and economically feasible. However, because of (1) the unique nature of this rule; (2) the efforts made thus far by sources seeking to comply with the benzene waste NESHAP; (3) the relatively short period of time that remains for submitting waiver applications; (4) the conditions for granting a waiver are more restrictive than announced in the proposal notice; and (5) the departure set forth herein is consistent with efforts to resolve litigation brought by both environmental and industry parties, the EPA is providing opportunities to achieve the mitigation goal through projects involving the reductions of pollutants other than benzene when projects to reduce benzene emissions are not technically and economically feasible.

Thus, the EPA has determined that a source seeking a waiver must determine and achieve its mitigation objective as follows. First, the source must determine the additional amount of benzene emissions that will be emitted to the air from emission points subject to subpart FF as compared with the emissions expected if the source complied with that standard without a waiver. Second, the source must multiply that amount by 1.5. This quantity, expressed in kilograms, becomes the source's mitigation goal. Then a source must identify how it will achieve that goal.

The EPA will continue to give the highest priority to obtaining reductions of other benzene air emissions to meet this mitigation goal. Thus, a source must include in its waiver application all emission reduction projects for benzene, where it is technically and economically feasible to achieve such benzene reductions. If a source undertakes a benzene project (having determined it to

be technically and economically feasible based on the benzene reductions to be achieved) that also achieves coincidental reductions of other hazardous air pollutants (HAP's) or volatile organic compounds (VOC's), the source may include as a mitigation credit those coincidental reductions on a discounted basis as described below.

If a source demonstrates that there are no other technically and economically feasible projects to reduce benzene emissions and that as a result of those projects it still cannot achieve its mitigation goal, the EPA will accept additional projects supplying reductions of other HAP's listed under section 112 of the Clean Air Act as amended in 1990 at a ratio of 1.1 kilograms of other such pollutants per kilogram of the source's unmet mitigation goal.

If a source demonstrates that emission reduction projects supplying sufficient reductions of other HAP's are not available, the EPA will accept additional projects resulting in reductions of VOC's, at a ratio of 2.2 kilograms of such pollutant per kilogram of the source's unmet goal.

Mitigation may not be credited if the reduction is to meet any other regulatory requirement. However, if a source achieves early compliance with some future regulatory requirement, it can be credited with the reductions which occur up to the time the requirement goes into effect.

Finally, the EPA will consider waiver applications for up to three projects involving reductions of sulfur oxides (SO_x), if the sources seeking these reductions demonstrate that adequate reductions of benzene, other HAP's, and VOC's are not available at their facilities. These sources must provide at least 2.2 kilograms of SO_x for each kilogram of credit towards the mitigation goal. The EPA believes it is appropriate to consider these projects in this case only because the planning for these projects may already be far advanced, and it may not be feasible for such sources to develop other mitigation projects in time to apply for a waiver.

The EPA is adopting the mitigation principles set forth above for this rule because of the reasons outlined above. The interpollutant provisions of this action do not establish any precedent for future actions.

For subpart FF, the EPA believes the waiver policy described in the March 5, 1992 notice of proposed rulemaking is a legitimate exercise of the Administrator's discretionary authority to grant waivers of compliance under section 112 of the CAA. This policy was discussed in the preamble to provide information to potential waiver

applicants and not to indicate that the policy was part of the proposed rule amendments proposed for comment. The only requirement related to waiver applications in the proposed rule amendments was that waiver applicants include, with their applications under § 61.10, a plan that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from delayed compliance. This requirement is retained in the final rule. The criteria for judging whether an application for a waiver of compliance for subpart FF is acceptable have been established by the Administrator under his discretionary authority for granting waivers. These criteria are fully explained in the waiver guidance document prepared since proposal of the rule, as discussed in the following section.

A. Waiver Application and Review Process

A number of other comments addressed issues related to the waiver. Several commenters urged the EPA to make the waiver application and review process simple and expeditious. Some suggested that the rule require the EPA to make determinations within 30 or 45 days of receipt of an application. One commenter stated that the EPA had failed to substantively describe the waiver process. Another commenter urged the EPA to solicit industry comment during development of waiver guidance and to release the guidance as soon as possible.

The general waiver application and review process for NESHAP was previously established in §§ 61.10 and 61.11 of the General Provisions to part 61. Due to the special circumstances of subpart FF, and to expedite the application and review process for waivers under subpart FF, the EPA prepared a draft guidance document, "Benzene Waste Operations—NESHAP Waiver Guidance Document." This guidance document describes the waiver application and review process, articulates the policy to be followed by the EPA in reviewing waiver applications for subpart FF, and describes in detail the information that should be included in a waiver application for this rule, with examples provided. The draft guidance document was circulated to trade associations representing companies affected by subpart FF (including the commenter who stated that the EPA had failed to substantively describe the waiver process), and an environmental group for comment on the document's clarity and readability. The document will soon be published and made available

to the public. The basic principles to be included in the document were outlined above. The EPA believes that this guidance document, plus the general procedures already established in §§ 61.10 and 61.11, will expedite the process for waiver approval to the extent possible for this rule. The EPA or the delegated authority will make every effort to review promptly all waiver applications. However, the EPA will not limit in advance the amount of time available for review as suggested by commenters because the EPA cannot anticipate with certainty such variables as the complexity of each application received (related to site-specific factors) and the number of applications that may be received by an individual EPA regional office or delegated authority.

One commenter asked the EPA to consider a less onerous, less detailed demonstration for granting a waiver of several additional months in cases where the control equipment is operating, but the monitoring, recordkeeping, and other procedural requirements are not yet in place.

The EPA believes that a situation in which a facility is able to be in compliance with all of the control requirements but is not able to comply with the monitoring and recordkeeping requirements is unlikely. However, if this situation were to arise, there is no reason to make the waiver application different. The basic information required relates to how and when the facility will be in compliance. The mitigation plan is based on the estimated benzene emissions that will be lost due to delayed compliance. In the situation described by the commenter, few, if any, benzene emissions may be required to be mitigated.

B. Mitigation Requirements

Several comments were received related to the proposed requirement that facilities submit, with a waiver application, a plan that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from extending the compliance date. One commenter argued that the waiver policy should not require offsetting mitigation actions because this requirement would penalize facilities that are taking additional time to implement comprehensive multimedia compliance programs. Finally, a commenter specifically supported allowing reductions of other pollutants and non-air media actions to count towards a facility's mitigation goal and pointed to other rules that require control of sources of benzene (other than benzene

waste sources) at coke by-product recovery plants, thus limiting the opportunity to reduce benzene air emissions from other sources at these facilities.

The granting of waivers of compliance by the EPA Administrator is discretionary. That is, the Administrator may grant a waiver of compliance, but is not obligated to do so. Nothing in the language of the statute limits the EPA's ability to make the granting of waivers for a particular rule conditional on terms that the Administrator, in his sole judgement, determines to be necessary for that rule.

One commenter, also a litigant on subpart FF, contends that they should not be required to provide for mitigating environmental benefits because their settlement agreement makes no mention of such a requirements. The commenter also contends that the waiver policy is inconsistent with the settlement statement that compliance waivers will be on a refinery-by-refinery basis.

The EPA disagrees with the commenter's contentions. The settlement agreement to which the commenter refers in no way precludes a requirement that the commenter (or any other source) obtain mitigating environmental benefits if it seeks a waiver of compliance following promulgation of the amendments to clarify 40 CFR part 61, subpart FF. Nor does it preclude any other condition of the waiver. The criteria and requirements for seeking a waiver will apply to all applicants. The settlement agreement merely provides that when considering whether to grant a waiver, it will not penalize the commenter for its good faith belief that its refinery was not subject to the standard when it was promulgated in 1990. Requiring it to obtain mitigation for the benzene emissions that will be lost during the pendency of the waiver period is not a penalty for the source not achieving compliance by March 1992; rather, it is a condition for a waiver beyond the new effective date of the revised subpart FF standard.

The settlement agreement addresses the question of whether the EPA would find that an applicant is making every effort to comply with the standard but that it is unable to comply by the compliance date where it did not make any effort from March 1990 to December 1991 because it did not think it was covered by the rule. The settlement agreement made clear that the EPA would not penalize the commenter because prior to the signing of the settlement it believed that it was not subject to the standard. It did not purport to provide the commenter

special treatment vis-a-vis all other sources with respect to the requirement to undertake mitigation to make up for the benzene emissions lost if a waiver is granted.

Finally, the waiver policy is not inconsistent with the statement that the waiver applications will be considered on a refinery-by-refinery basis. In 1990, when the EPA promulgated subpart FF, it granted a 2-year compliance waiver to all sources affected by the rule. It did not require each source individually to make the demonstration of need for a waiver as required by 40 CFR 61.10. In contrast, the EPA wanted to make clear that this time it would not issue a generic waiver. Rather, each source seeking a waiver must file its own request for a waiver; each application will be considered on its own merits. The language cited by the commenter can in no way be read to suggest that there would be different criteria for waivers for different sources or that some sources would not be required to provide mitigating environmental benefits.

One commenter contends that the EPA lacks the statutory and regulatory authority to require waiver applicants to provide mitigating environmental benefits in the absence of a finding that such conditions are necessary to protect the health of persons from imminent endangerment.

Section 112(c)(1)(B) of the Clean Air Act (CAA), prior to passage of the Clean Air Act Amendments of 1990, provides that the Administrator may grant a waiver if he finds additional time is necessary for installation of controls and that "steps will be taken to assure that the health of persons will be protected from imminent endangerment." The regulations implementing this statutory waiver provision further provide that the Administrator may "[s]pecify any additional conditions which the Administrator determines necessary . . . to assure protection of the health of persons during the waiver period" (40 CFR 61.11(a) (4)).

This regulatory provision is very broad and affords the Administrator wide discretion in granting waivers. Waivers themselves are available at the discretion of the Administrator; no source is entitled to a waiver. The EPA believes this broad regulatory authority affords the Administrator the discretion to condition a waiver on an assurance that the source will undertake activities to benefit the environment and to protect human health. The mitigation policy that seeks, in the first instance, to obtain other benzene air reductions, is an effort to effectuate the waiver provisions in 40 CFR 61.11.

The opportunity to mitigate, and thereby protect human health and the environment, by reducing pollutants other than benzene air emissions, was an effort to provide a source an opportunity to satisfy the conditions of 40 CFR 61.11 where it was not feasible to otherwise reduce benzene emissions at a particular facility.

C. Special Requirements for Waiver Applicants Awaiting Development of a Compliance Option Based on Site-Specific Risk Assessment

As previously noted, the EPA is planning to propose an additional compliance option for subpart FF based on site-specific risk assessment. Owners or operators who plan to use this option, if it becomes available, are eligible to apply for waivers of compliance. The EPA plans to take final action on the additional compliance option by August 1993.

Mitigation goals and credits under the waiver policy must be calculated based on a plan to comply with subpart FF, as amended by today's final rulemaking, and not based on using the alternative compliance option. If an additional compliance option is promulgated, facilities may modify the enforceable commitment to reduce the mitigation goal, based from that date forward on lost benzene emission reductions under the new compliance option. However, the goal for mitigation of lost benzene emission reductions, based on the amended rule promulgated today, that occurred prior to the effective date of the new compliance option, shall not change.

Waiver applications by applicants awaiting the development of an additional compliance option should reflect a two-phase compliance path. The first phase would outline how compliance will be achieved with a site-specific risk assessment-based compliance option. In the first phase of the waiver application, the applicant shall demonstrate how, and on what schedule, compliance under this option would be expeditiously achieved. This phase of the compliance path would not have to show installation of control equipment necessary for compliance with §§ 61.343 through 61.349 of subpart FF, if that control equipment would not be required under a compliance option based on site-specific risk assessment.

The second phase of the compliance plan shall document, how the applicant will comply with §§ 61.343 through 61.349 of subpart FF, as amended by today's final rulemaking. This compliance path would then be implemented by the applicant if a

compliance option based on site-specific risk assessment is not promulgated (presently final action is scheduled for August 1993, as discussed above).

Finally, applicants awaiting development of an additional compliance option for subpart FF should recognize that they will not receive additional time beyond the waiver period for compliance, and that waiver period shall not extend more than 2 years beyond the effective date of today's amended rule.

IX. General

A variety of comments in addition to those discussed in previous sections were received in response to the proposal of clarifying amendments to subpart FF. These additional comments, and the EPA's responses are discussed below.

A. Risk Assessment Supporting the Original Rule

Many comments were received criticizing the EPA's risk assessment that was performed to support development of the original rule promulgated on March 7, 1990. This risk assessment had been performed to demonstrate both that the original rule was necessary and that the NESHAP risk protection goals would be met under the final rule. Several commenters claimed that the original analysis was flawed because the model used grossly overstates emissions and risk. Some commenters stated that benzene emission estimates for specific sources were overestimated in the analysis. These commenters stated that the risk assessment should be redone using more recent exposure models developed by the EPA and incorporating more site-specific information. A few commenters had performed their own risk assessments for several facilities and claimed that the results showed controls were not needed to the level required by the rule.

These commenters incorrectly assumed that with the proposal of clarifying amendments to subpart FF, the EPA was reopening the entire rule, and the original analyses supporting it, to further public comment and possible change. To the contrary, the amendments proposed were narrow in scope, designed to clarify only those specific points on which there had been confusion following promulgation of the original rule. They also were designed to provide additional flexibility to owners and operators who must comply with the control requirements of the rule.

The appropriate time for comments concerning the technical basis of the original rule was following proposal of the rule on September 14, 1989 (54 FR 38083). The need for the controls required by the rule was discussed in the preamble to the proposed rule and the technical analyses supporting the proposed rule were placed in the docket prior to proposal and were available for public review. Comments received on the need for the rule and the analyses supporting the rule were carefully considered, and changes in the analyses and the rule were made as appropriate before promulgation of the final rule on March 7, 1990.

In the notice of final rulemaking, the EPA presented thorough and extensive responses to comments on the risk assessment methodology used to evaluate sources of benzene wastes and other sources of benzene emissions (see 55 FR 8301 to 8307). The proposal of clarifying amendments does not reopen those parts of the rule unaffected by the amendments (and the technical analyses supporting them) for public comment.

B. Costs of Controls

Several comments were received claiming that the EPA had understated the costs of the benzene waste NESHAP. Commenters stated that the capital cost of complying with the rule is several billion dollars based on industry surveys. Because of this, commenters say the benzene waste NESHAP is a major rule and that a Regulatory Impact Analysis (RIA) must be performed. One commenter stated that this rule is a prime candidate for review under the President's regulatory review initiative.

As discussed earlier, the proposal of clarifying amendments to subpart FF did not reopen the entire rule for public comment. While it is possible that the EPA may have underestimated the cost of complying with subpart FF as originally promulgated, it is also possible that facilities may be overstating the cost of compliance. Many facilities subject to subpart FF are implementing multi-media compliance strategies designed to meet the requirements of many regulations to control pollution, including subpart FF. The EPA believes that these facilities, in some cases, may be overstating the portion of total compliance costs that are attributable to subpart FF.

Under Executive Order 12291, an RIA is required if the economic impacts of a rulemaking would exceed \$100 million. The rule amendments clarify, but do not change, the basic requirements of the rule. Therefore, there is no additional compliance cost associated with the rule amendments.

The clarifying amendments promulgated today include additional options for compliance. The additional options provided would reduce the cost of complying with subpart FF at some facilities. Hence, any impact of the rule amendments on the costs of complying with subpart FF would be to reduce compliance costs.

The EPA therefore believes that the costs associated with the rule amendments do not exceed the \$100 million threshold, the amendments will not significantly increase process or production costs, and the amendments will not cause significant adverse effects on domestic competition, employment, investment, productivity, innovation, or competition in foreign markets. Consequently, the rule amendments do not constitute a major rule and an RIA is not required.

Further, the EPA also views the rule amendments as consistent with the President's regulatory review initiative. A primary objective of the regulatory review initiative is to improve the clarity of regulations. The amendments to subpart FF are designed to clarify provisions of the original rule and, therefore, are consistent with this objective. The amendments are also consistent with the regulatory review initiative in that they provide additional options for compliance that (1) may be more cost-effective for some facilities; (2) encourage recycling, reclamation, and pollution prevention, and (3) encourage comprehensive multi-media compliance programs.

C. Legal Aspects

One commenter, a trade association, contends that it and its members' companies will have the right to obtain full judicial review of the total NESHAP when the final rule is issued.

The commenter is incorrect in this assertion. The assertion is without foundation in the law. The Clean Air Act limits the right to petition for judicial review of a rule to a 60-day period following publication of the final rule in the *Federal Register*.

Any petition for review under this subsection must be filed within 60 days from the date notice of such promulgation, approval, or action appears in the *Federal Register*, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within 60 days after such ground arise.

CAA, § 307(b)(1), 42 U.S.C. 7607(b)(1).

The notice of proposed rulemaking issued on March 5, 1992 states throughout that it only proposes clarifying amendments and minor revisions to limited provisions of

subpart FF. The entire basis of the rule as not reopened. If commenters objected to the aspects of the rule when it was promulgated, then they had the opportunity to file a petition for review at that time. By making minor amendments to a few provisions of 40 CFR part 61, subpart FF, the EPA does not override the directives of section 307(b) and reopen the entire rule. Moreover, the one petitioner that did challenge the final rule negotiated a settlement agreement whereby the EPA committed to propose the clarifying changes set forth in the March notice. By issuing a final rule today that is consistent with those changes, the EPA has satisfied its obligations with respect to the settlement agreement. As a result, the petitioner, by terms of the settlement agreement, has committed to dismiss its original petition for review.

One commenter stated that the EPA may not apply these amendments to sources that already expended efforts to comply with the rule if the company used a good faith interpretation of the rules in developing its compliance plan. This commenter asked the EPA to provide a "grandfather" exemption from the amended rule for facilities that spent money in good faith and complied with the original rule by March 7, 1990. The commenter contends that under the holding of *United States v. Narragansett Improvement Company*, 571 F. Supp. 688 (D.R.I. 1983) it would be unlawful to apply the proposed amendments (once made final) to its facility.

The EPA commends the commenter for its efforts to achieve timely compliance with requirements of subpart FF when it was promulgated in 1990. Moreover, the EPA recognizes that there was substantial confusion about certain provisions of the rule following its promulgation. Indeed, as the EPA noted at the time it proposed clarifying amendments, the amendments were to help reduce the confusion. The intent and scope of the rule, however, remain essentially the same. The amendments promulgated today become part of the subpart FF requirements. Unless a source receives a waiver of compliance pursuant to 40 CFR 61.10 and 61.11, it must comply with the provisions of subpart FF, as amended, within 90 days of the effective date.

The application of these rules to an affected facility is not precluded by the decision on *United States v. Narragansett*, *supra*. In *Narragansett*, the court held that a regulation defining when certain reconstruction activity was subject to a new source performance standard could not apply to activity undertaken before the EPA had issued the regulation. In this

situation, the EPA would not be seeking to retroactively apply the amended rule to the source. The source need only comply with the amended standard on the new compliance date. In *Narragansett*, the determination of whether a source was new was based on a one-time determination, which is made at the time the construction activity occurs. All the court said in *Narragansett* was that the regulations on the book at the time the facility undertook its construction activity was determinative of whether the source was new. Thus, subsequently promulgated regulations could not alter the determination of whether a particular activity triggered new source applicability. Here the EPA is not saying that the source should be in compliance with the revised standards as of the original compliance date of March 1992. Rather, the source must be in compliance with the amended rule as of the new compliance date.

Further, as stated in the March 5, 1992 notice of proposed rulemaking, the amendments do not change the basic requirements of subpart FF. Rather, they clarify the EPA's original intent on those provisions of the original rule where confusion was evident. By staying the rule while clarifying amendments were proposed and promulgated, the EPA provided additional time for facilities who did misinterpret the original rule to come into compliance. Facilities that correctly understood and complied with the requirements of the original rule previously should be in compliance with the amended rule.

D. Compliance Aspects

One commenter suggested that the EPA amend the proposal to extend the compliance date for the amended rule to March 1994 or to 1 year after the final amended rule is promulgated, whichever is later. This commenter said that this would prevent facilities from installing needless controls while uncertainty on the final rule still exists. Another commenter asked the EPA to announce that it will allow sufficient time for compliance after the final amended rule is issued to allow the use of possible alternative approaches.

The compliance time available to existing facilities following promulgation of a NESHAP under the Clean Air Act prior to the 1990 Clean Air Act Amendments is established by law as 90 days from the effective date of a rule, unless a waiver of compliance is obtained (see section 112(c)(1)(B) of the Clean Air Act as amended in 1977). The effective date of a NESHAP is the date of promulgation.

Subpart FF was originally promulgated on March 7, 1990. The original rule provided a blanket waiver of compliance to facilities such that controls were to be installed no later than March 7, 1992. Prior to March 7, 1992, subpart FF was stayed pending final action by the EPA on clarifying amendments to the rule. In a settlement agreement with litigants on subpart FF, the EPA committed to taking final action on clarifying amendments to the rule by December 1, 1992.

Given that the effectiveness of subpart FF was stayed until final action was taken on the clarifying amendments proposed March 5, 1992, the EPA does not believe that there is the need to take the unusual step of issuing a blanket waiver of compliance for subpart FF as amended. Therefore, the compliance date for the amended rule is 90 days from today's date unless a waiver of compliance is obtained. Applications for waivers of compliance will be considered on a case-by-case basis by the Administrator according to §§ 61.10 and 61.11 of the General Provisions to 41 CFR part 61.

Finally, a commenter stated that if the TAB of a facility goes below the control threshold of 10 Mg/yr in the future, the facility should only be required to continue to comply with the rule provisions for facilities with comparable TAB's (i.e., below 10 Mg/yr).

The EPA agrees with this comment. If, at some point in the future, a facility's TAB (as determined according to the rule) is reduced to below 10 Mg/yr, then the facility would no longer be subject to the control requirements of the rule, but must continue to comply with the reporting and recordkeeping requirements. This was allowed in the original rule and is still allowed under the amended rule. The commenter is reminded, however, that while means such as benzene waste minimization are acceptable to reduce facility TAB, waste treatment is not acceptable to reduce TAB.

E. Points for Sampling and Analysis

One commenter claimed that the proposed rule language could cause confusion on where the benzene concentration of treated waste streams should be determined. This commenter asked that it be stated in the rule that if the treatment standards of § 61.348(a) are met, then the determination is made at the exit of the treatment process.

The EPA agrees with the commenter on this point. It is the EPA's intent that, for the purpose of demonstrating compliance with the standards for treatment processes in § 61.348(a), benzene concentration should be

determined at the exit of the treatment process. This regulatory language can be found in § 61.355(d).

Another commenter recommended that the rule provide flexibility on sampling locations for waste streams at a plant already determined to have a TAB above 10 Mg/yr. The commenter cited cases where, due to safety concerns, it was preferable to sample at a common collection point to which wastes had been hard piped, rather than at the point of generation.

Although it is not clear from the comment what the purpose for the sampling described is (e.g., to compute TAB or demonstrate that a stream contains less than 10 ppmw benzene and, therefore does not have to be controlled), the EPA believes that the rule provides the flexibility that the commenter is recommending. To calculate TAB for a facility requires that the annual mass of benzene in each waste stream at its point of generation be estimated. The mass of benzene in each stream is estimated through a determination of benzene concentration and waste quantity. The determination of benzene concentration and waste quantity through direct measurement at the point of generation is not required by the rule for the purpose of estimating facility TAB, but is an acceptable option.

To determine waste quantity, historical records or the maximum design capacity of the waste management unit handling the waste may also be used (see §§ 61.355(b) (5) through (7)). To determine benzene concentration (for TAB or for other purposes), use of knowledge of the waste is acceptable (see § 61.355(c)(2)). Direct measurement of benzene concentration at a location other than the point of generation may be used to support a determination based on knowledge of the waste.

Facilities acknowledging that they are above the 10 Mg/yr threshold for the applicability of control requirements will not be expected to document their estimate of TAB as rigorously as those who are claiming they are below 10 Mg/yr and therefore do not need to apply controls. However, facilities claiming that either the entire facility or individual waste streams within the facility are exempt based on the results of sampling of waste streams at locations other than their point of generation will be expected to document that benzene concentration has not been reduced through dilution or volatilization.

In case of disputes, the Administrator may require direct measurement of waste characteristics at the point of

generation. However, in cases where facility-applicability is not an issue (i.e., at facilities over 10 Mg/yr on the basis of other streams), evidence such as that suggested by the commenter would likely be acceptable to support a TAB calculation.

Finally, a commenter requested that the rule specify that a Method-27 leak test is an acceptable alternative to Method 21 for trucks and rail cars.

Under § 61.345, the cover and all openings of containers in which benzene-containing wastes subject to the control requirements of the rule are managed must be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h) of the rule. Section 61.355(h) specifies EPA Reference Method 21. Section 61.355(h) was not affected by the proposed amendments and, therefore, it was not appropriate for the EPA to change this section in the final rule without proposal and comment. However, an owner or operator may request that the Administrator approve the use of an alternative method under § 61.13 of the General Provisions to 40 CFR part 61.

F. Requests for Site-Specific Clarifications

Two comments were received requesting determinations on how the rule would apply to their specific facilities. One commenter requested clarification of the definition of "petroleum refinery" as it applied to the commenter's facility. Another commenter requested a determination on how the rule would apply to part of a coke by-product recovery plant that is under separate ownership from the coke oven and the rest of the by-product recovery plant, where materials (including wastes) are hard piped between them.

The EPA considers these requests for site-specific determinations on the applicability of subpart FF to be outside of the scope of this rulemaking. Determinations on the applicability of the final rule to specific facilities will be made by the EPA Regional offices or delegated State or local agencies. Requests for site-specific clarifications should, therefore, be directed to the appropriate EPA Regional Office or delegated State or local agency.

X. Administrative Requirements

A. Paperwork Reduction Act

The Office of Management and Budget (OMB) has approved the information

collection requirements contained in subpart FF under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060-0183. The OMB approved the requirement in the proposed clarifying amendments for a compliance waiver, but did not approve the proposed requirement for a maintenance turnaround plan. The promulgated rules do not include the requirement for a maintenance turnaround plan for the reasons stated in section VII B. of this preamble.

The public reporting burden for the compliance waiver is estimated to be a one time burden of 15 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch (PM-223Y); U.S. Environmental Protection Agency; 401 M St., SW.; Washington DC 20460; and the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

B. Regulatory Flexibility Analysis

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires the EPA to consider potential impacts of regulations on small business "entities." If a preliminary analysis indicates that a regulation would have a significant economic impact on 20 percent or more of small entities, then a Regulatory Flexibility Analysis must be prepared.

The amendments to 40 CFR part 61, subpart FF, are intended to clarify the rule and will not affect the number of facilities subject to the rule or the controls that must be installed to comply. I therefore certify that this rule will not have significant economic impact on a substantial number of small entities.

C. Docket

The docket is an organized and complete file of all the information submitted to or otherwise considered by the EPA in the development of this rulemaking. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated revisions, and the EPA's responses to significant

comments, the contents of the docket, except for interagency review materials, will serve as the record in case of judicial review [Section 307(d)(7)(A)].

D. Executive Order 12291

Under Executive Order 12291, the EPA is required to judge whether this regulation is a "major rule" and therefore subject to certain requirements of the Order. The EPA has determined that the clarifying amendments to subpart FF would result in none of the adverse economic effects set forth in section I of the Order as grounds for finding a regulation to be a "major rule." The EPA does not believe these amendments to the regulation are major because the economic effects of the amendments do not meet the \$100-million threshold, the amendments will not significantly increase process or production costs, and the amendments will not cause significant adverse effects on domestic competition, employment, investment, productivity, innovation, or competition in foreign markets.

The EPA has not conducted a RIA of this regulation because this action does not constitute a major rule.

List of Subjects in 40 CFR Part 61

Air pollution control, Arsenic, Asbestos, Benzene, Beryllium, Coke oven emissions, Hazardous substances, Intergovernmental relations, Mercury, Radionuclides, Reporting and recordkeeping requirements, Vinyl chloride, Volatile hazardous air pollutants.

Dated: December 1, 1992.

William K. Reilly,
Administrator.

For the reasons set out in the preamble, title 40, chapter 1, part 61 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 61 continues to read as follows:

Authority: Sections 101, 112, 114, 116, 301 of the Clean Air Act as amended (42 U.S.C. 7401, 7412, 7414, 7416, 7601).

§ 61.340 [Removed]

2. In § 61.340, paragraph (c)(3) is removed.

3. Section 61.341 is amended by revising the definitions for "point of waste generation" and "water seal controls," and by adding definitions in alphabetical order to read as follows:

§ 61.341 Definitions.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position

of the valve cannot be changed without breaking the seal.

Flow indicator means a device which indicates whether gas flow is present in a line or vent system.

Maximum organic vapor pressure means the equilibrium partial pressure exerted by the waste at the temperature equal to the highest calendar-month average of the waste storage temperature for waste stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for waste stored at the ambient temperature, as determined:

- (1) In accordance with § 60.17(c); or
- (2) As obtained from standard reference texts; or
- (3) In accordance with § 60.17(a)(37); or
- (4) Any other method approved by the Administrator.

Point of waste generation means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component.

Process unit turnaround means the shutting down of the operations of a process unit, the purging of the contents of the process unit, the maintenance or repair work, followed by restarting of the process.

Process unit turnaround waste means a waste that is generated as a result of a process unit turnaround.

Sour water stream means a stream that:

- (1) Contains ammonia or sulfur compounds (usually hydrogen sulfide) at concentrations of 10 ppm by weight or more;
- (2) is generated from separation of water from a feed stock, intermediate, or product that contained ammonia or sulfur compounds; and
- (3) requires treatment to remove the ammonia or sulfur compounds.

Sour water stripper means a unit that:

- (1) Is designed and operated to remove ammonia or sulfur compounds (usually hydrogen sulfide) from sour water streams;
- (2) has the sour water streams transferred to the stripper through hard piping or other enclosed system; and
- (3) is operated in such a manner that the offgases are sent to a sulfur recovery

unit, processing unit, incinerator, flare, or other combustion device.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

4. Section 61.342 is amended by revising paragraphs (a), (b), (c)(1) introductory text, (c)(1)(iii), (c)(2), (c)(3), and (d) introductory text; by redesignating paragraphs (e), (f), and (g) as (f), (g), and (h); and by adding paragraph (e) to read as follows:

§ 61.342 Standards: General.

(a) An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) shall be exempt from the requirements of paragraphs (b) and (c) of this section. The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream. Other specific requirements for calculating the total annual benzene waste quantity are as follows:

(1) Wastes that are exempted from control under §§ 61.342(c)(2) and 61.342(c)(3) are included in the calculation of the total annual benzene quantity if they have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(2) The benzene in a material subject to this subpart that is sold is included in the calculation of the total annual benzene quantity if the material has an annual average water content greater than 10 percent.

(3) Benzene in wastes generated by remediation activities conducted at the facility, such as the excavation of contaminated soil, pumping and treatment of groundwater, and the recovery of product from soil or groundwater, are not included in the calculation of total annual benzene

quantity for that facility. If the facility's total annual benzene quantity is 10 Mg/yr or more, wastes generated by remediation activities are subject to the requirements of paragraphs (c) through (h) of this section. If the facility is managing remediation waste generated offsite, the benzene in this waste shall be included in the calculation of total annual benzene quantity in facility waste, if the waste streams have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(4) The total annual benzene quantity is determined based upon the quantity of benzene in the waste before any waste treatment occurs to remove the benzene except as specified in § 61.355(c)(1)(i) (A) through (C).

(b) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section shall be in compliance with the requirements of paragraphs (c) through (h) of this section no later than 90 days following the effective date, unless a waiver of compliance has been obtained under § 61.11, or by the initial startup for a new source with an initial startup after the effective date.

(1) The owner or operator of an existing source unable to comply with the rule within the required time may request a waiver of compliance under § 61.10.

(2) As part of the waiver application, the owner or operator shall submit to the Administrator a plan under § 61.10(b)(3) that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from extending the compliance date. The plan shall include the following information:

(i) A description of the method of compliance, including the control approach, schedule for installing controls, and quantity of the benzene emissions that result from extending the compliance date;

(ii) If the control approach involves a compliance strategy designed to obtain integrated compliance with multiple regulatory requirements, a description of the other regulations involved and their effective dates; and

(iii) A description of the actions to be taken at the facility to obtain mitigating environmental benefits, including how the benefits will be obtained, the schedule for these actions, and an estimate of the quantifiable benefits that directly result from these actions.

(c) * * *

(1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall:

* * *

(iii) Each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §§ 61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section.

(2) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in § 61.355(c)(2) or § 61.355(c)(3).

(3) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the conditions specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section are met.

(i) The waste stream is process wastewater that has a flow rate less than 0.02 liters per minute or an annual wastewater quantity of less than 10 Mg/yr; or

(ii) All of the following conditions are met:

(A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section.

(B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this section does not exceed 2.0 Mg/yr as determined in the procedures in § 61.355(j), and

(C) The total annual benzene quantity, in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.

(d) As an alternative to the requirements specified in paragraphs (c) and (e) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

* * *

(e) As an alternative to the requirements specified in paragraphs (c) and (d) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

(1) The owner or operator shall manage and treat facility waste with a flow-weighted annual average water content of less than 10 percent in accordance with the requirements of paragraph (c)(1) of this section; and

(2) The owner or operator shall manage and treat facility waste (including remediation and process unit turnaround waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent, in accordance with the following:

(i) The benzene quantity for the wastes described in paragraph (e)(2) of this section must be equal to or less than 6.0 Mg/yr, as determined in § 61.355(k). Wastes as described in paragraph (e)(2) of this section that are transferred offsite shall be included in the determination of benzene quantity as provided in § 61.355(k). The provisions of paragraph (f) of this section shall not apply to any owner or operator who elects to comply with the provisions of paragraph (e) of this section.

(ii) The determination of benzene quantity for each waste stream defined in paragraph (e)(2) of this section shall be made in accordance with § 61.355(k).

5. Section 61.343 is amended by revising the first sentence of paragraph (a) introductory text; by redesignating paragraphs (b) and (c) as (c) and (d); by adding paragraphs (a)(1)(i)(C) and (b); and by revising newly redesignated paragraph (c) to read as follows:

§ 61.343 Standards: Tanks.

(a) Except as provided in paragraph (b) of this section and in § 61.351, the owner or operator shall meet the following standards for each tank in which the waste stream is placed in accordance with § 61.342 (c)(1)(ii). * * *

(1) * * *

(i) * * *

(C) If the cover and closed-vent system operate such that the tank is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the tank remains below atmospheric pressure.

(b) For a tank that meets all the conditions specified in paragraph (b)(1) of this section, the owner or operator may elect to comply with paragraph (b)(2) of this section as an alternative to the requirements specified in paragraph (a)(1) of this section.

(1) The waste managed in the tank complying with paragraph (b)(2) of this section shall meet all of the following conditions:

(i) Each waste stream managed in the tank must have a flow-weighted annual average water content less than or equal to 10 percent water, on a volume basis as total water.

(ii) The waste managed in the tank either:

(A) Has a maximum organic vapor pressure less than 5.2 kilopascals (kPa) (0.75 pounds per square inch (psi));

(B) Has a maximum organic vapor pressure less than 27.6 kPa (4.0 psi) and is managed in a tank having design capacity less than 151 m³ (40,000 gal); or

(C) Has a maximum organic vapor pressure less than 76.6 kPa (11.1 psi) and is managed in a tank having a design capacity less than 75 m³ (20,000 gal).

(2) The owner or operator shall install, operate, and maintain a fixed roof as specified in paragraph (a)(1)(i).

(3) For each tank complying with paragraph (b) of this section, one or more devices which vent directly to the atmosphere may be used on the tank provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(c) Each fixed-roof, seal, access door, and all other openings shall be checked

by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access doors and other openings are closed and gasketed properly.

6. Section 61.344 is amended by redesignating paragraph (a)(1)(i)(C) as (a)(1)(i)(D), and by adding paragraph (a)(1)(i)(C) to read as follows:

§ 61.344 Standards: Surface impoundments.

(a) * * *

(1) * * *

(i) * * *

(C) If the cover and closed-vent system operate such that the enclosure of the surface impoundment is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart; and

(3) The pressure is monitored continuously to ensure that the pressure in the enclosure of the surface impoundment remains below atmospheric pressure.

7. Section 61.345 is amended by revising paragraphs (a)(1)(ii), (a)(2), and (a)(3) introductory text; and by adding paragraph (a)(4) to read as follows:

§ 61.345 Standards: Containers.

(a) * * *

(1) * * *

(ii) Except as provided in paragraph (a)(4) of this section, each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(2) When a waste is transferred into a container by pumping, the owner or operator shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for

those openings required for the submerged fill pipe, those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover, and any openings complying with paragraph (a)(4) of this section.

(3) Treatment of a waste in a container, including aeration, thermal or other treatment, shall be performed by the owner or operator in a manner such that whenever it is necessary for the container to be open while the waste is being treated, the container is located under a cover (e.g. enclosure) with a closed-vent system that routes all organic vapors vented from the container to a control device, except for cover and closed-vent systems that meet the requirements in paragraph (a)(4) of this section.

(4) If the cover and closed-vent system operate such that the container is maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by methods specified in § 61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the container remains below atmospheric pressure.

8. Section 61.346 is amended by adding paragraph (a)(1)(i)(C) to read as follows:

§ 61.346 Standards: Individual drain systems.

(a) * * *

(1) * * *

(i) * * *

(C) If the cover and closed-vent system operate such that the individual drain system is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at

least once per year by the methods specified in § 61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the individual drain system remains below atmospheric pressure.

9. Section 61.347 is amended by adding paragraph (a)(1)(i)(C) to read as follows:

§ 61.347 Standards: Oil-water separators.

- (a) * * *
- (1) * * *
- (i) * * *

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

10. Section 61.348 is amended by adding a new sentence at the end of paragraph (a)(5); by revising the introductory text of paragraphs (b) and (e); by redesignating paragraphs (f) and (g) as (e)(1) and (e)(2); by adding paragraph (e)(3); and by redesignating paragraphs (h) and (i) as (f) and (g).

§ 61.348 Standards: Treatment Processes.

- (a) * * *

(5) * * * These provisions apply to above-ground wastewater treatment systems as well as those that are at or below ground level.

(b) Except for facilities complying with § 61.342(e), the owner or operator that aggregates or mixes individual waste streams as defined in paragraph (a)(5) of this section for management and treatment in a wastewater treatment system shall comply with the following requirements:

(e) Except as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when

waste is being treated, except during inspection and maintenance.

(3) If the cover and closed-vent system operate such that the treatment process and wastewater treatment system unit are maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the treatment process and wastewater treatment system unit remain below atmospheric pressure.

Section 61.349 is amended by revising paragraphs (a)(1)(ii), (a)(2)(i)(B), (a)(2)(ii), and (e); and by adding paragraphs (a)(1)(iv), and (a)(2)(iv) to read as follows:

§ 61.349 Standards: Closed-vent systems and control devices.

- (a) * * *
- (1) * * *

(ii) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes, except as provided in paragraph (a)(1)(ii)(B) of this section.

(A) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(B) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(iv) For each closed-vent system complying with paragraph (a) of this section, one or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations

except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

- (2) * * *
- (i) * * *

(B) Achieve a total organic compound concentration of 20 ppmv (as the sum of the concentrations for individual compounds using Method 18) on a dry basis corrected to 3 percent oxygen; or

(ii) A vapor recovery system (e.g., a carbon adsorption system or a condenser) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iv) A control device other than those described in paragraphs (a)(2) (i) through (iii) of this section may be used provided that the following conditions are met:

(A) The device shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(B) The owner or operator shall develop test data and design information that documents the control device will achieve an emission control efficiency of either 95 percent or greater for organic compounds or 98 percent or greater for benzene.

(C) The owner or operator shall identify:

(1) The critical operating parameters that affect the emission control performance of the device;

(2) The range of values of these operating parameters that ensure the emission control efficiency specified in paragraph (a)(2)(iv)(A) of this section is maintained during operation of the device; and

(3) How these operating parameters will be monitored to ensure the proper operation and maintenance of the device.

(D) The owner or operator shall submit the information and data specified in paragraphs (a)(2)(iv) (B) and (C) of this section to the Administrator prior to operation of the alternative control device.

(E) The Administrator will determine, based on the information submitted

under paragraph (a)(2)(iv)(D) of this section, if the control device subject to paragraph (a)(2)(iv) of this section meets the requirements of § 61.349. The control device subject to paragraph (a)(2)(iv) of this section may be operated prior to receiving approval from the Administrator. However, if the Administrator determines that the control device does not meet the requirements of § 61.349, the facility may be subject to enforcement action beginning from the time the control device began operation.

(e) The Administrator may request at any time an owner or operator demonstrate that a control device meets the applicable conditions specified in paragraph (a)(2) of this section by conducting a performance test using the test methods and procedures as required in § 61.355, and for control devices subject to paragraph (a)(2)(iv) of this section, the Administrator may specify alternative test methods and procedures, as appropriate.

12. Section 61.353 is amended by revising paragraph (a) to read as follows:

§ 61.353 Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in benzene emissions at least equivalent to the reduction in benzene emissions from the source achieved by the applicable design, equipment, work practice, or operational requirements in §§ 61.342 through 61.349, 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.

13. Section 61.354 is amended by revising paragraphs (a)(1), (b), (c)(6)(i), (c)(7)(i), (c)(8), and (d) and by adding paragraphs (c)(9), (f), and (g) to read as follows:

§ 61.354 Monitoring of operations.

(a) * * *

(1) Measure the benzene concentration of the waste stream exiting the treatment process complying with § 61.348(a)(1)(i) at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(b) If an owner or operator complies with the requirements of § 61.348(b),

then the owner or operator shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows:

(1) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of § 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(2) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

(c) * * *

(6) * * *

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the condenser; or

(7) * * *

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the carbon bed; or

(8) For a vapor recovery system other than a condenser or carbon adsorption system, a monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the control device.

(9) For a control device subject to the requirements of § 61.349(a)(2)(iv), devices to monitor the parameters as specified in § 61.349(a)(2)(iv)(C).

(d) For a carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily

basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(f) Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do the following:

(1) Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure mechanism required under § 61.349(a)(1)(ii) to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) Visually inspect the readings from each flow monitoring device required by § 61.349(a)(1)(ii) at least once each operating day to check that vapors are being routed to the control device as required.

(g) Each owner or operator who uses a system for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device equipped with a continuous recorder to monitor the pressure in the unit to ensure that it is less than atmospheric pressure.

14. Section 61.355 is amended by revising paragraphs (a)(1) introductory text, (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), (b), (c) introductory text, the first sentence of (d), (e)(3), (e)(4), (f)(3), the first sentence of (g), (i) introductory text, (i)(3) introductory text, (i)(3)(ii)(C), (i)(3)(iii), (i)(3)(iv), and (i)(4); by adding paragraph (a)(6); by redesignating paragraphs (c)(1) and (c)(2) as (c)(2) and (c)(3), respectively; by adding (c)(1) and a new sentence to the end of the newly redesignated paragraph (c)(2); and by adding paragraphs (j) and (k) to read as follows:

§ 61.355 Test methods, procedures, and compliance provisions.

(a) * * *

(1) For each waste stream subject to this subpart having a flow-weighted annual average water content greater

than 10 percent water, on a volume basis as total water, or is mixed with water or other wastes at any time and the resulting mixture has an annual average water content greater than 10 percent as specified in § 61.342(a), the owner or operator shall:

(i) Determine the annual waste quantity for each waste stream using the procedures specified in paragraph (b) of this section.

(ii) Determine the flow-weighted annual average benzene concentration for each waste stream using the procedures specified in paragraph (c) of this section.

(2) Total annual benzene quantity from facility waste is calculated by adding together the annual benzene quantity for each waste stream generated during the year and the annual benzene quantity for each process unit turnaround waste annualized according to paragraph (b)(4) of this section.

(3) If the total annual benzene quantity from facility waste is equal to or greater than 10 mg/yr, then the owner or operator shall comply with the requirements of § 61.342 (c), (d), or (e).

(6) The benzene quantity in a waste stream that is generated less than one time per year, except as provided for process unit turnaround waste in paragraph (b)(4) of this section, shall be included in the determination of total annual benzene quantity from facility waste for the year in which the waste is generated unless the waste stream is otherwise excluded from the determination of total annual benzene quantity from facility waste in accordance with paragraphs (a) through (c) of this section. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste, for purposes of determining the total annual benzene quantity from facility waste.

(b) For purposes of the calculation required by paragraph (a) of this section, an owner or operator shall determine the annual waste quantity at the point of waste generation, unless otherwise provided in paragraphs (b) (1), (2), (3), and (4) of this section, by one of the methods given in paragraphs (b) (5) through (7) of this section.

(1) The determination of annual waste quantity for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(2) The determination of annual waste quantity for wastes at coke by-product

plants subject to and complying with the control requirements of §§ 61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(i) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(ii) The ammonia still meets the definition of a sour water stripper in § 61.341.

(3) The determination of annual waste quantity for wastes that are received at hazardous waste treatment, storage, or disposal facilities from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(4) The determination of annual waste quantity for each process unit turnaround waste generated only at 2 year or greater intervals, may be made by dividing the total quantity of waste generated during the most recent process unit turnaround by the time period (in the nearest tenth of a year) between the turnaround resulting in generation of the waste and the most recent preceding process turnaround for the unit. The resulting annual waste quantity shall be included in the calculation of the annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process turnaround. For estimates of total annual benzene quantity as specified in the 90-day report, required under § 61.357(a)(1), the owner or operator shall estimate the waste quantity generated during the most recent turnaround, and the time period between turnarounds in accordance with good engineering practices. If the owner or operator chooses not to annualize process unit turnaround waste, as specified in this paragraph, then the process unit turnaround waste quantity shall be included in the calculation of the annual benzene quantity for the year in which the turnaround occurs.

(5) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility;

(6) Use the maximum design capacity of the waste management unit; or

(7) Use measurements that are representative of maximum waste generation rates.

(c) For the purposes of the calculation required by §§ 61.355(a) of this subpart, an owner or operator shall determine the flow-weighted annual average benzene concentration in a manner that meets the requirements given in paragraph (c)(1) of this section using either of the methods given in paragraphs (c)(2) and (c)(3) of this section.

(1) The determination of flow-weighted annual average benzene concentration shall meet all of the following criteria:

(i) The determination shall be made at the point of waste generation except for the specific cases given in paragraphs (c)(1)(i)(A) through (D) of this section.

(A) The determination for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(B) The determination for wastes at coke by-product plants subject to and complying with the control requirements of §§ 61.132, 61.133, 61.134, or 61.139 of Subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(1) The transfer of wastes between units complying with the control requirements of Subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(2) The ammonia still meets the definition of a sour water stripper in § 61.341.

(C) The determination for wastes that are received from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(D) The determination of flow-weighted annual average benzene concentration for process unit turnaround waste shall be made using either of the methods given in paragraph (c)(2) or (c)(3) of this section. The resulting flow-weighted annual average benzene concentration shall be included in the calculation of annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process unit turnaround.

(ii) Volatilization of the benzene by exposure to air shall not be used in the

determination to reduce the benzene concentration.

(iii) Mixing or diluting the waste stream with other wastes or other materials shall not be used in the determination—to reduce the benzene concentration.

(iv) The determination shall be made prior to any treatment of the waste that removes benzene, except as specified in paragraphs (c)(1)(i)(A) through (D) of this section.

(v) For wastes with multiple phases, the determination shall provide the weighted-average benzene concentration based on the benzene concentration in each phase of the waste and the relative proportion of the phases.

(2) . . . when an owner or operator and the Administrator do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under paragraph (c)(3) of this section shall be used to resolve the disagreement.

(d) An owner or operator using performance tests to demonstrate compliance of a treatment process with § 61.348 (a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. . . .

(e)
(3) The mass flow rate of benzene entering the treatment process (E_b) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_b =Mass flow rate of benzene entering the treatment process, kg/hour.

K =Density of the waste stream, kg/m³.

V_i =Average volume flow rate of waste entering the treatment process during each run i , m³/hour.

C_i =Average concentration of benzene in the waste stream entering the treatment process during each run i , ppmw.

n =Number of runs.

(4) The mass flow rate of benzene exiting the treatment process (E_a) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows:

$$E_a = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_a =Mass flow rate of benzene exiting the treatment process, kg/hour.

K =Density of the waste stream, kg/m³.

V_i =Average volume flow rate of waste exiting the treatment process during each run i , m³/hour.

C_i =Average concentration of benzene in the waste stream exiting the treatment process during each run i , ppmw.

n =Number of runs.

(f)

(3) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-

hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_b =Mass flow rate of benzene into the combustion unit, kg/hour.

K =Density of the waste stream, kg/m³.

V_i =Average volume flow rate of waste entering the combustion unit during each run i , m³/hour.

C_i =Average concentration of benzene in the waste stream entering the combustion unit during each run i , ppmw.

n =Number of runs.

(g) An owner or operator using performance tests to demonstrate compliance of a wastewater treatment system unit with § 61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. . . .

(i) An owner or operator using a performance test to demonstrate compliance of a control device with either the organic reduction efficiency requirement or the benzene reduction efficiency requirement specified under § 61.349(a)(2) shall use the following procedures:

(3) The mass flow rate of either the organics or benzene entering and exiting the control device shall be determined as follows:

(ii)
(C) The organic concentration or the benzene concentration, as appropriate, in the vent stream entering and exiting the control shall be determined using Method 18 from Appendix A of 40 CFR part 60.

(iii) The mass of organics or benzene entering and exiting the control device during each run shall be calculated as follows:

$$M_{aj} = K V_{aj} \left[\sum_{i=1}^n C_{ai} MW_i \right] (10^{-6})$$

$$M_{bj} = K V_{bj} \left[\sum_{i=1}^n C_{bi} MW_i \right] (10^{-6})$$

Where:

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j , kg.

M_{bj} = Mass of organics or benzene in the vent stream exiting the control device during run j , kg.

V_{aj} = Volume of vent stream entering the control device during run j at standard conditions, m^3 .

V_{bj} = Volume of vent stream exiting the control device during run j at standard conditions, m^3 .

C_w = Organic concentration of compound i or the benzene concentration measured in the vent stream entering the control device as determined by Method 18, ppm by volume on a dry basis.

C_n = Organic concentration of compound i or the benzene concentration measured in the vent stream exiting the control device as determined by Method 18, ppm by volume on a dry basis.

MW_i = Molecular weight of organic compound i in the vent stream or the molecular weight of benzene, kg/kg-mol.

n = Number of organic compounds in the vent stream; if benzene reduction efficiency is being demonstrated, then $n=1$.

K = Conversion factor for molar volume = $0.0416 \text{ kg-mol}/m^3$ (at 293°K and 760 mm Hg).

10^{-6} = Conversion from ppm, ppm^{-1} .

(iv) The mass flow rate of organics or benzene entering and exiting the control device shall be calculated as follows:

$$E_a = \left(\sum_{j=1}^n M_{aj} \right) / T$$

$$E_b = \left(\sum_{j=1}^n M_{bj} \right) / T$$

Where:

E_a = Mass flow rate of organics or benzene entering the control device, kg/hour.

E_b = Mass flow rate of organics or benzene exiting the control device, kg/hour.

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j , kg.

M_{bj} = Mass of organics or benzene in vent stream exiting the control device during run j , kg.

T = Total time of all runs, hour.

n = Number of runs.

(4) The organic reduction efficiency or the benzene reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_a - E_b}{E_a} \times 100$$

Where:

R = Total organic reduction efficiency or benzene reduction efficiency for the control device, percent.

E_a = Mass flow rate of organics or benzene entering the control device, kg/hr.

E_b = Mass flow rate of organics or benzene exiting the control device, kg/hr.

(j) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342 (c)(3)(ii)(B) according to the provisions of paragraph (a) of this section, except that the procedures in paragraph (a) of this section shall also apply to wastes with a water content of 10 percent or less.

(k) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342(e)(2) by the following procedure:

(1) For each waste stream that is not controlled for air emissions in accordance with §§ 61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this

section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by § 61.342(e)(2).

(2) For each waste stream that is controlled for air emissions in accordance with §§ 61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the determination of annual waste quantity and flow-weighted annual average benzene concentration shall be made at the first applicable location as described in paragraphs (k)(2)(i), (k)(2)(ii), and (k)(2)(iii) of this section and prior to any reduction of benzene concentration through volatilization of the benzene, using the methods given in (k)(2)(iv) and (k)(2)(v) of this section.

(i) where the waste stream enters the first waste management unit not complying with §§ 61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a) that are applicable to the waste management unit.

(ii) For each waste stream that is managed or treated only in compliance with §§ 61.343 through 61.348(a) up to the point of final direct discharge from the facility, the determination of benzene quantity shall be prior to any reduction of benzene concentration through volatilization of the benzene, or

(iii) For wastes managed in units controlled for air emissions in accordance with §§ 61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a), and then transferred offsite, facilities shall use the first applicable offsite location as described in paragraphs (k)(2)(i) and (k)(2)(ii) of this section if they have documentation from the offsite facility of the benzene quantity at this location. Facilities without this documentation for offsite wastes shall use the benzene quantity determined at the point where the transferred waste leaves the facility.

(iv) Annual waste quantity shall be determined using the procedures in paragraphs (b)(5), (6), or (7) of this section, and

(v) The flow-weighted annual average benzene concentration shall be determined using the procedures in paragraphs (c)(2) or (3) of this section.

(3) The benzene quantity in a waste stream that is generated less than one time per year, including process unit turnaround waste, shall be included in the determination of benzene quantity as determined in paragraph (k)(6) of this section for the year in which the waste is generated. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste for purposes of determining benzene quantity as determined in paragraph (k)(6) of this section.

(4) The benzene in waste entering an enhanced biodegradation unit, as defined in § 61.348(b)(2)(ii)(B), shall not be included in the determination of benzene quantity, determined in paragraph (k)(6) of this section, if the following conditions are met:

(i) The benzene concentration for each waste stream entering the enhanced biodegradation unit is less than 10 ppmw on a flow-weighted annual average basis, and

(ii) All prior waste management units managing the waste comply with §§ 61.343, 61.344, 61.345, 61.346, 61.347 and 61.348(a).

(5) The benzene quantity for each waste stream in paragraph (k)(2) of this section shall be determined by multiplying the annual waste quantity of each waste stream times its flow-weighted annual average benzene concentration.

(6) The total benzene quantity for the purposes of the calculation required by § 61.342(e)(2) shall be determined by adding together the benzene quantities determined in paragraphs (k)(1) and (k)(5) of this section for each applicable waste stream.

(7) If the benzene quantity determined in paragraph (6) of this section exceeds 6.0 Mg/yr only because of multiple counting of the benzene quantity for a waste stream, the owner or operator may use the following procedures for the purposes of the calculation required by § 61.342(e)(2):

(1) Determine which waste management units are involved in the multiple counting of benzene;

(ii) Determine the quantity of benzene that is emitted, recovered, or removed from the affected units identified in paragraph (k)(7)(i) of this section, or destroyed in the units if applicable,

using either direct measurements or the best available estimation techniques developed or approved by the Administrator.

(iii) Adjust the benzene quantity to eliminate the multiple counting of benzene based on the results from paragraph (k)(7)(ii) of this section and determine the total benzene quantity for the purposes of the calculation required by § 61.342(e)(2).

(iv) Submit in the annual report required under § 61.357(a) a description of the methods used and the resulting calculations for the alternative procedure under paragraph (k)(7) of this section, the benzene quantity determination from paragraph (k)(6) of this section, and the adjusted benzene quantity determination from paragraph (k)(7)(iii) of this section.

15. Section 61.356 is amended by redesignating paragraph (b)(4) as (b)(6); by revising newly redesignated (b)(6); by adding paragraphs (b)(4) and (b)(5); by revising paragraph (b)(2), (c), (d), (e)(2), and the introductory text of (f)(2); by removing (f)(2)(i); by redesignating paragraph (f)(2)(ii) as (f)(2)(i); by revising newly redesignated paragraphs (f)(2)(i) introductory text and (f)(2)(i) (E) through (G); by adding paragraph (f)(2)(i)(H); by redesignating (i)(4) as (i)(5); by adding paragraph (i)(4); by revising paragraphs (j)(3), (j)(6), (j)(8), (j)(9), and (j)(11); and by adding paragraphs (j)(12), (m), and adding and reserving paragraph (f)(2)(ii) to read as follows:

§ 61.356 Recordkeeping requirements.

(b) * * *

(2) For each waste stream exempt from § 61.342(c)(1) in accordance with § 61.342(c)(3), the records shall include:

(i) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr in accordance with § 61.342(c)(3)(i), or

(ii) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr in accordance with § 61.342(c)(3)(ii).

(4) For each facility where waste streams are controlled for benzene emissions in accordance with § 61.342(e), the records shall include for each waste stream all measurements, including the locations of the measurements, calculations, and other documentation used to determine that

the total benzene quantity does not exceed 6.0 Mg/yr.

(5) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with § 61.355(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with § 61.355(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with § 61.355(a)(1)(iii) of this section.

(6) For each facility where wastewater streams are controlled for benzene emissions in accordance with § 61.348(b)(2), the records shall include all measurements, calculations, and other documentation used to determine the annual benzene content of the waste streams and the total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units.

(c) An owner or operator transferring waste off-site to another facility for treatment in accordance with § 61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment.

(d) An owner or operator using control equipment in accordance with §§ 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

(e) * * *

(2) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams.

and other documentation necessary to demonstrate the unit performance.

(f) . . .

(2) If engineering calculations are used to determine control device performance in accordance with § 61.349(c), then a design analysis for the control device that includes for example:

(i) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the owner or operator, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. The design analysis shall address the following vent stream characteristics and control device operating parameters:

(E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level or the design outlet benzene concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(F) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(G) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device, such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream

benzene concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(H) For a control device subject to the requirements of § 61.349(a)(2)(iv), the design analysis shall consider the vent stream composition, constituent concentration, and flow rate. The design analysis shall also include all of the information submitted under § 61.349(a)(2)(iv).

(ii) [Reserved]

(i) . . .

(4) If measurements of waste stream benzene concentration are performed in accordance with § 61.354(b), the owner or operator shall maintain records that include the date each test is performed and all test results.

(j) . . .

(3) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when:

(i) Any valve car-seal or closure mechanism required under § 61.349(a)(1)(ii) is broken or the by-pass line valve position has changed.

(ii) The flow monitoring devices required under § 61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required.

(6) If a boiler or process heater is used, then the owner or operator shall maintain records of each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone as required by § 61.349(a)(2)(i)(C). For a boiler or process heater having a design heat input capacity less than 44 MW, the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the boiler or process heater 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 below the design combustion zone temperature. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, the owner or operator shall maintain continuous records of the parameter(s) monitored in accordance with the requirements of § 61.354(c)(5).

(8) If a condenser is used, then the owner or operator shall maintain records from the monitoring device of

the parameters selected to be monitored in accordance with § 61.354(c)(6). If concentration of organics or concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the temperature of the condenser exhaust stream and coolant fluid is monitored, then the owner or operator shall record all 3-hour periods of operation during which the temperature of the condenser exhaust vent stream is more than 6 °C above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6 °C above the design average coolant fluid temperature at the condenser outlet.

(9) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time.

(11) If an alternative operational or process parameter is monitored for a control device, as allowed in § 61.354(e) of this subpart, then the owner or operator shall maintain records of the continuously monitored parameter, including periods when the device is not operated as designed.

(12) If a control device subject to the requirements of § 61.349(a)(2)(iv) is used, then the owner or operator shall maintain records of the parameters that are monitored and each occurrence when the parameters monitored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or other records as specified by the Administrator.

(m) If a system is used for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air, then

the owner or operator shall maintain records of the monitoring device and records of all periods during which the pressure in the unit is operated at a pressure that is equal to or greater than atmospheric pressure.

16. Section 61.357 is amended by revising paragraphs (a) introductory text and (a)(4); by adding a new sentence at the end of paragraph (c) and a new sentence at the end of paragraph (d)(2); by removing paragraph (d)(4); by redesignating paragraph (d)(3) as (d)(4); by adding paragraph (d)(3); by redesignating paragraphs (d)(5), (d)(6) and (d)(7) as (d)(6), (d)(7) and (d)(8) respectively; by redesignating the newly redesignated paragraph (d)(7)(iii) as (d)(7)(iv); by adding paragraphs (d)(5), (d)(7)(iii), (d)(7)(iv)(I) and (d)(7)(V); and by revising paragraph (d)(1), the newly redesignated paragraphs (d)(4)(iii), (d)(7)(iv)(D) and (d)(8) to read as follows:

§ 61.357 Reporting requirements.

(a) Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to § 61.342 and is determined by the procedures specified in § 61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:

(4) The information required in paragraphs (a) (1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need to include a description of the controls to be installed to comply with the standard or other information required in § 61.10(a).

(c) * * * If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(d) * * *

(1) Within 90 days after January 7, 1993, unless a waiver of compliance under § 61.11 of this part is granted, or by the date of initial startup for a new source with an initial startup after the effective date, a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests have been carried out in accordance with this subpart. If a waiver of compliance is granted under § 61.11, the certification of equipment necessary to comply with these standards shall be submitted by the date the waiver of compliance expires.

(2) * * * If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(3) If an owner or operator elects to comply with the requirements of § 61.342(c)(3)(ii), then the report required by paragraph (d)(2) of this section shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams.

(4) * * *

(iii) For each process wastewater stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the exit to the treatment process: Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(5) If an owner or operator elects to comply with the alternative requirements of § 61.342(e), then the report required by paragraph (d)(2) of this section shall include a table presenting the following information for each waste stream:

(i) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;

(ii) For each waste stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the applicable location described in

§ 61.355(k)(2): Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity

(7) * * *

(iii) If a treatment process or wastewater treatment system unit is monitored in accordance with § 61.354(b); then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr.

(iv) * * *

(D) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas.

(J) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or any other periods specified by the Administrator for a control device subject to the requirements of § 61.349(a)(2)(iv).

(v) For a cover and closed-vent system monitored in accordance with § 61.354(g), the owner or operator shall submit a report quarterly to the Administrator that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure.

(8) Beginning one year after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that summarizes all inspections required by §§ 61.342 through 61.354 during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken.

§ 61.359 [Removed]

17. Section 61.359 is removed and reserved.

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