ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[AD–FRL–4732–9]

RIN 2060–AC27

National Emission Standards for Hazardous Air Pollutants for Source Categories: Perchloroethylene Dry Cleaning Facilities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: National emission standards for hazardous air pollutants (NESHAP) for perchloroethylene (PCE) dry cleaning facilities were proposed in the **Federal Register** on December 9, 1991 (56 FR 64382). A notice of availability of new information on control of PCE emissions during clothing transfer at dry cleaning facilities that use transfer dry cleaning machines was published on October 1, 1992 (57 FR 45363). This action promulgates national emission standards for PCE dry cleaning facilities. These standards implement section 112 of the Clean Air Act (Act) and are based on the Administrator's determination that PCE is a hazardous air pollutant (HAP) and that emissions, ambient concentrations, bioaccumulation, or deposition of PCE are known to cause or may reasonably be anticipated to cause adverse effects to human health or the environment.

The intended effect of this NESHAP is to require all new and existing major source dry cleaning facilities (emitting or with the potential to emit greater than 9.1 megagrams (Mg) [10 tons] per year of PCE) to control emissions to the level of the maximum achievable control technology (MACT), as specified in section 112 of the Act.

The intended effect of this NESHAP is also to require all new and existing area source dry cleaning facilities (emitting or with the potential to emit 9.1 Mg [10 tons] per year or less of PCE) to control PCE emissions to the level achieved by generally available control technologies (GACT) or management practices.

EFFECTIVE DATE: September 22, 1993.

Judicial Review. Under section 307(b)(1) of the Act, judicial review of the actions taken by this notice is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Act, 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.

ADDRESSES: *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD–35), Research Triangle Park, North Carolina 27711, telephone number (919) 541–2777. Please refer to "Dry Cleaning Facilities—Background Information for Promulgated Standards," EPA–450/3–91–020b. The BID contains: (1) A summary of the public comments made on the proposed NESHAP and the notice of availability of new information and the Administrator's response to the comments; (2) a summary of the changes made to the NESHAP since proposal; and (3) the final Environmental Impact Statement, which summarizes the impacts of the standards.

Docket. Docket No. A–88–11, containing information considered by the EPA in development of the promulgated standards, is available for public inspection between 8:30 a.m. and 3:30 p.m., Monday through Friday, excluding Federal holidays, at the EPA's Air Docket (LE–131), Waterside Mall, room M1500, 1st Floor, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

Public Meeting. As discussed in more detail at the end of this preamble, in order to gain additional understanding of indoor air pollution, ground water contamination and solid waste generation resulting from dry cleaning facilities, the EPA will convene a public meeting at a place and time to be announced. Information also will be sought on the environmental impacts associated with the operation of wastewater evaporators. The objective of this public meeting will be to gather information on the magnitude of these problems, as well as potential solutions to these problems.

Individuals wishing to find out the date and location of the meeting or to speak at this public meeting should contact Ms. Julia Stevens at (919) 541–5578 by October 22, 1993. Individuals wishing to submit written comments in lieu of attending this public meeting should forward their comments by November 22, 1993 to: Mr. Bruce Jordan, Director; Emission Standards Division (MD–13); Environmental Protection Agency; Research Triangle Park, NC 27711.

FOR FURTHER INFORMATION CONTACT: For information concerning the standards, contact Mr. George Smith at (919) 541–1549 or Mr. Fred Porter at (919) 541–5251, Standards Development Branch, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION: The following outline is provided to aid in reading the preamble to the final rule.

I. Background

A. List of Categories and Subcategories

The Act requires, under section 112, that the EPA evaluate and control emissions of HAP's. The control of HAP's is achieved through promulgation of emission standards under sections 112(d) and 112(f) for categories of sources that emit HAP's. Section 112(c)(3) directs the Administrator to list each category or subcategory of area sources which the Administrator finds "presents a threat of adverse effects to human health or the environment." Section 112(c)(3) also directs the Administrator to list within 5 years "sufficient categories or

subcategories of area sources to ensure that area sources representing 90 percent of the area source emissions of the 30 HAP's that present the greatest threat to public health in the largest number of urban areas are subject to regulation." Section 112(c)(1) directed the EPA to publish an initial list of major sources which emitted one or more of the listed 189 HAP's. As described in the proposal, (56 FR 64382, 64383 (December 9, 1991)), the EPA identified 5 categories of major or area sources of dry cleaners for regulation. These source categories were included in the initial section 112(c)(1) list published on July 16, 1992, (57 FR 31576) as follows:

Source Category and Subcategory
Industrial (major)—Dry-to-dry machines; Transfer machines.
Commercial (major)—Transfer machines.
Commercial (area)—Dry-to-dry machines; Transfer machines.

All sources in the industrial category are major sources. The industrial category has two basic types of machines: Dry-to-dry and transfer. A major source includes any source that emits or has the potential to emit, considering controls, in the aggregate, 9.1 Mg/yr (10 tpy) of any HAP (section 112(a)(1) of the Act). The EPA proposed that the industrial source category and those major sources under the commercial source category be regulated under MACT. The EPA also proposed that the commercial source category, which includes area sources, be listed under section 112(c)(3) for regulation under GACT.

B. Source of Authority for National Emission Standards for Hazardous Air Pollutants Development

Title III of the Act was enacted to help reduce the increasing amount of nationwide air toxics emissions. Under title III, section 112 was amended to give the EPA the authority to establish national standards to reduce air toxics from sources that emit one or more HAP. Section 112(b) contains a list of HAP's, which are the specific air toxics to be regulated by NESHAP. Section 112(c) directs the EPA to use this pollutant list to develop and publish a list of source categories for which a NESHAP will be developed. The EPA must list all known categories and subcategories of "major sources" (defined above) which emit one or more of the listed HAP's. Area source categories selected by the EPA for NESHAP development will be based on the Administrator's judgment that the sources in a category, individually or in aggregate, pose a "threat of adverse effects to health and the environment." As noted above, the initial section 112(c)(1) list of source categories was published on July 16, 1992 (57 FR 31576) and listed 5 source categories of dry cleaners (three major and two area).

C. Criteria for Development of National Emission Standards for Hazardous Air Pollutants

The NESHAP are to be developed to control HAP emissions from both new and existing sources according to the statutory directives set out in section 112. The statute requires the standards to reflect the maximum degree of reduction in emissions of HAP's that is achievable for new or existing sources. The NESHAP must reflect consideration of the cost of achieving the emission reduction, and any nonair quality health and environmental impacts, and energy requirements for control levels more stringent than the MACT floors (described below). The emission reduction may be accomplished through application of measures, processes, methods, systems or techniques including, but not limited to, measures which:

1. Reduce the volume of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications,
2. Enclose systems or processes to eliminate emissions,
3. Collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point,
4. Are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in subsection (h), or
5. Are a combination of the above (section 112(d)(2)).

To develop a NESHAP, the EPA collects information about the industry, including information on emission source characteristics, control technologies, data from HAP emission tests at well-controlled facilities, and information on the costs and other energy and environmental impacts of emission control techniques. The EPA uses this information to analyze possible regulatory approaches.

Although NESHAP are normally structured in terms of numerical emission limits, alternative approaches are sometimes necessary. In some cases, physically measuring emissions from a source may be impossible or at least impracticable due to technological and economic limitations. Section 112(h) authorizes the Administrator to promulgate a design, equipment, work practice, or operational standard, or combination thereof, in those cases where it is not feasible to prescribe or enforce an emissions standard.

Section 112(h)(2) provides that, "the phrase 'not feasible to prescribe or enforce an emission standard' means any situation in which the Administrator determines that "the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations." As described below, the Administrator has determined that it is impracticable to prescribe an emission standard for the sources subject to this rule. Accordingly, this final rule is being issued as a section 112(h) standard.

D. Categorization/Subcategorization: Determining Maximum Achievable Control Technology "Floors" for NESHAP

The Act directs the Administrator to list categories and subcategories of major sources and area sources which emit one or more of the HAP's listed in section 112(b) (section 112(c) of the Act). The Administrator shall list all major sources which emit HAP's. The Administrator shall list those area source categories and subcategories which she finds present a threat of adverse effects to human health or the environment warranting regulation. Once the EPA has identified the specific source categories or subcategories of major sources and area sources that it intends to regulate under section 112, it must set MACT standards for each and must set such standards at a level at least as stringent as the "floor," unless it regulates area sources under section 112(d)(5) as described below. Congress provided certain very specific directives to guide the EPA in the process of determining the regulatory floor.

Congress specified that the EPA shall establish standards which require "the maximum degree of reduction in emissions of the hazardous air pollutants * * * that the Administrator, taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impacts and energy requirements, determines is achievable * * *" (section 112(d)(2) of the Act) In addition, Congress limited the EPA's discretion by establishing a minimum baseline or "floor" for standards. For new sources, the standards for a source category or subcategory "shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator" (section 112(d)(3) of the Act). Congress provided that existing source standards could be less

stringent than new source standards but could be no less stringent than the average emission limitation achieved by the best performing 12 percent of the existing sources (excluding certain sources) for categories and subcategories with 30 or more sources or the best performing 5 sources for categories or subcategories with fewer than 30 sources (section 112(d)(3) of the Act).

Once the floor has been determined for new or existing sources for a category or subcategory, the Administrator must set MACT standards that are no less stringent than the floor. Such standards must then be met by all sources within the category or subcategory. However, in establishing the standards, the Administrator may distinguish among classes, types, and sizes of sources within a category or subcategory (section 112(d)(1) of the Act). Thus, for example, the Administrator could establish two classes of sources within a category or subcategory based on size and establish a different emission standard for each class, provided both standards are at least as stringent as the MACT floor.

In addition, the Act provides the Administrator further flexibility to regulate area sources. Section 112(d)(5) provides that in lieu of establishing MACT standards under section 112(d), the Administrator may promulgate standards which provide for the use of "generally available control technologies or management practices." Area source standards promulgated under this authority (GACT standards) would not be subject to the MACT "floors" described above. Moreover, for source categories subject to standards promulgated under section 112(d)(5), the EPA is not required to conduct a residual risk analysis under section 112(f).

At the end of the data gathering and analysis, the EPA must decide whether it is more appropriate to follow the MACT or the GACT approach for regulating an area source category. As stated previously, MACT is required for major sources. If all or some portion of the sources emits less than 9.1 Mg/yr (10 tpy) of any one HAP (or less than 22.7 Mg/yr (25 tpy) of total HAP's), then it may be appropriate to define subcategories within the source category and apply a combination MACT/GACT approach, MACT for major sources and GACT for area sources. In other cases, it may be appropriate to regulate both major and area sources in a source category under MACT.

The next step in establishing a MACT or GACT standard is the investigation of regulatory alternatives. With MACT standards, only alternatives at least as stringent as the floor may be considered. Information about the industry is analyzed to develop model plant populations for projecting national impacts, including HAP emission reduction levels, costs, energy, and secondary impacts. Several regulatory alternative levels (which may be different levels of emissions control or different levels of applicability or both) are then evaluated to determine the most plausible regulatory alternative to reflect the appropriate MACT or GACT level.

The regulatory alternatives for new versus existing sources may be different, and separate regulatory decisions must be made for new and existing sources. For both source types, the selected alternative may be more stringent than the MACT floor. However, the control level selected must be technically achievable. In selecting a regulatory alternative to represent MACT or GACT, the EPA considers the achievable reduction in emissions of HAP's (and possibly other pollutants that are co-controlled), the cost and economic impacts, energy impacts, and other environmental impacts. The objective is to achieve the maximum degree of emission reduction without unreasonable economic or other impacts.

The selected regulatory alternative is then translated into a proposed regulation. The regulation implementing the MACT or GACT decision typically includes sections of applicability, standards, test methods and compliance demonstration, monitoring, reporting, and recordkeeping. The preamble to the proposed regulation provides an explanation of the rationale for the decision. The public is invited to comment on the proposed regulation during the public comment period. Based on an evaluation of these comments, the EPA reaches a final decision and promulgates the NESHAP.

E. Historical Development of the Standards

On November 25, 1980 (45 FR 78174), the EPA proposed new source performance standards (NSPS) to limit emissions of volatile organic compounds (VOC's) from new, modified, and reconstructed PCE dry cleaners under the authority of section 111 of the Act. On December 26, 1985 (50 FR 52880), the EPA published a Notice of Intent to List PCE as a potentially toxic air pollutant to be regulated under section 112 of the Act and solicited information on the potential carcinogenicity of PCE. Perchloroethylene is the predominant solvent used in dry cleaning. It has chemical and physical properties which make it the most desirable solvent available for the dry cleaning of fabrics. Information was also requested on applicable emission control equipment and the associated level of control achievable.

Subsequent to the EPA's issuance of the 1980 proposed rule and to the EPA's Notice of Intent to List and possible regulation of PCE emissions from dry cleaners under section 112, a private citizens group from Oregon, Francis P. Cook, et al., brought suit against the Administrator of the EPA to compel him to issue a final rule regulating emissions from PCE dry cleaners under the authority of section 111 of the Act. The EPA and plaintiffs negotiated a settlement of the lawsuit whereby the EPA agreed to enter into a Consent Decree. The U. S. District Court for the District of Oregon entered the Consent Decree on March 16, 1990, (*Cook* v. *Reilly*, No. 89–630 7E (D. Ore)). In the Consent Decree, the EPA Administrator agreed to sign proposed NESHAP for PCE dry cleaning facilities within 1 year and promulgate the standards within 2 years following enactment of the new amendments to the Act. In accordance with the Consent Decree, on November 15, 1991, the Administrator, William K. Reilly, signed the proposed rulemaking. That notice appeared in the **Federal Register** on December 9, 1991, (56 FR 64382).

In that notice, the EPA proposed to regulate PCE emissions from dry cleaners under authority of section 112 of the Act because PCE is included on the list of HAP's found in section 112(b).

A notice announcing the withdrawal of the proposed NSPS for regulating VOC emissions from PCE dry cleaners under section 111 was also published at that time (56 FR 64382). The Consent Decree was amended twice to provide the EPA additional time to complete this action, with the current decree requiring the Administrator to sign a final rulemaking notice not later than September 13, 1991. This action completes the EPA's obligations to take regulatory action in compliance with the Consent Decree.

II. Summary

A. Summary of Promulgated Standards

The standards being promulgated today will reduce emissions of PCE from new and existing dry cleaning facilities in the industrial and commercial sectors of the dry cleaning industry. Coin-operated dry cleaning machines are exempt from the standards. The requirements of the standards are

discussed below. The process vent control requirements of the standards are presented in table 1.

TABLE 1.—REQUIREMENTS OF THE PCE DRY CLEANING NESHAP

Requirement	Small area source	Large area source	Major source
Applicability:	Consuming less than:	Consuming between:	Consuming more than:
Dry Cleaning Facilities with:			
(1) Only Dry-to-Dry Machines	140 gallons PCE/year	140–2,100 gallons PCE/year	2,100 gallons PCE/year
(2) Only Transfer Machines	200 gallons PCE/year	200–1,800 gallons PCE/year	1,800 gallons PCE/year
(3) Both Dry-to-Dry and Transfer Machines.	140 gallons PCE/year	140–1,800 gallons PCE/year	1,800 gallons PCE/year
Process Vent Controls:			
Existing Facilities	None	(1)	(1)
New Facilities	(2)	(2)	Refrigerated condenser followed by small carbon adsorber (or equivalent)
Fugitive Controls:			
Existing Facilities	(3)	(3)	Room enclosure
	(4)	(4)	
New	(5)	(5)	
	(6)	(6)	
	(7)	(7)	

[1] Refrigerated condenser (or equivalent) Existing carbon adsorbers can remain.
[2] Refrigerated condenser (or equivalent).
[3] Leak detection/repair.
[4] Store all PCE solvent & waste in sealed containers.
[5] Leak detection/repair.
[6] Store all PCE solvent & waste in sealed containers.
[7] No new transfer machine systems allowed.

Owners and operators of all new dry cleaning machines and existing uncontrolled dry cleaning machines located at major sources, as well as those of many area sources, are required to install and operate refrigerated condensers to control PCE emissions from process vents. Owners and operators of existing dry cleaning machines controlled with carbon adsorbers that were installed prior to today's date are not required to replace the carbon adsorber with a refrigerated condenser. These owners and operators may continue to operate their carbon adsorbers to control PCE emissions from process vents. Owners and operators of all dry cleaning machines are required to operate their PCE emission control equipment and dry cleaning machines according to the manufacturer's recommendations. New transfer machine systems are effectively banned through a requirement prohibiting any PCE emissions from clothing transfer between the washer and dryer of transfer machine systems.

Additional controls are required for new dry-to-dry machines and existing transfer machine systems located at major sources. Owners or operators of new dry-to-dry machines located at major sources are required to install a carbon adsorber in addition to a refrigerated condenser. The PCE saturated air remaining in the dry cleaning drum after completion of the refrigerated condenser cycle must be passed through this carbon adsorber immediately before the door of the dry cleaning machine is opened or as the door is opened. Owners or operators of existing transfer machine systems located at major sources are required to contain their transfer machine systems inside a room enclosure. This room enclosure must be vented to a carbon adsorber to control PCE emissions captured by the room enclosure.

To determine if a dry cleaning facility is a major source emitting over 9.1 Mg (10 tons) per year, total annual PCE consumption of all of the dry cleaning machines at a facility is used to determine PCE emissions. For the purpose of these standards, PCE consumption during any period is defined as the PCE purchased during that period. A facility with only dry-to-dry machines consuming 8,000 liters (2,100 gallons) per year would emit 9.1 Mg (10 tons) per year of PCE and is considered a major source. Similarly, a facility with only transfer machine systems consuming 6,800 liters (1,800 gallons) per year would emit 9.1 Mg (10 tons) per year of PCE and is considered a major source. Finally, a facility with both dry-to-dry machines and transfer machine systems consuming 6,800 liters (1,800 gallons) per year would emit 9.1 Mg (10 tons) per year and is also considered a major source.

The standards include yearly low solvent consumption exemption levels for existing area sources (these low solvent consumption levels do not apply to new sources). The low consumption exemption level is 530 liters (140 gallons) per year for an existing area source that contains only dry-to-dry machines. The low consumption exemption level is 760 liters (200 gallons) per year for an existing area source that contains only transfer machine systems. Finally, the low consumption exemption level is 530 liters (140 gallons) per year for an existing area source that contains both dry-to-dry machines and transfer machine systems. Existing area sources with a yearly PCE consumption below these low solvent consumption exemption levels are not required to install process vent controls. To determine appropriate compliance requirements based on PCE consumption, owners or operators of all dry cleaning facilities must calculate a yearly rolling total of PCE consumption (based on purchase receipts) on the first day of each month.

The owner or operator of each dry-to-dry machine, transfer machine dryer, or reclaimer using a refrigerated condenser is required to monitor and record the temperature on the outlet side of the refrigerated condenser once per week. The owner or operator of each transfer machine washer using a refrigerated

condenser is required to monitor and record the temperature on both the inlet side and the outlet side of the refrigerated condenser once per week. The owner or operator of each existing dry cleaning machine using an existing carbon adsorber for process vent control, which was installed prior to today, or each new major source dry-to-dry machine using a supplemental carbon adsorber to control PCE remaining in the machine drum, is required to monitor the concentration of PCE in the carbon adsorber exhaust outlet once per week.

All owners or operators of dry cleaning facilities are subject to pollution reduction requirements for all dry cleaning machines as well as auxiliary equipment (such as emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, diverter valves, and interconnecting piping, hoses, and ducts). To prevent liquid and vapor leaks from these sources, a weekly leak detection and repair program is required at all facilities except existing facilities with annual receipts less than $75,000, where biweekly leak detection and repair is required. All leaks detected must be recorded in a log, must have their necessary repair parts ordered, and must be repaired within 5 working days of receiving the necessary part. Storage of waste containing PCE in tightly sealed containers is also required to reduce PCE emissions before disposal. Owners or operators of all dry cleaning facilities must maintain monthly records of PCE consumption, based on purchase receipts. Each month, the annual PCE consumption for the preceding 12 months must also be calculated and recorded.

Initial reports certified by a responsible official are required, which include a brief description of and the design capacity of all dry cleaning machines at the facility, annual facility PCE consumption and, where appropriate, the type of emission control device to be used to achieve compliance for each machine at the facility. An existing dry cleaning machine that commenced construction prior to December 9, 1991 (the date of proposal of the PCE dry cleaning NESHAP), must comply with pollution prevention and recordkeeping-and-reporting requirements starting 90 days from today. An existing machine must comply with other requirements within 36 months of today's date. In general, a new dry cleaning machine for which construction commenced on or after December 9, 1991, must achieve compliance with this rule upon startup. However, a new dry cleaning machine that was constructed after December 9, 1991, but prior to today's date may comply immediately with the final rule or comply with section 112(i)(2) of the Act. (Section 112(i)(2) allows qualifying new sources 3 years from promulgation to comply with the final rule, if they comply with the proposed rule in the interim.) A statement signed by a responsible official certifying that compliance is being achieved is required 30 days following the date of compliance.

If a dry cleaning facility that initially met the requirements for an area source exceeds the PCE consumption level for an area source and becomes a major source, that dry cleaning facility is required to achieve compliance with the requirements for a major source by 180 days from the date that the PCE consumption level is exceeded, or within 36 months following today's date, whichever date is later.

If an existing dry cleaning facility initially below the low solvent consumption exemption level for an existing area source exceeds this low solvent consumption exemption level, that dry cleaning facility is required to achieve compliance with the process vent requirements for an area source above the low solvent consumption exemption level by 180 days from the date that the PCE consumption level is exceeded, or within 36 months following today's date, whichever date is later.

The recordkeeping requirements include documentation of the volume of PCE purchased each month, results and calculations of the yearly PCE consumption as determined each month, results of weekly or biweekly PCE liquid and vapor leak inspections and, where appropriate, results of weekly control device monitoring (refrigerated condenser outlet temperature, or refrigerated condenser inlet and outlet temperatures, or carbon adsorber exhaust concentration). All records must be retained for 5 years and made available for inspection upon request. Owners and operators of all dry cleaning facilities must retain onsite a copy of the design specifications and operating manuals for all dry cleaning machines and control devices.

Equivalent pollution prevention or emission control technology may be used to achieve compliance with the standards in lieu of the control devices required by the standard if certain information is submitted to and approved by the Administrator. The EPA notes that a dry cleaner could, by replacing perchloroethylene with other cleaning agents if available, be exempt from process vent controls or the entire NESHAP. An alternative standard may be approved through the section 112(l) approval process if the State meets certain requirements as discussed in more detail in section V. This information includes diagrams; documentation of emission quantification; solvent mileage information; identification of maintenance and monitoring requirements to ensure proper operation; an explanation of why the data regarding emission control is accurate and representative of both short and long term performance; an explanation of why the information supplied can be extrapolated to dry cleaning systems other than the specific systems examined; and documentation of cross-media (water, solid waste) impacts. Upon approval, the Administrator will publish a notice in the **Federal Register.**

Dry cleaners subject to today's rule should be aware of a separate rule known as the "general provisions." The general provisions, which were proposed in the **Federal Register** on August 11, 1993 (58 FR 42760), are generic requirements that sources subject to section 112 standards must meet. Among other things, the proposed general provisions rule contains a procedure for existing sources to apply for a one-year compliance extension, preconstruction review requirements for major sources, and definitions of terms that will be used in many or all section 112 standards. The EPA currently plans to promulgate the final general provisions in March 1994.

B. Selection of Basis of Standards for New and Existing Sources—Selection of MACT or GACT

As prescribed by section 112(c)(1), the promulgation of these standards was preceded by the development and publication of a list with all the categories and subcategories of major and area sources emitting any of the HAP's listed in section 112(b) of the Act. An initial list of such categories (required under section 112(c)(1)) was published in the **Federal Register** on July 16, 1992 (57 FR 31576). Three perchloroethylene dry cleaning major source categories were included on this list: (1) Commercial dry cleaning (perchloroethylene)—transfer machines; (2) industrial dry cleaning (perchloroethylene)—transfer machines; and (3) industrial dry cleaning (perchloroethylene)—dry-to-dry machines. Two dry cleaning area source categories were included on this list: (1) Commercial dry cleaning (perchloroethylene)—transfer machines; and (2) commercial dry cleaning

(perchloroethylene)—dry-to-dry machines. The Administrator found that these categories present "a threat of adverse effects to human health or the environment."

As described above, the dry cleaning industry subject to the NESHAP is subcategorized into major and area source dry cleaners. The dry cleaning industry is also subcategorized into industrial and commercial sectors. All industrial dry cleaners are major sources. Commercial dry cleaners can be either major or area sources. The dry cleaning industry is further subcategorized into dry-to-dry and transfer machines. Although two subcategories of coin-operation dry-to-dry machines (plant and self-service) were included in the preliminary source category list published June 21, 1991 (56 FR 28548), these two subcategories were deleted from the final source category list published July 16, 1992 (57 FR 31576). These two subcategories are exempt from this final NESHAP.

There were no differences in the types of control technologies identified for the subcategories of industrial and commercial dry cleaners; however, differences in control technologies were identified between major and area sources, and dry-to-dry and transfer machines. These differences were used in determining the requirements of the NESHAP.

The rule requires new and existing dry-to-dry machines, and transfer machine dryers, that are controlled with refrigerated condensers to be closed-loop—in other words, the gas-vapor mixture within the machine cannot be vented to the atmosphere while the dry cleaning machine drum is rotating. Although the refrigerated condenser can be external or internal, the gas-vapor stream must be routed back to (or contained within) the machine in a closed-loop configuration, without venting to the atmosphere. This ensures that the gas-vapor stream passes multiple times through the refrigerated condenser and that high control efficiency can be achieved. The EPA wishes to emphasize that the rule does not prohibit fan-and-vent systems which operate when the machine door is open to reduce worker exposure to PCE vapors left inside the drum at the end of the drying cycle.

The selection of the standards for this NESHAP based upon the subcategorization of the dry cleaning industry discussed above is summarized as follows.

1. Major Sources

Section 112 of the Act defines a major source as any stationary source that emits 9.1 Mg/yr (10 tpy) or more of any one HAP or 22.7 Mg/yr (25 tpy) or more of total HAP's. The Act states that new major sources must achieve the MACT, which is the level of emission control already achieved in practice by the best controlled similar source. The Act further states that emission standards promulgated for existing major sources may be less stringent than standards for new sources; however, standards for existing major sources must not be less stringent than the average level of emission reduction achieved by the average of the best performing 12 percent of the existing major sources.

For new major dry cleaning facilities, the only significant factor for determining similarity in sources is the type of machine used. Two basic types of machines are used in the dry cleaning industry: Dry-to-dry machines and transfer machines. For dry-to-dry machines, it has been demonstrated that the maximum degree of PCE emission reduction from machine vents and exhausts can be achieved by installing a refrigerated condenser.

At proposal, the EPA believed the performance of carbon adsorbers to be equal to that of refrigerated condensers when used to control emissions from dry-to-dry machines, and proposed to allow major source dry-to-dry machines to install either control device. Following proposal, however, new information was provided to the EPA from a survey of dry cleaners in California, which disputes these conclusions. A more detailed discussion of this finding is presented in section V.B.

The use of a refrigerated condenser and small carbon adsorber together is considered MACT for new source dry-to-dry machines. At present, both of these control devices are used widely in the dry cleaning industry. They are readily available and economically feasible as methods of control.

The emissions remaining in a conventional dry-to-dry machine, controlled with a refrigerated condenser, at the end of the dry cleaning cycle can be further controlled by drawing the air remaining in the machine through a small carbon adsorber either before the door to the machine is opened or venting the air through a carbon adsorber to the atmosphere as the door is opened. Information was made available to the EPA after proposal indicating that several conventional vented dry-to-dry machines equipped with refrigerated condensers currently operate in this manner (i.e., the air remaining in the machine at the end of the dry cleaning cycle is vented to a carbon adsorber as the door to the machine is opened).

Use of a carbon adsorber for process vent control represents the MACT floor for existing dry-to-dry machines because this is the average level of emission reduction achieved by the best-performing 12 percent of existing major sources. In considering whether to require controls above this floor, EPA distinguished between classes of machines. As noted earlier, the maximum achievable control technology for existing uncontrolled dry-to-dry machines is refrigerated condensers. However, MACT for existing dry-to-dry machines equipped prior to promulgation with carbon adsorbers is either a refrigerated condenser or a carbon adsorber. The final rule does not require the replacement of these carbon adsorbers with refrigerated condensers. The Administrator could not conclude, based on currently available information, that requiring replacement of a well-operated carbon adsorber with a refrigerated condenser was justified.

For transfer machine systems located at a major source, the NESHAP must be based on MACT. The Act states that MACT for new sources must be no less stringent than the best controlled similar source. The MACT may be more stringent, however, if the Administrator believes the balance between the additional economic, energy, and environmental impacts of a more stringent requirement is reasonable. A transfer machine system with a refrigerated condenser and a room enclosure represents the best controlled similar source. The only option more stringent than a transfer machine system with a room enclosure is a new dry-to-dry machine.

Dry-to-dry machines provide complete control of clothing transfer emissions (i.e., emissions released by transfer of clothing from the washer to the dryer of a transfer machine system). Dry-to-dry machines eliminate these emissions by eliminating the need to transfer clothing from a washer to a dryer (achieving 100 percent reduction of clothing transfer emissions).

The MACT for new transfer machine systems located at a major source is based upon the use of dry-to-dry machines, thereby requiring new major source transfer machine systems to eliminate all emissions from clothing transfer between the washer and the dryer. Such a requirement effectively bans or prohibits new transfer machine systems because no technology has been identified to date (including the use of hamper enclosures or room enclosures) that could be added to a new transfer

machine system to totally eliminate all PCE emissions from clothing transfer. A more detailed discussion of this finding is presented in section V.B.

For existing major source transfer machine systems, it has been demonstrated that the maximum degree of PCE emission reduction from machine vents and exhausts can be achieved by installing a refrigerated condenser. At proposal, the EPA believed carbon adsorbers outperformed refrigerated condensers on transfer machine systems and proposed to require carbon adsorbers on uncontrolled transfer machine systems. Following proposal, however, new information was provided to the EPA from a survey of dry cleaners in California, which disputes these conclusions. A more detailed discussion of this finding is presented in section V.B.

Use of a carbon adsorber for process vent control represents the MACT floor for existing transfer machines because this is the average level of emission reduction achieved by the best-performing 12 percent of existing major sources. In considering whether to require controls above this floor, the EPA distinguished between classes of machines. As noted earlier, the maximum achievable control technology for existing uncontrolled transfer machines is refrigerated condensers. However, MACT for existing transfer machines equipped prior to promulgation with carbon adsorbers is either a refrigerated condenser or a carbon adsorber. The final rule does not require the replacement of these carbon adsorbers with refrigerated condensers. The Administrator could not conclude, based on currently available information, that requiring replacement of a well-operated carbon adsorber with a refrigerated condenser was justified. Room enclosures capture and vent the fugitive PCE emissions from clothing transfer between the washer and the dryer at transfer machine systems to a carbon adsorber. Since clothing transfer emissions are a significant portion of overall transfer machine system emissions, control of these through a room enclosure would achieve additional emission reductions. Section V provides a more detailed discussion of these control devices.

Based on the results of further analysis, it was considered reasonable to go beyond the floor to require room enclosures for fugitive emission control in addition to refrigerated condensers for process vent control for transfer machine systems located at a major source.

2. Area Sources

Section 112 of the Act defines an area source as any stationary source of HAP's that is not a major source. Based on this definition, a dry cleaning facility that emits less than 9.1 Mg/yr (10 tpy) of any one HAP would be considered an area source. In section 112(d)(5), the Act further states that the Administrator may elect to promulgate a standard based on GACT or management practices to control HAP emissions from area sources instead of applying the MACT.

Section 112(c)(3) requires a "finding" of a threat of adverse effects to human health or the environment (by such sources individually or in the aggregate warranting regulation) in order to regulate area sources under NESHAP. The large number of area source dry cleaning facilities nationwide emit, in aggregate, a significant amount of PCE emissions and, therefore, have the potential to have an adverse effect on health and the environment.

Unlike MACT, no stringency "floor" is required for GACT; and costs, economic impacts, and the technical capabilities of dry cleaning facility owners and operators to operate emission control equipment may be considered in determining GACT. For the most part, the technology used to achieve the level of emission control determined to achieve MACT is also used widely by area source dry cleaning facilities and could be considered GACT.

The GACT approach can be less stringent than MACT and can consider costs and economic impacts. At proposal, GACT for all area sources, except for existing refrigerated condenser controlled transfer machines was determined to be the use of either a refrigerated condenser or a carbon adsorber. Subsequent to proposal, the EPA learned that carbon adsorbers may not be operated as well as refrigerated condensers. Based on this finding, all new and existing uncontrolled area sources are required to install refrigerated condensers for process vent control. However, the Administrator determined that, based on existing information, a requirement to replace existing carbon adsorbers with refrigerated condensers is not justified at this time. No new transfer machines are allowed. These requirements were determined to be reasonable for area sources and are identical to MACT requirements. The EPA determined that the economic impacts of requiring the owner or operator of a new area source dry-to-dry machine to install a supplemental carbon adsorber to control PCE emissions in the dry cleaning machine drum is not reasonable. Further, the Administrator determined that the economic impacts of requiring the owner or operator of an existing area source transfer machine system to install a room enclosure to capture transfer emissions are unreasonable. Additional discussion of these findings is presented in section V.

Therefore, GACT for area sources would be identical to MACT for major sources except that the owner or operator of a new dry-to dry machine would not be required to install a supplemental carbon adsorber and the owner or operator of an existing transfer machine system would not be required to install a room enclosure.

C. Selection of Format for the Final Rule

1. Equipment Exhausts and Vents.

Emission standards for controlling PCE allow for some flexibility in complying with the standards because any control technique may be used if it achieves the level of emission reduction represented by the standards. An emission limitation format could be a concentration limit, a percent reduction level, or a mass emission rate limit.

Both the concentration limit and the percent reduction level would require periodic performance testing by the owner or operator to demonstrate that the dry cleaning facility is achieving compliance. Because the cost of requiring an owner to conduct even a single periodic performance test is expensive ($3,000 to $5,000) compared to the cost of control equipment ($6,000 to $8,000), it would be economically unreasonable to require either of these two emission limit formats for these standards.

A mass emission limit format would place a limit on the total consumption of HAP per unit of articles cleaned, also known as "solvent mileage." Some members of the dry cleaning industry use the "solvent mileage," method to compute the pounds of articles that can be cleaned per drum of solvent. To determine "solvent mileage," a record of gallons of solvent bought and amount of clothes cleaned would have to be kept. However, the amount of recordkeeping necessary to compute solvent mileage to comply with this type of format (such as weighing each load of clothes prior to cleaning and tracking the amount of solvent consumed) would be burdensome for a small facility owner or operator.

In addition to being impractical and an economic burden on dry cleaner owners or operators to measure emissions or to compute solvent mileage

for these sources, it would be difficult to enforce emission standards at several thousand dry cleaning facilities across the country, ensuring that each dry cleaner is achieving the emission standards. For these reasons, as authorized under section 112(h), an equipment standard requiring the use of a refrigerated condenser, or an equivalent control device was selected to limit emissions from these sources.

2. Equipment Leaks.

Based on dry cleaning machine test data, as much as 25 percent of the PCE emissions from an uncontrolled dry cleaning facility can be attributed to leaks from the dry cleaning equipment. Two possible formats for a standard to control these leaks are an emission limit standard or a work practice standard under section 112(h).

To require an emission limit for a leak standard, the leak sources would need to be enclosed so that the actual emission rate could be measured. Because this procedure would be impractical on the many potential leak sources on dry cleaning equipment, an emission limit format is not the preferred format for leaks.

Because control of fugitive equipment leaks requires maintenance of the dry cleaning equipment, the EPA is proposing a work practice with a program to detect and repair leaks as the logical format. The work practice would specify the inspection time intervals and an inspection method to locate the leaks, and would limit the time period allowed to perform the required maintenance and repairs. The proposed inspection method requires only a quantitative determination of the presence of a leak (i.e., visual or use of a portable halogenated-hydrocarbon detector). Although the effectiveness of this work practice cannot be quantified precisely, the EPA believes it would result in a substantial reduction of fugitive emissions. The work practice format has been selected for the proposed equipment leak standard because less time is required for demonstrating compliance, and the recordkeeping and economic impacts associated with this format are not burdensome.

D. Summary of Changes Since Proposal

Since proposal, several changes have been made to the regulation. The changes affect new and existing dry cleaning machines located at major and area sources. At proposal, owners or operators of new dry-to-dry machines located at major or area sources were given a choice of installing carbon adsorbers or refrigerated condensers as process vent control. At promulgation, all new dry cleaning machines located at major or area sources are required to install refrigerated condensers.

The owner or operator of a new dry-to-dry machine located at a major source is also required to install a carbon adsorber to control the PCE emissions remaining in the dry cleaning machine drum at the end of the dry cleaning cycle.

At proposal, new transfer machine systems were allowed and control requirements for these systems were specified. At promulgation, new transfer machine systems are prohibited through a regulatory requirement prohibiting PCE emissions from clothing transfer between the washer and the dryer. This requirement cannot be met by new transfer machine systems even if these systems are enclosed in room enclosures.

At proposal, existing uncontrolled dry-to-dry machines located at major or area sources were given a choice of installing carbon adsorbers or refrigerated condensers as process vent control. Existing uncontrolled transfer machine systems located at area sources were required to install carbon adsorbers. At promulgation, existing uncontrolled dry-to-dry machines and transfer machine systems are required to install refrigerated condensers. Existing controlled machines that already have a carbon adsorber, however, are not required to install a refrigerated condenser for process vent control.

At proposal, existing uncontrolled transfer machine systems located at major sources were required to install carbon adsorbers. At promulgation, existing uncontrolled transfer machine systems located at major sources are required to install refrigerated condensers as process vent control. Existing controlled transfer machine systems at major sources that already have a carbon adsorber, however, are not required to install a refrigerated condenser for process vent control. For control of fugitive emissions, all existing transfer machine systems located at major sources must be enclosed within a room enclosure that exhausts to a carbon adsorber.

At proposal, the low solvent consumption exemption for process vent control at area sources was 220 gallons of PCE per year for a dry-to-dry machine and 300 gallons of PCE per year for a transfer machine system. At promulgation, the low solvent consumption exemption for process vent control has been lowered and now applies to the total PCE solvent consumption of all machines at the dry cleaning facility rather than on a per machine basis. At promulgation, the low solvent consumption exemption for process vent control is 140 gallons of PCE per year for a dry cleaning facility with only dry-to-dry machines or both dry-to-dry machines and transfer machine systems, and 200 gallons of PCE per year for a dry cleaning facility with only transfer machines systems.

The levels of PCE consumption distinguishing major from area sources have been lowered from the proposed levels and now apply to the total PCE consumption of all machines at the facility rather than on a per machine basis. The levels of PCE consumption distinguishing a major source from an area source are 2,100 gallons of PCE per year for a source with only dry-to-dry machines, and 1,800 gallons of PCE per year for a source with only transfer machine systems or both dry-to-dry machines and transfer machine systems. To track PCE consumption, the owner or operator of any dry cleaning facility subject to this rule is required on the first day of each month to compute an annual PCE consumption by summing PCE purchases over the previous 12 months.

At proposal, pollution prevention practices (such as leak detection and repair) were required only for those dry cleaning machines above the low solvent consumption exemption for process vent control. At promulgation, all PCE dry cleaning facilities must implement pollution prevention practices and operate their dry cleaning equipment according to the manufacturer's specifications.

There were no monitoring requirements included at proposal. The promulgated standards now require periodic monitoring of process vent control equipment. When operating a refrigerated condenser on a dry-to-dry machine, a transfer machine system dryer, or a reclaimer, the temperature on the outlet side of the refrigerated condenser must be measured and recorded once per week. When operating a refrigerated condenser on a transfer machine system washer, the difference between the inlet and outlet temperatures of the exhaust from the washer as it passes through the refrigerated condenser must be measured and recorded once per week.

When operating an existing carbon adsorber to control process vent emissions, a colorimetric detector tube must be used to measure and record the PCE level in the carbon adsorber exhaust once per week. Periodic desorption for carbon adsorbers is no longer specifically required. Instead, the owner or operator must follow the

manufacturer's specifications for the proper operation of a carbon adsorber.

The proposed rule would have required compliance within 18 months of publication of the final rule for existing dry cleaning machines with a design capacity larger than 22.7 kilograms (50 lbs). The compliance deadline for smaller machines would have been 36 months from promulgation. The final rule requires each existing dry cleaning system to be in compliance within 36 months of publication of the final rule, except that compliance with pollution prevention requirements and recordkeeping and reporting requirements is required starting 90 days after the rule's publication.

Section 112(i) of the Clean Air Act requires the EPA to set compliance dates for existing sources that provide for compliance as expeditiously as practicable, and no later than 3 years after promulgation of the final rule (with certain exceptions). As explained in the background information document cited at the beginning of this notice, the EPA is allowing 36 months for control technology to be installed on all dry cleaning machines because of questions about the market availability of an adequate supply of refrigerated condensers. On the other hand, the EPA has concluded that the pollution prevention requirements of the rule do not require significant capital expenditures and are feasible for dry cleaners to implement within 90 days. These requirements consist of "good housekeeping" practices such as inspecting for leaks and keeping the machine door closed during operation. The earlier compliance date in the final rule will result in earlier emissions reductions.

The 90-day applicability date for recordkeeping and reporting requirements will enhance the enforceability and effectiveness of the rule. One reason is that the applicability of control technology requirements in the rule depends on a facility's solvent consumption over a 12-month period. If documentation of a facility's solvent consumption was not required until 3 years after promulgation, it would be impossible to determine reliably which control technology requirements apply to a dry cleaning facility. Second, requiring an initial report from existing sources within 90 days will encourage these sources to begin planning for compliance with the rule's control technology requirements at an early date. This requirement also will provide regulatory agencies with information about regulated facilities in time to promote and monitor compliance effectively.

E. Potential to Emit

The annual major-source consumption levels (8,000 liters (2,100 gallons) per year for dry-to-dry machines and 6,800 liters (1,800 gallons) per year for transfer machine systems) represent the EPA's determination of the volumes of PCE that are used and consumed by the two different types of machine in order to emit 10 tons of PCE per year. Because it is not economically and technically feasible to precisely monitor and measure yearly PCE emissions at each of the dry cleaning facilities affected by this rule, PCE consumption is an appropriate surrogate measure. The EPA has found that PCE emissions to ambient air are closely and predictably related to the volume of PCE used and consumed in the dry cleaning process. Accordingly, this rule does not require each dry cleaning facility to test and calculate the maximum annual rate of PCE stack and fugitive emissions for each particular dry cleaning machine regulated under this rule. Instead, the consumption level assigned to each type of dry cleaning machine determines whether a facility is a major source (that is, whether it emits or has the potential to emit 10 tons or more of PCE).

The consumption levels differ between dry-to-dry (8,000 liters) and transfer machine systems (6,800 liters) because the use of a dry-to-dry machine results in lower fugitive emissions than the use of a transfer machine system. Stated another way, a dry-to-dry machine is more efficient in its use of PCE from an air emission perspective. This higher efficiency means that for each liter of PCE used for dry cleaning, a dry-to-dry machine emits less PCE to the ambient air than a transfer machine system. Accordingly, a dry-to-dry machine can use or consume a greater volume of PCE than a transfer machine system before emitting 10 tons or more of PCE to the ambient air. Amounts of PCE used and consumed in dry cleaning processes but not emitted to the ambient air at a dry cleaning facility include amounts of PCE transferred offsite as solid waste in used filters and spent carbon, amounts transferred to wastewater streams, and amounts that remain in cleaned clothing at the time of customer pickup.

The major source consumption levels established in the final rule differ from the major source consumption levels in the proposed dry cleaning rule of December 9, 1991. The proposed major source PCE consumption levels were 11,700 liters (3,100 gallons) for dry-to-dry machines, and 7,600 liters (2,000 gallons) for transfer machine systems. The difference is due to the EPA's determination that the major source consumption levels for PCE established in the final rule (8,000 liters or 2,100 gallons for dry-to-dry machines and 6,800 liters or 1,800 gallons for transfer machine systems) more accurately reflect the volume of PCE that each type of machine uses or consumes in emitting 10 tons of PCE.

Under the rule, a dry cleaning facility will be classified as a major or area source in the following manner. As previously mentioned, a facility has the potential to emit more than 10 tons of PCE only if its solvent consumption exceeds the rule's solvent use cut-off levels that divide major sources from area sources. The owner or operator must certify to the regulating agency whether or not the facility's solvent consumption will exceed the cut-off level. If solvent consumption is greater than or equal to this cut-off level, the facility is to be considered a major source and must comply with all major sources requirements. If solvent consumption is less than the cut-off level, the facility is considered an area source.

If a facility is found to be an area source, the next determination is whether or not the facility must install area-source technology controls. To be exempt from technology controls, the facility's certification must guarantee that solvent use is less than the low-solvent-use exemption level. Otherwise, area-source control technology requirements apply to the facility.

The rule's requirements are intended to ensure that all dry cleaning facilities that have the potential to emit 10 tons of PCE considering controls are regulated as major sources. If regulated as an area source, a facility will be required to observe the limit on solvent consumption to which it certified, as well as meet other requirements for area sources. These are Federally enforceable requirements that will prevent area sources from emitting more than 10 tons of PCE in a year. After its compliance date, if an area source wishes to increase operations or add a dry cleaning machine, and the result would be to increase solvent consumption above the major-source cutoff level, the facility must first comply with the rule's requirements for major sources. Failure to do so would result in a violation of the rule.

In this rule, the EPA is not establishing any precedents or policies concerning the determination of a facility's "potential to emit" or its classification as a major or area source

under section 112. The EPA believes it would be unwise and inappropriate to resolve these complex issues solely in the context of the PCE dry cleaning NESHAP because the result could create numerous unforeseen problems and inequities in regulation of other categories of sources. The EPA is considering these issues in a comprehensive fashion in light of the broad range of sources for which NESHAP will be developed. The EPA is presently continuing to consider these issues and will take whatever appropriate actions that are necessary to resolve them.

III. Summary of Environmental, Energy, and Economic Impacts

A. Affected Facilities

The number of new and existing machines in 1996 (5 years from the date of proposal) were projected in order to calculate the 5-year impacts of the standards. Industry estimates indicate a zero growth rate for commercial dry cleaning facilities. For this reason, the only new facilities projected to be constructed during the 5 years following the date of proposal (between 1991 and 1996) are an estimated 7,700 new commercial facilities which replace those that retire. Industrial dry cleaning facilities are declining because many of these facilities are switching from the use of PCE to the use of water to wash linens and uniforms. For this reason, no new industrial facilities are projected between 1991 and 1996. Approximately 28 industrial facilities would retire during this period.

In 1996, based on the estimates of machine retirement, approximately 17,400 existing commercial and industrial facilities will be subject to the standards. Taking into account the low solvent consumption exemption levels for existing area sources, approximately 9,700 of these existing facilities would be required to install process vent control devices. Of these facilities, however, approximately 6,500 are expected to decide to install process vent control devices to comply with State or local regulations. Thus, in 1996 approximately 3,200 existing facilities are estimated to have to install process vent control devices solely to comply with the standards promulgated today.

As mentioned above, between 1991 and 1996, 7,700 new facilities are projected. All of these facilities are required to install process vent controls. Of these new facilities, approximately 7,300 are expected to decide to install process vent control devices to comply with State or local regulations. Thus, in 1996 approximately 400 new facilities are estimated to install process vent control devices solely to comply with the standards promulgated today.

The following discussion presents the projected environmental, energy, and economic impacts for 1996 based on the estimated 3,200 existing and 400 new facilities that would be required to install process vent control devices solely to comply with the standards promulgated today.

B. Air Impacts

In 1996, the standards are expected to reduce nationwide emissions of PCE from existing dry cleaning facilities by a maximum of some 5,500 Mg (6,000 tons) from process vent control and some 18,000 Mg (19,800 tons) from leak detection and repair. This emission reduction is based on projected nationwide PCE emissions from existing facilities in 1996 of 42,000 Mg (46,500 tons) in the absence of the standards. This emission reduction corresponds to approximately 44 percent of the total PCE emissions from all existing dry cleaning facilities. This reduction is in addition to reductions achieved by controls already in place in many of these facilities, and reductions anticipated in the absence of the NESHAP.

In 1996, the standards are expected to reduce nationwide emissions from new dry cleaning facilities by a maximum of some 1,100 Mg (1,200 tons) from process vent control and some 7,800 Mg (8,600 tons) from leak detection and repair. This emission reduction is based on projected nationwide PCE emissions in 1996 of 15,800 Mg (17,400 tons) from new dry cleaning facilities in the absence of the standards. This emission reduction corresponds to about 43 percent of the total PCE emissions from all new dry cleaning facilities.

In 1996, annual emissions of PCE from a typical new or existing dry cleaning facility located at an area source with annual receipts of $200,000 operating a typical size dry-to-dry machine with capacity of 15.9 kilograms (kg) (35 pounds (lb)) controlled with a refrigerated condenser are projected to be 0.77 Mg (0.85 tons) from process vent control and 0.8 Mg (0.88 tons) from leak detection and repair. This represents greater than 50-percent reduction in emissions from an uncontrolled dry-to-dry machine of this same size and receipt level.

C. Water, Solid Waste, Noise, and Radiation Impacts

The requirement for use of refrigerated condensers minimizes the impact on water quality resulting from the standards. The projected impact on water quality results from the PCE contained in aqueous wastes generated by the control devices. When using a refrigerated condenser, a small amount of PCE is generated and collected in the separator water. A typical refrigerated condenser controlled dry-to-dry machine is estimated to generate about 0.03 kg (0.07 lb) of PCE in wastewater per year. Owners or operators of all new dry cleaning machines and those existing uncontrolled dry cleaning machines that are above the low solvent consumption exemption levels would be required to install refrigerated condensers.

When using a carbon adsorber, PCE is collected in the steam condensate generated during desorption of the carbon. A typical existing dry-to-dry machine with an existing carbon adsorber is estimated to generate 0.85 kg (1.9 lb) of PCE in wastewater per year. However, only owners or operators of existing dry cleaning machines with existing carbon adsorbers installed prior to the date of promulgation would be allowed to continue to use a carbon adsorber as primary process vent control.

In addition to process vent control, owners or operators of existing transfer machine systems located at major sources would be required to install a room enclosure with a carbon adsorber. A carbon adsorber on the room enclosure is estimated to be approximately one-third the size of a typical carbon adsorber used to control process vent emissions. A typical transfer machine system located at a major source with a carbon adsorber on the room enclosure is estimated to generate 0.28 kg (0.60 lb) of PCE in wastewater per year. This amount is in addition to the 0.85 kg (1.9 lb) of PCE in wastewater generated if the transfer machine system has a carbon adsorber controlled process vent.

Owners or operators of new dry-to-dry machines at major sources would be required to install a carbon adsorber to control the PCE remaining in the dry cleaning machine drum at the end of the dry cleaning cycle. This carbon adsorber is also estimated to be approximately one-third the size of a typical carbon adsorber used to control process vent emissions. A typical dry-to-dry machine with a refrigerated condenser controlled process vent and a carbon adsorber to control the PCE emissions remaining in the machine drum is expected to generate about 0.31 kg (0.68 lb) of PCE in wastewater per year.

It is projected that the total amount of PCE in wastewater generated on a national basis by dry cleaning facilities in the absence of the standards in 1996

would be 5.9 Mg (6.5 tons). With the standards, the amount of PCE in wastewater generated on a national basis by dry cleaning facilities is projected to be about 6.1 Mg (6.7 tons) in 1996, an increase of about 0.2 Mg (0.2 ton) per year (corresponding to an increase of about 3 percent).

The solid waste impact of the standards is considered minimal. The main types of solid waste generated from controlled dry cleaning machines are spent carbon from carbon adsorbers, spent carbon from cartridge filters, solvent sludge (muck), and still bottoms. Neither a carbon adsorber nor a refrigerated condenser would affect muck, still bottom, or cartridge filter carbon generation, so no impact due to the control alternatives was calculated for these waste types.

Periodic replacement of the carbon bed associated with a carbon adsorber is necessary to maintain the performance of a carbon adsorber in controlling PCE emissions. According to carbon vendors, the carbon is likely to need replacement approximately every 5 years.

For a typical 15.9 kg (35 lb) existing area source dry-to-dry machine controlled with an existing carbon adsorber installed prior to today's date, the amount of solid waste generated from spent carbon is estimated to be approximately 25 kg (55 lb) per year. For a typical 113 kg (250 lb) existing major source dry-to-dry machine controlled with an existing carbon adsorber, the amount is estimated to be approximately 90 kg (198 lb) per year. These are the same amounts that would be generated in the absence of the standards.

New major source dry-to-dry machines with refrigerated condenser and carbon adsorber control would also require periodic replacement of the carbon bed. For a typical major source dry-to-dry machine with both refrigerated condenser and carbon adsorber control, the amount of solid waste generated from spent carbon is estimated to be approximately 8.4 kg (19 lb) per year.

Existing major source transfer machine systems with carbon adsorbers on their room enclosures would also require periodic replacement of the carbon bed. For a typical major source transfer machine system with refrigerated condenser process vent control and carbon adsorber control on the room enclosure, the amount of solid waste generated from spent carbon is estimated to be about 8.4 kg (19 lb) per year. For a typical major source existing transfer machine system with carbon adsorber process vent control and carbon adsorber control on the room enclosure, the amount of solid waste generated from spent carbon is estimated to be about 98 kg (217 lb) per year.

It is projected that the amount of carbon discarded every 5 years in the absence of the standards would be 880 Mg (970 tons) or an average of 175 Mg (193 tons) per year. With the standards, the amount of carbon discarded on a national basis every 5 years would be 890 Mg (980 tons) or an average of 177 Mg (195 tons) per year. This corresponds to an increase in national solid waste impacts from both new and existing dry cleaning facilities of about 10 Mg (10 tons) of carbon discarded approximately every 5 years, or an average of about 2 Mg (2 tons) of carbon every year (corresponding to an increase of about 1 percent).

There are no noise or radiation impacts associated with these standards.

D. Energy Impacts

The energy impacts resulting from the standards on a nationwide basis are considered minimal. Electricity is required for cooling the coils of the refrigerated condenser and for operating fans and generating steam for desorbing existing carbon adsorbers. The total increase in annual electricity use for existing dry cleaning facilities in 1996 resulting from the standards would be about 2,454,500 kilowatt-hours per year (KW-hr/yr) (390,000 British thermal units per year (Btu/yr)). The total increase in annual electricity use for new dry cleaning facilities in 1996 resulting from the standards would be about 276,600 KW-hr/yr (44,000 Btu/yr). The total increase in annual electricity use for all facilities nationwide would be about 2,731,100 KW-hr/yr (430,000 Btu/yr).

This increase in electricity requirement is equivalent to about 700,000 liters (3,400 barrels (bbl)) of fuel oil per year for electricity generation for existing facilities and about 79,000 liters (380 bbl) of fuel oil per year for new facilities. The total increase for all facilities would be about 780,000 liters (3,800 bbl) of fuel oil per year, corresponding to an increase of 0.7 percent.

By installing a refrigerated condenser as required by the standards, the electricity requirement for a typical uncontrolled dry cleaning facility with one 15.9 kg (35 lb) dry-to-dry machine is expected to increase by about 600 KW-hr/yr (95 Btu/yr) in 1996.

E. Cost Impacts

The nationwide cumulative 5-year capital costs in 1996 of complying with the standards would be about $35 million. The cumulative 5-year capital costs for existing facilities would be about $32 million and about $3 million for new facilities.

The total nationwide annualized costs in 1996 of complying with the standards for process vents would be about $9 million. This estimate does not include credit for solvent savings. If a credit for solvent savings is included, the total nationwide annualized cost is about $4 million. The annualized costs in 1996 including a credit for solvent savings for existing facilities complying with the standards would be about $3.4 million, and about $0.5 million for new facilities.

The total nationwide annualized costs in 1996 for both new and existing facilities complying with the standards for pollution prevention, leak detection and repair, monitoring, reporting and recordkeeping would be about $10 million. This estimate does not include credit for solvent savings. If a credit for solvent savings is included in this estimate, these facilities would have a total annual cost savings of $7.6 million.

For a typical new area source facility with annual receipts of $200,000 with a 15.9 kg (35 lb) dry-to-dry machine, the capital cost of a refrigerated condenser is $6,300, and the resulting annualized cost of this process vent control is $1,000. The resulting annualized cost for the above typical new area source to perform pollution prevention, leak detection and repair, monitoring, reporting, and recordkeeping is about $460. This estimate does not reflect credit received from solvent savings. If a credit for solvent savings is included, this typical facility would have a total cost of about $350.

F. Economic Impacts

The economic impact assessment includes a market component and a financial component. The market component focuses on the adjustment of market prices and quantity of dry cleaning as a result of complying with the standards. The financial component focuses on the ability of firms to obtain the money to buy the control equipment.

The upward price adjustments are projected to range between 0.15 and 2.3 percent in various markets, with the largest increases being found in small rural markets. The downward adjustment in total dry cleaning is projected to be about 0.5 percent. If the whole quantity adjustment were translated into closures rather than reduction in output at many cleaners, the net closures would be projected to be just under 260.

The financial analysis indicates that firms in below-average financial condition may face difficulty in obtaining the required funds to purchase control equipment from traditional loan sources such as banks. The analysis projects between 0 and 830 firms will be in this category. These firms will either obtain other financing (vendor-aided, relatives, personal assets, etc.), close, or sell their firm.

The environmental, energy, and economic impacts are discussed in greater detail in the BID's and the economic impact analyses for the proposed and promulgated standards: "Dry Cleaning Facilities—Background Information for Promulgated Standards," EPA–450/3–91–020b; "Dry Cleaning Facilities—Background Information for Proposed Standards," EPA–450/3–91–020a; "Economic Impact of Regulatory Controls in the Dry Cleaning Industry," EPA–450/3–91–021; and "Economic Impact of Regulatory Controls in the Dry Cleaning Industry," EPA–450/3–91–021b. Additional information on impacts is found in supporting information for the notice of availability of new information, "Information Package on Transfer Enclosures," (Docket No. A–88–11, Item No. IV–M–1).

In addition to the economic impact analysis, the cost effectiveness of alternative standards was also evaluated to determine the least costly way to reduce emissions and to ensure that the controls required by this rule are reasonable relative to other regulations. In this case, the promulgated standards would reduce the PCE dry cleaner's operating costs and produce an average 5-year total cost effectiveness of $550 per Mg ($500 per ton) of PCE emissions reduced. Additional details on costs can be found in the BID's.

IV. Public Participation

Prior to proposal of the standards, interested parties were advised by public notice in the **Federal Register** (56 FR 1186), January 11, 1991, of a meeting of the National Air Pollution Control Techniques Advisory Committee to discuss the NESHAP being developed for the PCE dry cleaning industry. This meeting was held on January 30, 1991. The meeting was open to the public and each attendee was given an opportunity to comment on the NESHAP recommended for proposal.

The standards were proposed and published in the **Federal Register** on December 9, 1991 (56 FR 64382). The preamble to the proposed standards discussed the availability of the BID and the economic impact analysis: "Dry Cleaning Facilities Background Information for Proposed Standards, EPA–450/3–91–020a" and "Economic Impact of Regulatory Controls in the Dry Cleaning Industry EPA–450/3–91–021," which described in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal, and copies of the BID were distributed to interested parties.

As a result of public comments received on the proposed standards, additional information became available about transfer enclosures used to control PCE emissions during the transfer step for transfer machine systems. A notice of availability of new information was published in the **Federal Register** on October 1, 1992, describing this information and requesting public comments.

Because no persons requested the opportunity for oral presentation of data, views, or arguments concerning either the proposed NESHAP or the notice of availability of new information, a public hearing was not held.

The public comment period for the proposal NESHAP was from December 9, 1991, to February 9, 1992. A total of 32 comment letters were received in response to the proposed NESHAP. The public comment period was reopened for the notice of availability of new information from October 1, 1992, to November 2, 1992. A total of seven comment letters were received in response to the notice. All comments have been carefully considered and, where determined to be appropriate by the Administrator, changes have been made in the proposed standards.

V. Significant Comments and Changes to the Proposed Standards

Comments on the proposed NESHAP and the notice of availability of new information were received mainly from industry; State and local air pollution control agencies; trade associations; and environmental groups. A detailed discussion of these comments and responses can be found in the promulgation BID, which is referred to in the **ADDRESSES** section of this preamble. The summary of comments and responses in the BID serves as the basis for the revisions that have been made to the standards between proposal and promulgation. The major comments and responses are summarized in this preamble and, for ease of discussion, have been divided into the following areas:

A. Regulatory Approach

1. MACT vs. GACT
2. Collocation

B. Emission Control

1. Performance of Refrigerated Condensers and Carbon Adsorbers
2. Low Solvent Consumption Exemption Levels
3. MACT for New Dry-to-Dry Machines at Major Sources
4. Banning Transfer Machine Systems and Reclaimers
5. Room Enclosures on Transfer Machine Systems
6. Vapor Barriers
7. Dry Cleaning Ventilation Requirements

C. Monitoring and Equivalency

1. Monitoring Control Devices
2. Determining Equivalency
3. Delegation of Authority to Determine Equivalency

D. Other Issues and Follow-up to Today's Action

1. New York Study
2. California Well Investigation Program
3. Follow-up to Today's Action

A. Regulatory Approach

1. MACT vs. GACT

Several commenters remarked on the use of maximum achievable control technology (MACT) versus generally available control technology (GACT) for regulating dry cleaners. Most of these commenters believed that MACT should be used to regulate all dry cleaners. One commenter, however, believed that GACT was the appropriate basis of regulation.

The commenters who felt MACT should be applied to all dry cleaners argued that there is sufficient and compelling health effects information regarding PCE to warrant application of MACT to all dry cleaning machines regardless of type or size, and that section 112(c)(3), (i.e., a threat to human health and the environment by sources individually, or in the aggregate) warrants the application of MACT controls for all area source dry cleaners.

As stated in the proposal, the EPA has concluded that area source dry cleaners present a threat of adverse effects to health or the environment. For this reason, commercial dry cleaning facilities that are area sources were added to the list of source categories under section 112(c)(3) to be regulated under the Act. Listing an area source category under section 112(c)(3), however, does not require that regulations developed for this source category must be based on MACT. These regulations may be based on MACT or they may be based on GACT.

The EPA does not agree that the health effects information regarding PCE is so compelling that it warrants application of MACT to all small area source dry cleaners. There are a range of opinions in the scientific community as

to the potential for PCE to cause cancer in humans. Further, to the extent that PCE may be a human carcinogen, existing evidence indicates that its potency is relatively low.

During development of the regulation, the EPA concluded that many small area source dry cleaning facilities may experience adverse economic impacts as a result of imposing a regulation based on MACT. For this reason, the GACT approach was selected as the basis for regulating small area source dry cleaning facilities.

In commenting on the choice of GACT to regulate area source dry cleaners, several commenters acknowledged that section 112(k) of the Act outlines a comprehensive strategy to reduce HAP's from area sources. These commenters did not, however, believe that such a strategy would reduce PCE emissions sufficiently from area source dry cleaning facilities. Consequently, these commenters asserted that residual risk review should be required for all dry cleaners to ensure that public health is adequately protected. They argued that it is bad public policy to apply GACT to the vast majority of dry cleaning facilities, thus precluding a residual risk assessment at a later date. Based on knowledge gained on public exposure to PCE from dry cleaning facilities, they maintained that it is absolutely necessary that such a risk assessment be conducted for this source category.

Section 112(k) of the Act directs the EPA to develop a strategy to control HAP emissions from area sources in urban areas. The strategy, among other things, must achieve area source emissions reductions from the 30 HAP's that pose the greatest threat to public health and achieve at least a 75-percent reduction in cancer incidence from all stationary sources. Consequently, the need for emission controls beyond GACT at dry cleaners will be reconsidered in the context of the overall urban air strategy and the relative contribution of PCE emissions from dry cleaning facilities to urban exposures.

Although a residual risk analysis is required for sources regulated under MACT, those sources regulated under GACT may also receive a residual risk analysis. Section 112(f)(5) of the Act states that residual risk analysis is not required for area sources regulated under GACT. This section, however, does not preclude area sources from a residual risk analysis and, if warranted, the EPA will undertake a residual risk analysis for the area source dry cleaning source category.

The one commenter who agreed with the EPA's decision to use GACT to regulate small area source dry cleaners stated that much evidence exists in the Senate Committee report and the legislative history of the 1990 Clean Air Act Amendments to indicate that dry cleaning was considered an example of an area source category for which regulations based on GACT were appropriate.

2. Collocation

Commenters recommended that the criteria for determining a major source be based on the PCE solvent consumption of the entire dry cleaning facility instead of each dry cleaning machine. They mentioned that the definition of source used in the proposed NESHAP referred only to the consumption of PCE for an individual dry cleaning machine and that under this proposed definition only certain machines would be considered major sources. The commenters believe that the EPA should consider the total consumption of PCE from all machines located within a contiguous area under common control.

The final rule has been revised to base the applicability of the NESHAP on the total annual PCE consumption of all machines located at a dry cleaning facility. For the purpose of these standards, PCE consumption during any period is defined as the PCE purchased during that period. The definition of a major source in the Act includes sources "located within a common area and under common control." Because multiple units located at a single dry cleaning facility would be under common control, the applicability of this NESHAP for major sources has been revised to be consistent with the language of the Act.

B. Emission Control

1. Performance of Refrigerated Condensers and Carbon Adsorbers

At proposal, the EPA believed the performance of carbon adsorbers to be equal to that of refrigerated condensers when used to control emissions from dry-to-dry machines, and proposed to allow dry-to-dry machines to install either control device. In addition, the EPA believed carbon adsorbers outperformed refrigerated condensers on transfer machine systems and proposed to require carbon adsorbers on uncontrolled transfer machine systems. Following proposal, however, new information was provided to the EPA from a survey of dry cleaners in California, which disputes these conclusions.

In 1989, the California Air Resources Board (CARB) conducted a voluntary survey of all dry cleaners in California. The results of this survey indicate that dry cleaning machines controlled by refrigerated condensers achieve solvent mileages approximately twice as high as machines controlled by carbon adsorbers.

Solvent mileage is the ratio of clothes cleaned to the amount of solvent consumed. Although air emissions are only one of several factors that determine solvent mileage, significantly better solvent mileage is likely to be indicative of lower air emissions. Although the data do not provide detailed information on how well the carbon adsorbers were operated and maintained [for example, frequency of desorbing the carbon bed), the EPA believes this information indicates that refrigerated condensers will achieve lower air emissions in actual practice than carbon adsorbers.

Therefore, the final rule requires refrigerated condensers for new major and area source dry-to-dry machines. The EPA has also concluded that all existing uncontrolled dry-to-dry machines and transfer machine systems must install and operate refrigerated condensers.

The final rule does not require the replacement of existing carbon adsorbers with refrigerated condensers. The Administrator concluded, based on currently available information, that the replacement of well-operated carbon adsorbers with refrigerated condensers was not justified at this time.

These sources are largely small businesses and could face severe financial costs to replace these units. In addition, the final rule includes additional monitoring to ensure proper carbon adsorber operation. While replacement of well-operated carbon adsorbers with refrigerated condensers provides limited air benefits, EPA has recently obtained additional information that suggests that there may be other environmental impacts (for example, potential groundwater contamination and solid waste generation) associated with the use of carbon adsorbers over refrigerated condensers (see section V.D). At this time, those data are uncertain. EPA believes that these data and their implications deserve further consideration. A public meeting has been scheduled to discuss these issues. (See **ADDRESSES** section at the beginning of this preamble.) If appropriate, the EPA may revisit the requirements of this rule in the future.

2. Low Solvent Consumption Exemption Levels

Several commenters believed that although the economic impact of regulating small existing area source dry cleaners can be significant, the proposed low solvent consumption exemption levels would exempt existing small area source facilities they believed pose the largest health threat to individuals. These commenters stated that, as a result of their location in proximity to human populations, more people are exposed to air toxics from small existing area source dry cleaners than from large industrial complexes, such as chemical plants, which are not usually located in the midst of population centers. Some believed that virtually all small existing area source dry cleaners contributing to this problem would be exempted under the proposed NESHAP. They requested that the EPA reevaluate the low solvent consumption exemption levels to ensure that a larger number of small existing area source dry cleaning facilities is subject to the NESHAP.

Neither the proposed nor the final NESHAP includes low solvent consumption exemption levels for new area source dry cleaning facilities. The proposed, as well as the final NESHAP, however, includes low solvent consumption exemption levels for existing area sources.

At proposal, the impacts of requiring the use of refrigerated condensers or carbon adsorbers to control process vent emissions from dry cleaning machines were judged to be unreasonable for area sources consuming less than 760 and 1,000 liters (200 and 300 gallons) of PCE per year for dry-to-dry machines and transfer machine systems, respectively (corresponding to annual receipts of $100,000). In response to comments, the EPA reconsidered these low solvent consumption exemption levels. The EPA concluded that lowering the exemption levels to 530 and 760 liters (140 and 200 gallons) per year for dry-to-dry and transfer machines, respectively (corresponding to annual receipts of $75,000) was warranted and reasonable.

In 1996, this change would require approximately 500 more dry cleaners to install refrigerated condensers to control process vent emissions from dry cleaning machines and would reduce PCE emissions by an additional 450 Mg (500 tons) per year. The cost of controlling those facilities with annual receipts between $75,000 and $100,000 is $0.9 million. As many as 165 additional financial failures are estimated to result from lowering the low solvent consumption exemption levels. Also, there could be as many as 65 additional business closures. The EPA judged this change in the requirement to be generally achievable. The EPA considered it unreasonable, however, to further lower the low solvent consumption exemption levels due to the high costs and excessive financial failures and closures (up to 3,800 financial failures and 1,400 closures) that would result. The decision to exempt certain low solvent consumption facilities was based on the evaluation of the potential economic impact of regulation. Many of the smaller businesses are individually operated, single family-owned establishments.

In addition to lowering the low solvent consumption exemption levels for existing area source dry cleaning facilities, the EPA reevaluated the impacts of extending additional pollution prevention practices, such as leak detection and repair, to all dry cleaning facilities and concluded that these impacts are reasonable. Thus, in the final NESHAP, *all* dry cleaning facilities are required to implement additional pollution prevention practices, such as leak detection and repair.

3. MACT for New Dry-to-Dry Machines at Major Sources.

Commenters stated that additional controls should have been considered as MACT for dry-to-dry machines. A new German machine, the Permac Consorba®, was mentioned by one commenter. This machine uses a carbon adsorber in conjunction with a refrigerated condenser for process vent control. The commenter indicated that it made sense that a dual control system would achieve better control than a machine with one control device.

In the simplest sense, a Permac Consorba® may be described as a dry-to-dry machine equipped with two control devices in series—a refrigerated condenser followed by a carbon adsorber. The reported advantage of this system over a conventional dry-to-dry machine equipped with only a refrigerated condenser is that it reduces the PCE concentration in the air remaining in the machine once the dry cleaning cycle is complete.

Conventional dry-to-dry machines vent or release the vapors remaining in the machine at the end of the dry cleaning cycle. The Permac Consorba® controls these vapors with a carbon adsorber before the machine door is opened.

The emissions remaining in a conventional machine at the end of the dry cleaning cycle can be controlled by drawing the air remaining in the machine through a small carbon adsorber either before the door to the machine is opened (similar to the Permac Consorba®) or venting the air through a carbon adsorber to the atmosphere as the door is opened. Indeed, information was made available to the EPA after proposal indicating that several conventional vented dry-to-dry machines equipped with refrigerated condensers currently operate in this manner (i.e., the air remaining in the machine at the end of the dry cleaning cycle is vented to a carbon adsorber as the door to the machine is opened).

There is no difference in PCE emissions between a Permac Consorba® and a conventional vented dry-to-dry machine equipped with a refrigerated condenser and a small carbon adsorber on the vent. Similarly, there would be no difference in emissions between a Permac Consorba® and a conventional no-vent dry-to-dry machine equipped with a refrigerated condenser that passed the air remaining in the machine at the end of the dry cleaning cycle through a carbon adsorber, before the door to the machine is opened.

Under the Act, MACT for new major sources must be no less stringent than the best-controlled similar source. As a result, the final NESHAP requires that new major source dry-to-dry machines be equipped with a refrigerated condenser and that the air remaining in the machine at the end of the dry cleaning cycle be passed through a carbon adsorber prior to opening the machine door or that the air remaining in the machine be passed through a carbon adsorber as soon as the door to the machine is opened. Thus, the level of control required for major new source dry cleaning facilities is equivalent to that achieved by the Permac Consorba® technology.

The MACT is also required for existing dry-to-dry machines located at major sources. Under the Act, MACT for existing sources must be no less stringent than the average emission limitation achieved by the best 12 percent of existing sources. Less than 12 percent of existing major source dry-to-dry machines are using a refrigerated condenser in combination with a carbon adsorber to control PCE process vent emissions. However, MACT can be more stringent if the Administrator determines that the balance of costs, energy, and environmental impacts of choosing a more stringent level of control are reasonable.

Assuming a 95-percent emission reduction for a carbon adsorber, the incremental cost effectiveness of the additional emission reduction achieved

by requiring conventional dry-to-dry machines with a refrigerated condenser to also install a carbon adsorber would be in the range of approximately $7,700 per Mg ($7,000 per ton) of PCE for a typical existing dry-to-dry machine located at a major source. If the efficiency of the carbon adsorber is less than 95 percent (as the California survey data mentioned earlier suggests), the cost effectiveness would be even higher. Because this additional cost of control is quite high for the additional amount of emission reduction achieved, the EPA does not consider this level of control reasonable for an existing dry-to-dry machine located at a major source.

4. Room Enclosures on Transfer Machine Systems

Commenters suggested that the EPA consider vapor containment and control systems, commonly referred to as "room enclosures," as MACT for transfer machine systems.

Room enclosures capture and vent the fugitive PCE emissions from clothing transfer between the washer and the dryer at transfer machine systems to a carbon adsorber. Since clothing transfer emissions are a significant portion of overall transfer machine system emissions, control of these through a room enclosure would achieve additional emission reductions.

The only type of control device that could effectively control PCE emissions on a room enclosure is a carbon adsorber. As stated previously, however, new information (i.e., the California survey) indicates that carbon adsorbers achieve a lower level of emission reduction in actual practice within the dry cleaning industry than originally thought.

Assuming a carbon adsorber achieves a 95-percent reduction in PCE emissions, the incremental cost effectiveness of requiring room enclosures with carbon adsorbers on existing major source transfer machine systems would be as low as $330 per Mg ($300 per ton) of PCE. In fact, even if the control efficiency of the carbon adsorber was as low as 20 percent, the incremental cost effectiveness of requiring room enclosures on major source transfer machine systems would be about $1,900 per Mg ($1,700 per ton) of PCE.

Although the EPA does not believe the control efficiency of carbon adsorbers within the dry cleaning industry is as low as 10 percent, making such an assumption for the purpose of calculations effectively indicates that, even at low control efficiencies, the use of room enclosures at major source transfer machine systems is reasonable. Consequently, the final NESHAP requires the use of room enclosures with carbon adsorbers at existing major source transfer machine systems.

Requiring existing major source transfer machine system dry cleaners to use room enclosures is not estimated to result in any additional financial failures or closures. Initially, due to the limited number of vendors of room enclosures, the EPA was concerned with the creation of a market for these devices. With few vendors and a large demand, the price of room enclosures could rise significantly. However, if required only for those few existing major source transfer machine systems, the demand for room enclosures is not judged sufficient to cause a significant rise in the price of a room enclosure.

For existing area sources, the impacts of requiring a room enclosure are considered unreasonable. The incremental cost effectiveness of requiring a room enclosure for a typical area source could be as high as $9,800 per Mg ($8,900 per ton) of PCE, even if the carbon adsorber is achieving a high percent emission reduction efficiency (e.g., 95 percent). If the carbon adsorber is operating at a lower control efficiency, the resulting incremental cost effectiveness would be even higher. The number of additional financial failures could be as high as 1,100 with as many as 260 additional closures if room enclosures were required on all existing area source transfer machine systems. Up to 500 additional financial failures and as many as 5 additional closures would result from such a requirement on only the largest area sources (e.g., those with annual receipts over $100,000). In addition, with only a few vendors of room enclosures, the EPA remains concerned with the impact that extending a requirement for room enclosures to all existing transfer machine system area sources would have on the price of room enclosures. For these reasons, the Administrator considers room enclosures unreasonable for existing transfer machine system area sources.

5. Banning Transfer Machine Systems and Reclaimers

Commenters recommended that the EPA impose a ban on the sale of new or used transfer machine systems. One commenter believed that transfer machine systems are still being offered and sold to dry cleaners, and that only a ban on the sale of transfer machine systems would prevent dry cleaners from purchasing these systems.

Prior to proposal, the EPA believed that no new transfer machine systems were being sold or had been sold in recent years due primarily to the adoption of the OSHA permissible exposure limit (PEL) of 25 parts per million (ppm) (January 19, 1989). The OSHA PEL was intended to reduce worker exposure to PCE. Based on the level of PCE emitted during the clothing transfer step at transfer machine systems, transfer machine systems were viewed as incapable of meeting the OSHA PEL. Consequently, the EPA believed it was not necessary to develop regulations that effectively banned or prohibited the use of new transfer machine systems.

Following proposal of the NESHAP for dry cleaners, however, the Eleventh Circuit Appeals Court remanded the PEL to OSHA. In addition, information provided to the EPA following proposal indicates that many owners or operators of transfer machine systems were meeting the OSHA PEL by increasing ventilation or rotating the placement of their workers. Moreover, it was learned that transfer machine systems, manufactured for use with petroleum solvents could be used as PCE transfer machine systems.

Finally, information provided to the EPA following proposal made it clear that, in some cases, reclaimers were being sold for use with dry-to-dry machines to increase the clothing throughput of the machines. A reclaimer is essentially a dryer, and its use with a dry-to-dry machine effectively converts the dry-to-dry machine to a washer, thus creating a new transfer machine system.

Consequently, the EPA has reconsidered its position at proposal, that a ban or prohibition of new transfer machine systems is unnecessary.

For transfer machine systems located at a major source, the NESHAP must be based on MACT. The Act states that MACT for new sources must be no less stringent than the best controlled similar source. A transfer machine system with a room enclosure represents the best controlled similar source. The MACT may be more stringent, however, if the Administrator believes the balance between the additional economic, energy, and environmental impacts of a more stringent requirement is reasonable. The only option more stringent than a transfer machine system with a room enclosure is a new dry-to-dry machine.

Dry-to-dry machines provide complete control of clothing transfer emissions (i.e., emissions released by transfer of clothing from the washer to the dryer of a transfer machine system). Dry-to-dry machines eliminate these emissions by eliminating the need to transfer clothing from a washer to a

dryer (achieving 100 percent reduction of clothing transfer emissions).

The MACT for new transfer machine systems could be based on the use of new dry-to-dry machines, thereby requiring new major source transfer machine systems to eliminate all emissions from clothing transfer between the washer and the dryer. Such a requirement would effectively ban or prohibit new transfer machine systems because no technology has been identified to date (including the use of hamper enclosures or room enclosures) that could be added to a new transfer machine system to totally eliminate all PCE emissions from clothing transfer. Dry-to-dry machines offer an effective pollution prevention alternative to transfer machines. Promoting use of this equipment is consistent with the Agency's commitment to pollution prevention.

The benefits associated with a requirement based on new dry-to-dry machines would be 100 percent control of clothing transfer emissions. Clothing transfer is estimated to contribute up to as much as 25 percent of the PCE emissions from an uncontrolled transfer machine system. For a typical major source, the annualized costs for requiring a dry-to-dry machine would be a net savings ($300) because overall PCE consumption is lower with a dry-to-dry machine. This lower cost is due to the increased amount of PCE that is recovered and recycled within the machine.

The EPA believes it is reasonable to require new transfer machine systems located at major sources to meet the same level of control of clothing transfer emissions as achieved by new dry-to-dry machines. Thus, the final NESHAP prohibits any emissions between the washing and drying step of the dry cleaning cycle for new transfer machine systems located at major sources. This requirement effectively bans or prohibits the use of new transfer machine systems at major sources.

For new area source transfer machine systems, the NESHAP is based on GACT. The GACT is a balance between environmental, economic, and energy impacts the Administrator considers reasonable. The incremental cost of requiring a new dry-to-dry machine over a new transfer machine system with a room enclosure at a typical new area source is approximately $600 per year. The EPA does not believe that the additional costs of purchasing a new dry-to-dry machine over purchasing a new transfer machine system with a room enclosure would deter entry (or expansion) into the dry cleaning market. If a business venture is viable and attractive with the purchase of a new transfer machine system and room enclosure, the EPA believes that the business venture would also be viable and attractive with the purchase of a new dry-to-dry machine. Consequently, requiring new area source transfer machine systems to eliminate all clothing transfer emissions (i.e., purchase a new dry-to-dry machine) is considered generally achievable. Thus, the final NESHAP also prohibits any emissions between the washing and drying step of the dry cleaning cycle for new transfer machine systems located at area sources. As mentioned above for major sources, this requirement effectively bans or prohibits the use of new transfer machine systems at area sources. Thus, all new transfer machines are effectively banned. Under the rule, the addition of a reclaimer to an existing dry-to-dry machine would constitute reconstruction of the dry cleaning system. As a result, the addition of a reclaimer to a dry-to-dry machine would be banned effective on today's date. Reclaimers added to a dry-to-dry machine after December 9, 1991 (the date of the proposed dry cleaning NESHAP) and prior to today's date are allowed to operate for up to three years from today's date, if the dry cleaning system complies in the interim with the proposed rule.

In addition to requiring that all new dry cleaning machines be dry-to-dry machines, phasing out or replacing existing transfer machine systems with dry-to-dry machines was also considered. Commenters questioned why there was no discussion of immediate or gradual replacement of existing transfer machine systems in the proposal. They stressed that the EPA cannot rely upon OSHA rules for a prompt phase out of transfer machine systems.

There is little difference between the impacts of immediate replacement of existing transfer machine systems and replacement within three years, the maximum compliance period for existing sources under the statute. In both cases, the capital cost of the transfer machine system is a "sunk" cost that has been incurred and is not a factor in the analysis.

This "sunk" cost makes the analysis of replacing existing transfer machine systems quite different from that of banning or prohibiting new transfer machine systems. For existing transfer machines systems, the cost of replacing the existing system is the full cost of a new dry-to-dry machine. For a new system, the cost of banning or prohibiting the system is the difference in cost between a new transfer machine system and a new dry-to-dry machine. Consequently, the costs are much higher in the analysis of replacing existing transfer machine systems than they are in the analysis of banning or prohibiting new transfer machine systems. The emission reduction achieved is the same for either option.

The EPA analyzed the costs of requiring replacement of existing transfer machine systems with dry-to-dry machines in comparison with the additional fugitive emissions of PCE that result from transfer machine systems. The incremental cost effectiveness for replacing a typical existing major source transfer machine systems with a dry-to-dry machine is approximately $12,200 per ton of PCE reduced. For area sources, the incremental cost effectiveness for replacing the transfer machine system with a dry-to-dry machine is approximately $41,000 per ton of PCE reduced. The EPA has determined that based on this comparison, which relies on currently available information, requiring replacement of these transfer machine systems with dry-to-dry machines is not justified at this time. However, the EPA is aware that additional environmental impacts may be associated with the continued use of transfer machine systems in certain situations. For example, the impact on indoor air quality may be of concern. At this time, however, the data are insufficient to determine whether considering these other impacts it may be appropriate to further limit the use of transfer machine systems. The EPA will address this issue further in the public meeting (see **ADDRESSES** section at the beginning of this preamble) and will continue to examine this issue. If appropriate, the EPA may revisit the determinations made in this rule.

Commenters agreed with the EPA that use of a reclaimer with a dry-to-dry machine effectively creates a new transfer machine system. Therefore, they recommended a ban on the sale of new or used reclaimers.

Accordingly, the NESHAP has been revised to define a dry-to-dry machine used with a reclaimer as a transfer machine system. In addition, the NESHAP does not allow clothing transfer emissions to occur between the washing and the drying step of the dry cleaning cycle for a new transfer machine system. This requirement effectively bans or prohibits new transfer machine systems. It also effectively bans or prohibits the use of new reclaimers with new or existing dry-to-dry machines, because adding a reclaimer to a new or an existing dry-

to-dry machine creates a new transfer machine system.

6. Vapor Barriers

In addition to room enclosures, some commenters requested that vapor barriers be required to prevent seepage of PCE to adjacent apartments. It was also suggested that dry cleaning facilities located in close proximity to residential buildings or food service establishments be required to have vapor barriers on all floors, walls, and ceilings to separate the dry cleaning facility from other areas in the building and to deter migration of PCE emissions.

Installing vapor barriers to prevent seepage of PCE emissions into adjacent living or working areas merely contains the emissions in the dry cleaning facility. Installing vapor barriers could lead to elevated PCE concentrations in the work areas and public areas of the dry cleaning facility, resulting in increased worker and public exposure at the dry cleaner. Vapor barriers could also be very expensive for a dry cleaning owner or operator to install. Estimates indicate that installation of a vapor barrier in a 30 by 50 by 20 foot dry cleaning facility would cost approximately $6,500. Based on available information, vapor barriers are considered unreasonable for a national standard due to their high cost and their failure to control or reduce PCE emissions.

The Administrator agrees with the concerns expressed by many commenters about the potential impact of fugitive emissions. As mentioned earlier, to address these concerns, the final NESHAP requires control of fugitive emissions by leak detection and repair. As a result, the NESHAP will significantly reduce fugitive PCE emissions from all dry cleaning facilities.

In a few cases, local agencies may find situations where they believe the use of vapor barriers may be warranted, such as the situation of a very large dry cleaning establishment without adequate ventilation located in an apartment complex. Cases such as this are best handled on a site-specific basis at the local level.

7. Dry Cleaning Ventilation Requirements

Commenters recommended including dry cleaning ventilation requirements in the final NESHAP. Specific dry cleaner exhaust or ventilation requirements were recommended, such as adopting the National Fire Protection Association (NFPA) Standard 32 for dry cleaning plants (1990 edition). This would require an air change within the dry cleaning plant every 5 minutes. In addition, commenters recommended that all dry cleaning machines install a ventilation system capable of maintaining a minimum air velocity of 0.6 meters per second (100 feet per minute) through the loading door of the dry cleaning machine, whenever the door is open.

Ventilation requirements in and of themselves would not reduce fugitive emissions. From the perspective of the NESHAP, the EPA believes it is more appropriate to focus on the use of equipment or techniques that prevents or controls emissions rather than to focus on ventilation requirements that merely divert, rather than reduce, emissions.

If dry cleaning plant ventilation systems were installed and the resulting exhaust routed through a control device, such as a carbon adsorber, this would reduce fugitive emissions; however, it could be prohibitively expensive. The NESHAP, therefore, does not include dry cleaning plant ventilation requirements. On the other hand, the NESHAP does not preclude a dry cleaning plant from installing ventilation systems. Moreover, where local authorities consider a ventilation system necessary, the NESHAP does not prevent or hinder local authorities in any way from requiring additional measures such as ventilation systems.

The NESHAP requires the implementation of a leak detection and repair program, to control fugitive PCE emissions. These measures will achieve a substantial reduction in fugitive emissions at dry cleaning facilities.

C. Monitoring and Equivalency

1. Monitoring Control Devices

Many commenters stated that the NESHAP should contain some type of emission limit and performance testing. They asserted that requiring the dry cleaning owner or operator to install certain equipment and follow work practices without a performance test will not necessarily reduce emissions. The commenters felt the only way to ensure emission reductions was to establish and enforce an emission limit through performance testing.

As discussed in the proposal preamble, the cost of requiring an owner or operator to undertake a full-fledged performance test to demonstrate compliance with emission limits based on the use of a refrigerated condenser or a carbon adsorber would be expensive ($3,000 to $5,000), especially compared to the cost of this emission control equipment ($6,000 to $8,000). The additional cost of such a performance test, therefore, would create a significant impact by almost doubling the cost that the NESHAP would impose.

The economic analysis conducted prior to proposal indicated that many operators will likely experience difficulty in obtaining capital to purchase emission control equipment. To preclude unreasonable economic impacts, the NESHAP does not require vent controls on existing sources with an annual PCE consumption of less than 530 liters (140 gallons) per year for facilities with dry-to-dry machines or 760 liters (200 gallons) per year for facilities with transfer machine systems. Imposing additional costs by requiring a full-fledged performance test to determine compliance would add significantly to the economic impact of the NESHAP and would result in raising the low solvent consumption exemption levels for existing sources and decrease the emission reductions achieved by the NESHAP.

Several commenters believed that the NESHAP should include emission limitations and performance testing for carbon adsorbers. They believed that an emission limit for carbon adsorbers is necessary because operating requirements alone are not enough. Examples were cited of carbon adsorbers with damaged prefilters or leaking dampers drastically reducing emission control efficiency.

The concerns of the commenters regarding poor operation and maintenance of equipment are well founded. There is, however, incentive for an owner or operator to properly operate and maintain dry cleaning emission control equipment. Having invested what for most dry cleaning facilities will be a substantial sum of money in this equipment, properly operating and maintaining it will provide some return in terms of recovered PCE. Proper operation and maintenance will result in lower PCE consumption and reduce the dry cleaner's operating costs attributable to PCE purchases.

Beyond this economic incentive, however, the final NESHAP requires the owner or operator to follow the equipment manufacturer's specifications regarding proper operation and maintenance of equipment. In addition, the NESHAP requires the owner or operator to maintain a log containing information on the proper operation and maintenance of control devices.

To help dry cleaners determine that the control devices are operating properly, periodic monitoring is also required in the final NESHAP. If the control device used to achieve

compliance is a refrigerated condenser, the owner or operator is required to measure the temperature of the vapor stream passing through the refrigerated condenser. For refrigerated condensers used with transfer machine system washers, the temperature on the inlet side and outlet side of the refrigerated condenser must be measured. For refrigerated condensers used with transfer machine system dryers or reclaimers, or dry-to-dry machines, the temperature of the exhaust gas stream exiting the refrigerated condenser must be measured. Measurements must be taken once per week at the end of the cool down cycle prior to door opening. Records of this temperature measurement must be kept in a log maintained onsite.

If the control device used to achieve compliance is a carbon adsorber, the owner or operator is required to measure the PCE concentration at the exit of the carbon adsorber. Measurements must be taken once per week during the last aeration cycle prior to a scheduled desorption using a colorimetric detector tube. Records must be kept in a log (maintained on site) of the date and PCE concentration measured using the colorimetric detector tube.

The NESHAP requires that copies of the equipment manufacturer's operation and maintenance specifications be retained onsite. All of the above requirements will ensure proper operation and maintenance of equipment and will also ensure this equipment achieves the emission control performance it is capable of achieving.

2. Determining Equivalency

Guidance was requested regarding what type of information must be included with any request for a determination of equivalency (i.e., that the equipment a dry cleaner proposes to use is equivalent to that required by the NESHAP). Information was requested on the type and duration of emission data needed and the method for determining the control efficiency of the particular technology.

It is difficult to specify what information must be submitted for a determination of equivalency without knowing some details of the emission control technology or system for which the determination is requested. A description of this type of information must be broad and general in nature to accommodate all possibilities. It is possible, however, to be more specific regarding some requirements and the final NESHAP specifies that the following information must be submitted:

a. Diagrams, as appropriate, illustrating the emission control technology or system, its operation and integration into or function with dry-to-dry machines or transfer machine systems during each portion of the normal dry cleaning cycle.

b. Information quantifying vented PCE emissions from the dry-to-dry machines or transfer machine systems during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology or system.

c. Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of PCE used.

d. Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance.

e. Explanation of why this submitted information is considered accurate and representative of both the short-term and long-term performance of the candidate emission control technology on the specific dry cleaning system examined.

f. Explanation of why this information can be extrapolated to dry cleaning systems other than the specific system(s) examined.

g. Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

3. Delegation of Authority to Determine Equivalency

Concern was expressed by some commenters that States were not delegated authority in the proposal to determine equivalency. Commenters strongly opposed limiting the authority for approving alternative control equipment and procedures proposed by individual dry cleaning sources to the EPA alone. It was believed that the EPA's retention of this delegation of authority would negatively impact the operating permit process. The emphasis in comments was that States must retain the right to take appropriate actions to implement effective emission control strategies to protect public health within their jurisdictions.

The EPA agrees that States should be allowed to implement effective emission strategies to protect public health within their jurisdictions. In some cases, States may feel it is necessary to implement more protective air pollution control measures than those adopted in national standards to control local problems.

The EPA also agrees that provisions limiting the authority to the EPA alone for making judgments regarding the equivalency of different equipment to control PCE emissions with the same or better performance than the control equipment required by the NESHAP are not warranted because section 112(l) of the Act would allow a State to request approval of a State's program that permits a source to seek permission to use an alternative means of emission limitation under section 112(h)(3), provided that the State demonstrated that its program would be no less stringent and that certain conditions were met. Section 112(l) of the Act authorizes States to submit programs to the Administrator for approval for implementing and enforcing emission standards. Section 112(l) also goes on to state that such programs may provide for partial, as well as complete, delegation of the EPA's authorities and responsibilities. The approval and delegation process is addressed in detail in the EPA's notice of proposed rulemaking: "Approval of State Programs and Delegation of Federal Authorities; Proposed Rule," published on May 19, 1993, (58 FR 29296).

As a result, the provision limiting the authority to judge the equivalency of different equipment to the EPA has been deleted from the final standards. Doing so, however, does not mean that these provisions will be "automatically" delegated to States upon application. In addition, delegating these provisions will not preclude the EPA from considering petitions submitted by various equipment suppliers or vendors and making equivalency determinations on a national level.

D. Other Issues and Follow-up to Today's Action

The NESHAP promulgated in today's Federal Register will achieve significant reductions in PCE emissions from new and existing dry cleaning facilities. There remain, however, several major issues associated with dry cleaning facilities that merit further attention. These include: (1) Indoor air pollution in residences located above dry cleaning facilities; and (2) groundwater pollution resulting from dry cleaning facilities. These issues were brought to light following proposal of the NESHAP by the New York Study (indoor air pollution) and the California Study (ground water pollution).

1. New York Study

The New York Study, performed by the State of New York, is an assessment

of indoor air pollution in residences located above dry cleaners. Many States and environmental groups referred to this study in their public comments on the NESHAP, and several commenters submitted copies of the study as attachments to their comments. They believed that the study shows that the risk to public health from exposure to PCE emissions from dry cleaners is significant and should be targeted for regulation. They mentioned that, although the Act does not specifically address indoor air pollution, indoor air emissions eventually become ambient air emissions.

The New York Study focuses on dry cleaners located in Albany, New York. All 102 dry cleaners listed in the Albany telephone directory were contacted. Of these 102 dry cleaners, 67 cleaned or pressed clothes on the premises. Of these 67, 6 had occupied residences above them.

The levels of PCE in the indoor and outdoor air at residences located above the 6 dry cleaners were measured over a 24-hour period. Identical measurements were taken at the same time at 6 control residences located at least 100 meters (330 feet) away from each dry cleaner. The control residences were selected based on their similarity to the study residences in terms of building type, age, and neighborhood.

The study found indoor air concentrations of PCE ranging from 100 to 55,000 micrograms per cubic meter ($mcg/^3$) [15 to 8,000 parts per billion (ppb)] in the 6 residences located above dry cleaners. The cancer risk estimate associated with these levels, based on the EPA's unit cancer risk estimate for PCE and lifetime exposure, is 1 in 100,000 to 1 in 100 (10^{-5} to 10^{-2}). Control residences had indoor air PCE concentrations ranging from 6 to 100 mcg/m^3 (1 to 15 ppb). The cancer risk associated with these levels is 1 in 1,000,000 to 1 in 100,000 (10^{-6} to 10^{-5}).

The New York study indicates that PCE emissions can accumulate in residences located above dry cleaning facilities, resulting in increased public exposure to PCE. While not definitive, in the EPA's opinion, based on various observations included in the New York study, the major contributor to the elevated PCE levels measured in the residences located above these dry cleaners seems to be fugitive emissions.

2. California Well Investigation Program

The California Well Investigation Program is an assessment of ground water contamination undertaken by the State of California. The study contends that PCE contaminated discharges into sewer lines by dry cleaning facilities has contaminated ground water in several areas.

The California Study focuses on wells in the Central Valley Region, which supply drinking water to municipal water systems. Water drawn from 215 out of some 2,000 wells tested contained detectable levels of PCE. Of these 215 wells, water drawn from 47 wells contained levels of PCE above the maximum contaminant level (MCL) of 5 parts per billion (ppb) in the National Revised Primary Drinking Water Regulations.

Soil gas surveys and ground water movement around 21 of the 47 wells with levels of PCE above the MCL indicate the source of PCE contamination in these wells to have originated from sewer lines. In 20 out of these 21 wells, dry cleaning facilities were identified as the sole users of PCE connected to the sewer lines. Soil gas surveys along the main sewer lines downstream from sewer laterals connecting the dry cleaners to the main sewer lines also showed relatively high concentrations of PCE. As a result, the study concludes that dry cleaning facilities are the source of the observed PCE contamination.

Recovery of PCE for reuse within the dry cleaning process generates wastewater contaminated with PCE. Most of the PCE contained in this wastewater is recovered in a water separator. Water from the water separator, however, is routinely discharged to the sewer at many dry cleaning facilities. Separator water generally contains about 150 ppm of PCE; but it may contain as much as 30 percent PCE, if the water separator is poorly operated.

Dry cleaning machines that use a refrigerated condenser for process vent control generate about 190 liters (50 gallons) per year of separator water; those with no process vent control generate even less. Dry cleaning machines that use a carbon adsorber for process vent control, on the other hand, generate about 7,600 liters (2,000 gallons) per year of separator water—40 times that generated by a refrigerated condenser.

The California study concludes that PCE discharged to sewers from dry cleaning facilities can contaminate ground water. Whether the primary source of PCE discharged to sewers by dry cleaning facilities is the result of leaking equipment, accidental spills, or PCE contaminated wastewater generated by dry cleaning or that generated by emission control equipment installed to control process vent emissions, however, is unclear.

The use of carbon adsorbers for process vent control significantly adds to the amount of PCE contaminated wastewater generated by dry cleaning facilities. While not conclusive, this suggests the use of carbon adsorbers for process vent control may be a primary contributor to ground water pollution resulting from dry cleaning facilities.

3. Follow-up to Today's Action

The EPA believes, based on information received to date, that PCE contamination of indoor air and ground water may present problems that warrant additional Federal actions. The EPA considered seeking an extension of the court deadline for the final rule to deal fully with these issues. This course of action, however, would have postponed the health and environmental benefits of the rule for an extended period of time. The EPA determined that the best environmental protection would be achieved by issuing today's rule as expeditiously as possible, and deciding subsequently how to address remaining indoor air pollution and ground water contamination associated with PCE dry cleaners.

Today's rule, while targeted primarily at reducing PCE contamination of outdoor air, may reduce indoor air contamination in some locations through requirements reducing fugitive and process vent emissions from dry cleaners. In addition, the rule requires uncontrolled machines to be controlled with refrigerated condensers, which will minimize generation of wastewater and solid waste.

In order to gain additional insight and understanding into the issues of indoor air pollution and ground water pollution associated with dry cleaning facilities, the EPA will convene a public meeting (see *Public Meeting* under **ADDRESSES** at the beginning of this preamble). The objective of this public meeting will be to gather additional information and solicit public comment on the magnitude and severity of the problems highlighted by the New York and the California studies and potential solutions or approaches for dealing with these problems. Copies of the New York and California studies are included in Docket No. A–88–11 (see Docket under **ADDRESSES**). (The New York Study is Docket No. A–88–11, Item No. IV–D–5 with additional information in Item No. IV–J–40; the California Study is also part of Item No. IV–J–40.) The EPA also would like to be informed of other studies conducted by States (or others) that address the relative efficiency of carbon adsorbers and refrigerated condensers, and their impact on air

emissions. Anyone wishing to speak and make presentations at the public meeting and/or wishing to submit written comments, please see the section Public Meeting under **ADDRESSES** at the beginning of this preamble.

The EPA will use the information received from the public meeting, as well as written comments, in deciding whether additional actions should be taken to reduce health and environmental risks from dry cleaners. The EPA will, at a minimum, publish and distribute the information presented at the public meeting. The EPA may then use this information to develop guidance for States and local agencies; and/or develop additional regulations. At the meeting, the EPA will explore the desirability and feasibility of using a regulatory negotiation or other consensus-building approach to address these issues.

With respect to indoor air pollution, the EPA specifically requests States and the public to provide their views and any available information on:

a. The number of dry cleaners co-located in buildings with residences or businesses.

b. The extent and severity of indoor air contamination with PCE from dry cleaners, and the adequacy of existing data on this problem.

c. The extent and severity of PCE contamination of fatty foods in residences, restaurants, and food stores that are co-located with or located near dry cleaners.

d. The extent to which PCE indoor air contamination results from fugitive emissions or process vent emissions.

e. The amount of fugitive emissions from different types of dry cleaning machines, and from the various pieces of ancillary equipment associated with the dry cleaning process.

f. Methods for reducing PCE contamination of indoor air, including but not limited to:

(1) Improved maintenance involving the use of instruments to inspect dry cleaning equipment for leaks of PCE.

(2) Increased room ventilation and/or ducting of emissions outdoors.

(3) Collection of steam press emissions.

(4) The use of vapor barriers.

(5) Improved training of dry cleaning workers, or other information dissemination activities.

(6) A phaseout of existing transfer machine systems (today's rule effectively bans new transfer machine systems but does not limit the period of time that existing transfer machine systems can remain in service).

(7) Other strategies, control technologies, and pollution prevention methods that can reduce fugitive emissions, especially at small dry cleaners.

g. The extent to which evaporators are in use, and their impact on air quality as well as wastewater contamination.

h. The relative performance of vented versus ventless machines in reducing PCE emissions.

i. The relative effectiveness, cost, and affordability of the available options, as well as key advantages and drawbacks, including information on:

(1) The economic impact of a requirement to replace existing carbon adsorbers with refrigerated condensers.

(2) The economic impact of a requirement to replace existing transfer machines with dry-to-dry equipment.

j. The appropriate Federal role in encouraging or requiring steps to reduce PCE contamination of indoor air.

k. The proposition that the EPA should voluntarily conduct a residual risk analysis for area source dry cleaners, as well as a statutorily mandated risk analysis for major sources, to assess remaining health and environmental risks after installation of MACT and GACT technology. (Based on the results of this analysis, the EPA could assess whether more stringent, health-based standards are warranted).

l. Examination of coin-operated dry cleaners exempt from this NESHAP to evaluate their potential contribution to indoor air pollution.

m. Evaluation of appropriate operator training and certification methods.

With respect to ground water contamination and solid waste generation by dry cleaners, the EPA specifically requests that States and the public provide their views and any available information on:

(1) The extent and severity of contamination of ground water with PCE from dry cleaners, and the degree of health threat posed by this contamination;

(2) The relative contribution of wastewater discharges, accidental spills, equipment leaks, and improper hazardous waste disposal to this ground water contamination;

(3) Costs of treating well water contaminated with PCE to make it safe for drinking, and the costs and feasibility of cleaning up ground water contaminated with PCE;

(4) The degree of solid or hazardous waste generation associated with the prevention/control technologies, information on how these wastes are managed and their environmental impact.

(5) Potential measures to prevent or minimize further contamination of ground water with PCE, including but not limited to:

(a) Use of wastewater evaporators by dry cleaners.

(b) Required replacement of existing carbon adsorbers used for process-vent control with refrigerated condensers, perhaps through a gradual phaseout. (The EPA particularly solicits comment on how the EPA could use its legal authorities to require a gradual phaseout, the environmental benefits of a phaseout, and the economic feasibility of potential phase-out schedules);

(c) Improved maintenance of dry cleaning equipment through improved training of dry cleaning workers or other information dissemination activities;

(d) Encouragement of emerging PCE emission control technologies that use adsorption but do not generate wastewater because regeneration is performed through heat desorption rather than steam stripping;

(e) Spill prevention and control measures;

(f) A ban or limit on the discharge of PCE-contaminated wastewater to sewers;

(g) Disposal of dry cleaner wastewater at hazardous waste facilities;

(h) The practical use of dry cleaner wastewater in boilers; and

(i) The relative effectiveness, costs, and affordability of the available options, as well as key advantages and drawbacks.

(6) The appropriate Federal role in encouraging or requiring steps to reduce the threat of ground water contamination from dry cleaners.

While examining these issues, the EPA, as part of its Design for the Environment (DfE) program is investigating potential substitutes for PCE in dry cleaning and developing an incentive program to encourage all dry cleaners to use control measures and work practices that minimize health and environmental risks.

The DfE program, which is operated by the EPA's Office of Pollution Prevention and Toxics, fosters cooperative study on a voluntary basis with businesses and trade associations in specific industries to evaluate the risks, performance, and costs of alternative chemicals, processes, and technologies. The DfE program is currently evaluating a variety of alternatives to the current use of PCE in dry cleaning, as well as emission control technologies for dry cleaning equipment, through its Cleaner Technologies Substitute Assessment (CTSA).

As part of the CTSA, the DfE program in conjunction with the Neighborhood Cleaners Association (NCA), the International Fabricare Institute (IFI), and a commercial vendor, conducted a 4-week study to test the economic feasibility and performance aspects of a potential alternative wet-cleaning process that does not use PCE. The alternative process primarily uses steam cleaning, spotting, tumble drying, soaps, and limited amounts of water to clean clothes. The EPA expects to release the results of the study in Fall 1993 and will address whether there may be circumstances under which wet-cleaning may be technically and economically feasible.

In addition to evaluating the wet-cleaning process, the DfE Dry Cleaning Project is assessing other pollution prevention and control options. The analysis will include evaluation of environmental and human health risks, and the performance and costs of various prevention and control technologies. This assessment, which is expected to be completed in Spring 1994, will provide the dry cleaning industry with valuable information when considering options for compliance, risk reduction, and pollution prevention.

For information on the Design for the Environment Dry Cleaning Project contact Jean E. (Libby) Parker, EPA, Office of Pollution Prevention and Toxics, mail code TS–779, 401 M Street, SW., Washington, DC 20460, telephone number (202) 260–0880.

As part of the EPA's focus on pollution prevention at this time, the Administrator strongly encourages those dry cleaners currently using carbon adsorbers for primary process vent control to replace them with refrigerated condensers as early as possible.

While the EPA conducts follow-up activities related to dry cleaners, the EPA notes that there are opportunities for State and local government to take action as well. For example, State and local governments may wish to investigate whether indoor air or ground water in their jurisdictions is being contaminated with PCE from dry cleaning. If a State or local government finds an indoor air pollution problem, for example, the government may wish to consider whether collocation of a dry cleaner in the same building with residences is appropriate.

V. Administrative Requirements

A. Docket

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. 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 standards 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)).

B. Paperwork Reduction Act

Information collection requirements given in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and have been assigned OMB control number 2060–0234.

This collection of information is estimated to have a public reporting burden averaging 3.2 hours per response, and to require 49 hours per recordkeeper annually. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

In an Information Collection Request Action Notice dated June 5, 1992, OMB disapproved two of the information collection provisions for the PCE Dry Cleaning NESHAP. The first was the weekly records of leak detection and repair, and the second was the 5-year record retention period. The OMB questioned whether these provisions represented the least burdensome approach necessary to attain the goal of the standards. These concerns are addressed below.

With respect to the weekly leak detection and repair: The capture and reuse of PCE is the goal of the NESHAP. To the extent that there are fugitive emissions from leaks into the dry cleaning facility, the surrounding businesses, and the environment, the goal of the NESHAP cannot be attained. Leak detection is especially crucial for dry cleaning establishments located in mixed-use buildings, where fugitive PCE emissions tend to migrate into and build up in adjoining residences, restaurants, banks, and shops. (This is the conclusion of the New York Study which became available after the rule was proposed on December 9, 1991.)

Leaks result from unequal pressure in the system, and are also a function of the age, construction, and design of the system. A simple periodic inspection of the dry cleaning facility will alert the owner or operator of any leaks. The leaks can then be repaired on a timely basis, both meeting the goals of the NESHAP and saving the owner and operator the cost of replacing the PCE otherwise lost through leaks in the system. Therefore, frequent periodic inspections at all facilities are needed to ensure that the goal of the NESHAP is attained. However, to address concerns for those existing facilities with annual receipts below $75,000, these facilities are required to perform leak detection on a biweekly, rather than a weekly, basis.

With respect to the second issue, the 5-year retention period for records: The types of records required to be kept require very little storage space and are of great practical utility for purposes of determining compliance and following through with any necessary enforcement action. The recordkeeping required is so minimal that the records for a 5-year period literally could be kept in one notebook. The usefulness of the 5-year record retention period for the EPA results from the fact that dry cleaning facilities are so numerous and the EPA's inspection and audit resources so limited that inspections of any given facility will, of necessity, be rare. Congress recognized this, and granted a 5-year statute of limitations for NESHAP. A record retention period of less than 5 years would prevent the EPA from enforcing its regulations for fewer years than Congress has specifically mandated. The retention of records over 5 years also allows the EPA to establish a source's history and patterns of compliance for purposes of determining the appropriate level of enforcement action. In many cases, the additional information could benefit the source.

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 Street SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

C. Executive Order 12291

Under Executive Order (E.O.) 12291, the EPA is required to judge whether a regulation is a "major rule" and therefore subject to the requirements of a regulatory impact analysis (RIA). The criteria set forth in section 1 of E.O. 12291 for determining whether a regulation is a major rule are as follows:

(1) The rule is likely to have an annual effect on the economy of $100 million or more; (2) the rule is likely to cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local governments, or geographic regions; or (3) the rule is likely to result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

This promulgated regulation is not a major rule because it would result in none of the adverse effects mentioned above. The total annual cost is estimated to be less than $14 million a year, far below the $100 million criterion set forth in E.O. 12291. The price impacts are estimated to range from 0.5 and 2.5 percent. The economic impact analysis on the industry indicated that output adjustments are about a 0.5 percent decrease. These small market adjustments indicate that no significant adverse effects on competition, employment, investment, productivity, innovation, or international trade are expected. Therefore, this regulation is not subject to an RIA.

This promulgated rulemaking was submitted to the OMB for review as required under E.O. 12291.

D. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 et seq) requires the EPA to consider potential impacts of promulgated regulations on small business "entities." A regulatory flexibility analysis is required if preliminary analysis indicates that a promulgated regulation is expected to have a significant economic impact on a substantial number of small entities.

Firms in the dry cleaning industry are classified as small or large based on annual sales receipts. Commercial firms are classified as small if they earn less than $2.5 million per year. By this definition, over 99 percent of commercial dry cleaning firms are small (U. S. Department of Commerce, 1990b).

The economic impacts of the regulatory alternatives were analyzed based on consumption of PCE but described in terms of dry cleaning revenues.

For the commercial area source categories, the economic analysis did indicate that many firms within the class of sources with annual receipts of less than $75,000 would be affected significantly by the promulgated standard. Below this annual receipt level are found the very smallest family-operated businesses with low annual PCE consumption and few employees. Due to economic considerations, only pollution prevention measures (i.e., leak detection and repair) are required for this class of sources under GACT—no process vent control is required.

For the class of sources with annual receipts of $75,000 or greater, the economic impacts are much smaller. Less than 260 net closures due to the promulgated regulation are projected. The analysis indicates that firms in below-average financial condition may face difficulty in obtaining the required funds to purchase control equipment from traditional loan sources, such as banks. The analysis projects between 0 and 830 firms will be in this category. These firms will either obtain other financing (vendor-aided, relatives, personal assets, etc.), close, or sell their firm. For more detail see "Economic Impact Analysis of Regulatory Controls in the Dry Cleaning Industry" (EPA–45/3–91–021b) and "Dry Cleaning Facilities—Background Information for Promulgated Standards" (EPA–450/3–91–020b).

In summary, excluding requirements for process vent control for the class of sources with annual gross receipts of $75,000 or less drastically reduces the impacts on the commercial dry cleaning sector.

E. Miscellaneous

Under the operating permit regulations codified at 40 CFR part 70, any source that is a major source under the Act or any nonmajor source subject to a standard under sections 111 or 112 of the Act must obtain an operating permit. (See § 70.3(a)(1).) The part 70 regulations also provide that a State may, at its discretion, defer all nonmajor sources from the obligation to obtain a part 70 permit until such time as the EPA finishes a rulemaking regarding the applicability of the part 70 program to nonmajor sources. Part 70 further provides that, for nonmajor sources subject to a future standard promulgated under section 111 or 112, "* * * the Administrator will determine whether to exempt any or all such applicable sources from the requirements to obtain a part 70 permit at the time that the new standard is promulgated." (See § 70.3(b)(1) and (2).)

Today's final dry cleaning rule does not exempt area source dry cleaners from permitting requirements. The EPA believes that permitting these nonmajor sources will enhance the implementation and enforcement of the rule by clarifying how the rule applies to a particular source, and how relevant parts of the to-be-promulgated general provisions apply to dry cleaners. The general provisions, which were proposed in the **Federal Register** on August 11, 1993 (58 FR 42760), are generic requirements that sources subject to section 112 standards must meet.

However, under the existing provisions of part 70, States may choose to defer the obligation of all nonmajor sources to obtain a permit until the EPA "completes a rulemaking to determine how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions * * *." In promulgating the permits rule, the EPA committed to complete that rulemaking within 5 years after the approval of the first State part 70 program that defers permitting of nonmajor sources.

The EPA believes, for the same reasons stated in the preamble to the operating permits rule, that the benefits to be gained from the permitting of nonmajor sources subject to this rule are not likely to accrue during the early stages of the permit program when permitting authorities will be occupied with the task of issuing permits to major sources. Once this task is complete, however, permitting authorities should be able to process permits for nonmajor sources subject to this rule on a relatively expedited basis. This expedited review should be the case, in part, because of the presumptive suitability of these sources for general permits.

In accordance with section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

This regulation will be reviewed 8 years from the date of promulgation as required by the Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and reporting requirements.

List of Subjects

40 CFR Part 9

Reporting and recordkeeping requirements.

40 CFR Part 63

Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: September 13, 1993.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code

of Federal Regulations is amended as set forth below:

PART 9—[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345(d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

2. Section 9.1 is amended by adding a new entry to the table under the indicated heading to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
* * * * *	
National Emission Standards for Hazardous Air Pollutants for Source Categories	
* * * * *	
63.322–63.325	2060–0234

* * * * *

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

3. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, 7412, 7414, 7416, and 7601.

4. Part 63 is amended by adding subpart M to read as follows:

Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities

Sec.
63.320 Applicability.
63.321 Definitions.
63.322 Standards.
63.323 Test methods and monitoring.
63.324 Reporting and recordkeeping requirements.
63.325 Determination of equivalent emission control technology.

Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities

§ 63.320 Applicability.

(a) The provisions of this subpart apply to the owner or operator of each dry cleaning facility that uses perchloroethylene.

(b) Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991, shall be in compliance with the provisions of this subpart beginning on September 22, 1993 or immediately upon startup, whichever is later, except for dry cleaning systems complying with section 112(i)(2) of the Clean Air Act.

(c) Each dry cleaning system that commenced construction or reconstruction before December 9, 1991, shall comply with §§ 63.322(c), (d), (i), (j), (k), and (l), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) beginning on December 20, 1993, and shall comply with other provisions of this subpart by September 23, 1996.

(d) Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines and each existing transfer machine system and its ancillary equipment, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine system(s) and dry-to-dry machine(s) is exempt from §§ 63.322, 63.323, and 63.324, except §§ 63.322(c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the total perchloroethylene consumption of the dry cleaning facility is less than 530 liters (140 gallons) per year. Consumption is determined according to § 63.323(d).

(e) Each existing transfer machine system and its ancillary equipment located in a dry cleaning facility that includes only transfer machine system(s) is exempt from §§ 63.322, 63.323, and 63.324, except §§ 63.322(c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the perchloroethylene consumption of the dry cleaning facility is less than 760 liters (200 gallons) per year. Consumption is determined according to § 63.323(d).

(f) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (d) or (e) of this section, but later exceeds those amounts, the existing dry cleaning system(s) in the dry cleaning facility must comply with §§ 63.322, 63.323, and 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by September 23, 1996, whichever is later.

(g) A dry cleaning facility is a major source if the facility emits or has the potential to emit more than 9.1 megagrams per year (10 tons per year) of perchloroethylene to the atmosphere. In lieu of measuring a facility's potential to emit perchloroethylene emissions or determining a facility's potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if:

(1) It includes only dry-to-dry machine(s) and has a total yearly perchloroethylene consumption greater than 8,000 liters (2,100 gallons) as determined according to § 63.323(d); or

(2) It includes only transfer machine system(s) or both dry-to-dry machine(s) and transfer machine system(s) and has a total yearly perchloroethylene consumption greater than 6,800 liters (1,800 gallons) as determined according to § 63.323(d).

(h) A dry cleaning facility is an area source if it does not meet the conditions of paragraph (g) of this section.

(i) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (g) of this section, but then exceeds those amounts, the dry cleaning facility becomes a major source and all dry cleaning systems located at that dry cleaning facility must comply with the appropriate requirements for major sources under §§ 63.322, 63.323, and 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amount specified, or by September 23, 1996, whichever is later.

(j) All coin-operated dry cleaning machines are exempt from the requirements of this subpart.

§ 63.321 Definitions.

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

Ancillary equipment means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

Articles mean clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.

Area source means any perchloroethylene dry cleaning facility that meets the conditions of § 63.320(h).

Biweekly means any 14-day period of time.

Carbon adsorber means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.

Coin-operated dry cleaning machine means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).

Colorimetric detector tube means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

Construction, for purposes of this subpart, means the fabrication (onsite), erection, or installation of a dry cleaning system subject to this subpart.

Desorption means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

Diverter valve means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.

Dry cleaning means the process of cleaning articles using perchloroethylene.

Dry cleaning cycle means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

Dry cleaning facility means an establishment with one or more dry cleaning systems.

Dry cleaning machine means a dry-to-dry machine or each machine of a transfer machine system.

Dry cleaning machine drum means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

Dry cleaning system means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

Dryer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

Dry-to-dry machine means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

Exhaust damper means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

Existing means commenced construction or reconstruction before December 9, 1991.

Filter means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter (button trap), cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

Heating coil means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.

Major source means any dry cleaning facility that meets the conditions of § 63.320(g).

Muck cooker means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

New means commenced construction or reconstruction on or after December 9, 1991.

Perceptible leaks mean any perchloroethylene vapor or liquid leaks that are obvious from:

(1) The odor of perchloroethylene;

(2) Visual observation, such as pools or droplets of liquid; or

(3) The detection of gas flow by passing the fingers over the surface of equipment.

Perchloroethylene consumption means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

Reclaimer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

Reconstruction, for purposes of this subpart, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.

Refrigerated condenser means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

Refrigerated condenser coil means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

Responsible official means one of the following:

(1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more dry cleaning facilities;

(2) For a partnership: A general partner;

(3) For a sole proprietorship: The owner; or

(4) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking official.

Room enclosure means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

Source, for purposes of this subpart, means each dry cleaning system.

Still means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

Temperature sensor means a thermometer or thermocouple used to measure temperature.

Transfer machine system means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

(1) A washer and dryer(s);

(2) A washer and reclaimer(s); or

(3) A dry-to-dry machine and reclaimer(s).

Washer means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

Water separator means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

Year or *Yearly* means any consecutive 12-month period of time.

§ 63.322 Standards.

(a) The owner or operator of each existing dry cleaning system shall comply with either paragraph (a)(1) or (a)(2) of this section and shall comply with paragraph (a)(3) of this section if applicable.

(1) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device.

(2) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993.

(3) Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine

system located at a major source. Each room enclosure shall be:

(i) Constructed of materials impermeable to perchloroethylene; and

(ii) Designed and operated to maintain a negative pressure at each opening at all times that the machine is operating.

(b) The owner or operator of each new dry cleaning system:

(1) Shall route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device;

(2) Shall eliminate any emission of perchloroethylene during the transfer of articles between the washer and dryer(s); and

(3) Shall pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.

(c) The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.

(d) The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

(e) Each refrigerated condenser used for the purposes of complying with paragraph (a) or (b) of this section and installed on a dry-to-dry machine, dryer, or reclaimer:

(1) Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;

(2) Shall be monitored according to § 63.323(a)(1); and

(3) Shall be operated with a diverter valve, which prevents air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.

(f) Each refrigerated condenser used for the purpose of complying with paragraph (a) of this section and installed on a washer:

(1) Shall be operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;

(2) Shall be monitored according to § 63.323(a)(2); and

(3) Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer.

(g) Each carbon adsorber used for the purposes of complying with paragraphs (a) or (b) of this section:

(1) Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and

(2) Shall be monitored according to the applicable requirements in § 63.323 (b) or (c).

(h) Each room enclosure used for the purposes of complying with paragraph (a)(3) of this section:

(1) Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device; and

(2) Shall be equipped with a carbon adsorber that is not the same carbon adsorber used to comply with paragraph (a)(2) or (b)(3) of this section.

(i) The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

(j) The owner or operator of an affected facility shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.

(k) The owner or operator of a dry cleaning system shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:

(1) Hose and pipe connections, fittings, couplings, and valves;

(2) Door gaskets and seatings;

(3) Filter gaskets and seatings;

(4) Pumps;

(5) Solvent tanks and containers;

(6) Water separators;

(7) Muck cookers;

(8) Stills;

(9) Exhaust dampers;

(10) Diverter valves; and

(11) Cartridge filter housings.

(l) The owner or operator of a dry cleaning facility with a total facility consumption below the applicable consumption levels of § 63.320(d) or (e) shall inspect the components listed in paragraph (k) of this section biweekly for perceptible leaks while the dry cleaning system is operating.

(m) The owner or operator of a dry cleaning system shall repair all perceptible leaks detected under paragraph (k) of this section within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within 2 working days of detecting such a leak. Such repair parts shall be installed within 5 working days after receipt.

(n) If parameter values monitored under paragraphs (e), (f), or (g) of this section do not meet the values specified in § 63.323(a), (b), or (c), adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within 2 working days of detecting such a parameter value. Such repair parts shall be installed within 5 working days after receipt.

§ 63.323 Test methods and monitoring.

(a) When a refrigerated condenser is used to comply with § 63.322(a)(1) or (b)(1):

(1) The owner or operator shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal to or less than 7.2 °C (45 °F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2 °C (45 °F) to an accuracy of ± 1.1 °C (±2 °F).

(2) The owner or operator shall calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1 °C (20 °F).

(i) Measurements of the inlet and outlet streams shall be made with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0 °C (32 °F) to 48.9 °C (120 °F) to an accuracy of ± 1.1 °C (± 2 °F).

(ii) The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.

(b) When a carbon adsorber is used to comply with § 63.322(a)(2) or exhaust is passed through a carbon adsorber immediately upon machine door opening to comply with § 63.322(b)(3), the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube, while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber to determine that the perchloroethylene

concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of ± 25 parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.

(c) If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber prior to machine door opening to comply with § 63.322(b)(3), the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 300 parts per million by volume of perchloroethylene in air to an accuracy of ±75 parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Conduct the weekly monitoring by inserting the colorimetric detector tube into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.

(d) When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to § 63.320, the owner or operator shall perform the following calculation on the first day of every month:

(1) Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in § 63.324(d)(1).

(2) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.

(3) The total sum calculated in paragraph (d) of this section is the yearly perchloroethylene consumption at the facility.

§ 63.324 Reporting and recordkeeping requirements.

(a) Each owner or operator of a dry cleaning facility shall submit an initial report signed by a responsible official before a notary public certifying that the information provided in the initial report is accurate and true to the Administrator within 90 calendar days after September 22, 1993, which includes the following:

(1) The name and address of the owner or operator;

(2) The address (that is, physical location) of the dry cleaning facility;

(3) A brief description of the type of each dry cleaning machine at the dry cleaning facility;

(4) Documentation as described in § 63.323(d) of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year to demonstrate applicability according to § 63.320; or an estimation of perchloroethylene consumption for the previous year to estimate applicability with § 63.320; and

(5) A description of the type of control device(s) that will be used to achieve compliance with § 63.322 (a) or (b) and whether the control device(s) is currently in use or will be purchased.

(6) Documentation to demonstrate to the Administrator's satisfaction that each room enclosure used to meet the requirements of § 63 322(a)(3) meets the requirements of § 63.322(a)(3) (i) and (ii).

(b) Each owner or operator of a dry cleaning facility shall submit a statement signed by a responsible official in the presence of a notary public to the Administrator by registered letter on or before the 30th day following the compliance dates specified in § 63.320 (b) or (c), certifying the following:

(1) The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(c) Each owner or operator of an area source dry cleaning facility that exceeds the solvent consumption limit certified in paragraph (b) of this section shall submit a statement signed by a responsible official in the presence of a notary public to the Administrator by registered letter on or before the 30th day following the compliance dates specified in § 63.320(f) or (i), certifying the following:

(1) The new yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(d) Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information and maintain such information on site and show it upon request for a period of 5 years:

(1) The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;

(2) The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in § 63.323(d);

(3) The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in § 63.322(k) or (l), and the name or location of dry cleaning system components where perceptible leaks are detected;

(4) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with § 63.322(m) and (n);

(5) The date and temperature sensor monitoring results, as specified in § 63.323 if a refrigerated condenser is used to comply with § 63.322(a) or (b); and

(6) The date and colorimetric detector tube monitoring results, as specified in § 63.323, if a carbon adsorber is used to comply with § 63.322(a)(2) or (b)(3).

(e) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

§ 63.325 Determination of equivalent emission control technology.

(a) Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements under § 63.322 shall collect, verify, and submit to the Administrator the following information to show that the alternative achieves equivalent emission reductions:

(1) Diagrams, as appropriate, illustrating the emission control technology, its operation and integration into or function with dry-to-dry

machine(s) or transfer machine system(s) and their ancillary equipment during each portion of the normal dry cleaning cycle;

(2) Information quantifying vented perchloroethylene emissions from the dry-to-dry machine(s) or transfer machine system(s) during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;

(3) Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least 1 year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the specific dry cleaning system from which the solvent mileage information was obtained;

(4) Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance of the candidate emission control technology;

(5) Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on the specific dry cleaning system examined;

(6) Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific system(s) examined; and

(7) Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

(b) For the purpose of determining equivalency to control equipment required under § 63.322, the Administrator will evaluate the petition to determine whether equivalent control of perchloroethylene emissions has been adequately demonstrated.

(c) Where the Administrator determines that certain equipment and procedures may be equivalent, the Administrator will publish a notice in the **Federal Register** proposing to consider this equipment or these procedures as equivalent. After notice and opportunity for public hearing, the Administrator will publish the final determination of equivalency in the **Federal Register.**

[FR Doc. 93–23064 Filed 9–21–93; 8:45 am]
BILLING CODE 6560–50–P