



Federal Register

**Wednesday,
December 15, 2010**

Part VI

Environmental Protection Agency

40 CFR Part 82

**Protection of Stratospheric Ozone:
Amendments to the Section 608 Leak
Repair Requirements; Proposed Rule**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 82

[EPA-HQ-OAR-2003-0167; FRL-9238-4]

RIN 2060-AM09

Protection of Stratospheric Ozone: Amendments to the Section 608 Leak Repair Requirements

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking.

SUMMARY: The Environmental Protection Agency (EPA) is proposing changes to the leak repair regulations promulgated under Section 608 of the Clean Air Act Amendments of 1990 (CAA or Act). EPA is proposing to lower the leak repair trigger rates for comfort cooling, commercial refrigeration, and industrial process refrigeration and air-conditioning equipment (*i.e.*, appliances) with ozone-depleting refrigerant charges greater than 50 pounds. This action proposes to streamline existing required practices and associated reporting and recordkeeping requirements by establishing similar leak repair requirements for owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration appliances. This action also proposes to reduce the use and emissions of class I and class II controlled substances (such as but not limited, to CFC-11, CFC-12, HCFC-123, HCFC-22) by requiring the following: Verification and documentation of all repairs, retrofit or retirement of appliances that cannot be sufficiently repaired, mandatory replacement of appliance components that have a history of failures, and mandatory recordkeeping of the determination of the full charge and the fate of recovered refrigerant.

DATES: Written comments on this proposed rule must be received by the EPA Docket on or before February 14, 2011, unless a public hearing is requested. Any party requesting a public hearing must notify the contact listed below under **FOR FURTHER INFORMATION CONTACT** by 5 p.m. Eastern Standard Time on December 29, 2010. If a public hearing is requested, commenters will have until February 28, 2011 to submit comments before the close of the comment period. If a hearing is held, it will take place at EPA headquarters in Washington, DC. EPA will post a notice on our Web site, <http://www.epa.gov/ozone/strathome.html>, announcing

further information should a hearing take place.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2003-0167, by one of the following methods:

- <http://www.regulations.gov>: Follow the on-line instructions for submitting comments.

- *E-mail:* A-and-R-docket@epa.gov.

- *Fax:* 202-343-2338, Attn: Julius Banks.

- *Mail:* Air Docket, Environmental Protection Agency, Mail Code 6102T, 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

- *Hand Delivery or Courier:* Deliver your comments to EPA Air Docket, EPA West, 1301 Constitution Avenue, NW., Room B108, Mail Code 6102T, Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2003-0167. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information that has disclosure restrictions by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov> your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM that you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.html>.

Docket: All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information that has disclosure restrictions by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the Air Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742. A fee may be charged for the copying of documents at the Air Docket facility.

FOR FURTHER INFORMATION CONTACT: Julius Banks; U.S. Environmental Protection Agency; Stratospheric Program Division; Office of Atmospheric Programs; Office of Air and Radiation; Mail Code 6205-J; 1200 Pennsylvania Avenue, NW.; Washington, DC 20460; (202) 343-9870.

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who own, operate, maintain, service, or repair comfort cooling, commercial refrigeration, and industrial process refrigeration appliances. Such entities include, but are not limited to, owners or operators of comfort cooling chillers; refrigerated warehouses; retail food stores, including supermarkets, grocery stores, wholesale markets, supercenters, and convenience stores; beverage and food manufacturers, distributors, and packagers; ice rinks; and other industrial process refrigeration applications. Regulated entities include, but are not limited to, the following:

I. General Information

A. Does this action apply to me?

Categories and entities potentially regulated by this action include those

Category	North American Industry Classification (NAIC) Code	Examples of regulated entities
Industrial Process Refrigeration (IPR).	311, 325, 3118, 3254, 31212, 324110, 312111, 312112, 312113, 713940.	Owners or operators of refrigeration equipment used in the manufacture of pharmaceuticals, frozen food, dairy products, baked goods, food and beverages, petrochemicals, chemicals, ice rinks, ice manufacturing.
Commercial Refrigeration	45291, 49312, 49313, 445110, 445120, 447110.	Owners or operators of refrigerated warehousing and storage facilities, supermarket, grocery, warehouse clubs, supercenters, convenience stores, refrigerated warehousing and storage.
Comfort Cooling	72, 622, 6111, 6112, 6113, 531312.	Owners or operators of air-conditioning equipment used in the following: hospitals, office buildings, colleges and universities, metropolitan transit authorities, real estate rental & leased properties, lodging & food services, property management, schools, public administration or other public institutions.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated and potentially affected by this action. Other types of entities not listed in the table could also be affected. To determine whether your company is regulated by this action, you should carefully examine the applicability criteria contained in section 608 of the CAA Amendments of 1990. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What should I consider as I prepare my comments for EPA?

1. Confidential Business Information (CBI)

Do not submit confidential business information (CBI) to EPA through <http://www.regulations.gov> or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment

that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR 2.2.

2. Tips for Preparing Your Comments

When submitting comments, remember to do the following:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
- Follow directions. The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree with the proposal; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used in preparing your comments.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.

- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

II. Section 608 of the Clean Air Act

Section 608 of the Clean Air Act as amended (CAA, the Act), the *National Recycling and Emissions Reduction Program*, requires EPA to establish regulations governing the use of ozone-depleting substances (ODS) used as refrigerants,¹ such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), during the maintenance, service, or disposal of appliances including air-conditioning and refrigeration equipment. Section 608 also prohibits any person from knowingly venting, or from otherwise knowingly releasing or disposing of ODS used as refrigerants during the maintenance, service, repair, or disposal of air-conditioning and refrigeration equipment.

Section 608 is divided into three subsections. Section 608(a) requires EPA to promulgate regulations to reduce

¹ Refrigerant means, for purposes of 40 CFR part 82, Subpart F, any substance consisting in part or whole of a class I or class II ozone-depleting substance that is used for heat transfer purposes and provides a cooling effect.

the use and emissions of class I substances (*i.e.*, CFCs, halons, carbon tetrachloride, and methyl chloroform) and class II substances (*i.e.*, HCFCs) to the lowest achievable level, and to maximize the recycling of such substances. Section 608(b) requires that the regulations promulgated pursuant to subsection (a) contain requirements for the safe disposal of class I and class II substances. Finally, section 608(c) is a self-effectuating provision that prohibits any person from knowingly venting, releasing or disposing into the environment of any class I or class II substances, and eventually their substitutes, during servicing and disposal of air-conditioning or refrigeration appliances.

EPA's authority to propose the requirements in this Notice of Proposed Rulemaking (NPRM) is based on Section 608(a), which requires EPA to promulgate regulations regarding use and disposal of class I and II substances to "reduce the use and emission of such substances to the lowest achievable level" and "maximize the recapture and recycling of such substances." Section 608(a) further provides that "such regulations may include requirements to use alternative substances (including substances which are not class I or class II substances) . . . or to promote the use of safe alternatives pursuant to section [612] or any combination of the foregoing."

Section 608(c)(1) provides that, effective July 1, 1992, it is "unlawful for any person, in the course of maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration, to knowingly vent or otherwise knowingly release or dispose of any class I or class II substance used as a refrigerant in such appliance (or industrial process refrigeration) in a manner which permits such substance to enter the environment." The statute exempts from this prohibition "[d]e minimis releases associated with good faith attempts to recapture and recycle or safely dispose" of a substance. To implement and enforce the venting prohibitions of this section, EPA, through its regulations, interprets releases to meet the criteria for exempted "de minimis" releases when they occur while the recycling and recovery requirements of sections 608 and 609 regulations are followed. Effective November 15, 1995, section 608(c)(2) of the Act prohibits the knowingly venting or otherwise knowingly release or disposal of any substitute for class I and class II substances by any person maintaining, servicing, repairing, or disposing of air-conditioning and refrigeration

equipment. This prohibition applies unless EPA determines that such venting, releasing, or disposing does not pose a threat to the environment.

III. Leak Repair Regulations

Final regulations promulgated under section 608 of the Act, published on May 14, 1993 (58 FR 28660), established a recycling program for ozone-depleting refrigerants recovered during the servicing and maintenance of air-conditioning and refrigeration appliances. Together with the prohibition on venting during the maintenance, service, repair and disposal of class I and class II ODS (January 22, 1991; 56 FR 2420), these regulations were intended to substantially reduce the use and emissions of ozone-depleting refrigerants.

The May 14, 1993 regulations established leak repair requirements to further minimize emissions of class I and class II substances. The rule states that appliances that hold a refrigerant charge greater than 50 pounds are subject to the leak repair requirements. An annual leak rate of 35 percent was established for industrial process refrigeration and commercial refrigeration appliances, while an annual leak rate of 15 percent was established for comfort cooling appliances. Where the leak rate is exceeded, the appliance must be repaired within 30 days. These regulations were amended August 8, 1995, to provide greater flexibility to owners or operators of industrial process refrigeration appliances (60 FR 40419). Thus an alternative was provided that allows owners or operators to develop a retrofit or replacement plan within 30 days that outlines actions to retrofit or replace the leaking appliance within one year. The leak repair components of the regulations (*i.e.*, definitions, required practices, and associated reporting and recordkeeping requirements) were subsequently revised again in final regulations published on January 11, 2005 (70 FR 1972).

On August 8, 1995, EPA promulgated a final rule (60 FR 40420) in response to a settlement agreement reached by EPA and the Chemical Manufacturers Association (CMA). In that settlement, EPA permitted owners or operators of appliances with refrigerant charges greater than 50 pounds to take additional time, beyond 30 days, to complete repairs and more than one year to retrofit appliances where certain conditions applied (*e.g.*, equipment located in areas subject to radiological contamination, unavailability of

necessary parts, adherence to local or State laws that may hinder immediate repairs). EPA also agreed to clarify that purged emissions that have been captured and destroyed can be excluded from the leak rate calculations.

On January 11, 2005, EPA issued a final rule (70 FR 1972) clarifying that the leak repair requirements apply to any refrigerant substitute that consists of a class I or class II ODS, and amended and added definitions for "full charge" and "leak rate." The final rule amended the required practices and associated reporting/recordkeeping requirements. It also provided clarification to current leak repair requirements. These regulations are applicable to all owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration (as defined at § 82.152) with a refrigerant full charge greater than 50 pounds. Refrigerant is defined at § 82.152 as any substance consisting in part or whole of a class I or class II ODS that is used for heat transfer and provides a cooling effect. Such refrigerants include, but are not limited to, R-11, R-12, R-123, R-22, R-401A, R-402B, R-414B, R-500, and R-502.

While the leak repair regulations are limited to appliances containing more than 50 pounds of refrigerant that leak above the leak repair trigger rate percentage, the leak repair requirements do not grant an exemption to the remainder of the refrigerant regulations at 40 CFR part 82, subpart F. In particular, the leak repair required practices of § 82.156 do not grant an exemption to the statutory venting prohibition for refrigerants or their non-ODS substitutes.

EPA stated in *Section F.—Required Practices* of the original refrigerant recycling final rule (May 14, 1993; 58 FR 28660) that "knowingly venting is any release that permits a class I or class II substance to enter the environment and that takes place during the maintenance, service, repair, or disposal of air-conditioning or refrigeration equipment." In other words, the leak repair requirements do not allow owners or operators to ignore leaks from appliances just because the leak repair trigger rate has not been breached. The aim of the leak repair requirements is to reduce emissions of refrigerants from appliances by mandating repairs that adequately address the leaks within the appliance as a whole, within a set period of time (*i.e.*, 30 days). The leak repair requirements are geared to persuade owners or operators to retrofit or replace appliances that either have a history of leaking or cannot be sufficiently repaired over a period of

time; however, this regulatory framework does not establish an exemption to the venting prohibition of the Act.

EPA is proposing changes to the existing leak repair required practices, in part, to provide a streamlined set of requirements for all owners or operators of comfort cooling, commercial, and IPR appliances with refrigerant (*i.e.*, ODS) charges greater than 50 pounds. EPA believes that the current regulatory structure could be simplified by clarifying existing regulatory definitions, required practices, and recordkeeping and reporting requirements.

In addition to the Agency's proposal to provide clarity to existing regulations, EPA is meeting the CAA Section 608(a) requirement for EPA to promulgate regulations to reduce the use and emissions of class I substances (*i.e.*, CFCs, halons, carbon tetrachloride, and methyl chloroform) and class II substances (*i.e.*, HCFCs) to the lowest achievable level, and to maximize the recycling of such substances by proposing to lower leak repair trigger rates and require appliance owners or operators to maintain service records that will document the ultimate fate of refrigerant that is recovered from appliances during their service and maintenance.

IV. Proposed Revisions to the Leak Repair Regulations

This NPRM proposes changes to the leak repair regulations promulgated at 40 CFR part 82, subpart F. This NPRM proposes changes to the Subpart's purpose and scope, definitions, required practices, and reporting and recordkeeping sections, in order to create a streamlined set of leak repair requirements that are applicable to all types of appliances with large ozone-depleting refrigerant charges (*i.e.*, greater than 50 pounds).

Many of the provisions of this NPRM are meant to clarify existing requirements found at 40 CFR 82.156 and do not impose new requirements. For example, EPA is clarifying the following:

- The purpose and scope of the existing 40 CFR part 82, subpart F regulations apply to owners or operators of air conditioning and refrigeration equipment;
- Editing existing definitions to provide clarity and provide consistency with industry nomenclature;
- That leak repair trigger rates are not an exemption to the statutory refrigerant venting prohibition;
- That leak repair calculations are required upon addition of refrigerant;

- Verification of leak repair efforts is a service record, and should be maintained in compliance with existing recordkeeping and reporting requirements; and

- Defining terms that are referenced but are not defined in the current regulatory text.

In addition to the clarifying aspects of today's NPRM, EPA is proposing to amend the existing required practices and recordkeeping requirements (at § 82.156 and § 82.166, respectively) by proposing the following:

- Lower applicable leak rates for currently regulated appliances;
- Require written verification of all repair attempts for comfort cooling and commercial appliances, and not just industrial process refrigeration equipment (as currently required);
- Exempt addition of refrigerant due to "seasonal variances" from the existing leak repair requirements;
- Allow all appliance owners/operators additional time to complete repairs due to unavailability of components, and not just industrial process refrigeration equipment (as currently required);
- Require service technicians to maintain records on the fate of refrigerant that is recovered from but not returned to appliances during service;
- Decrease the amount of time allowed for the completion of currently required retrofit/retirement plans.

EPA believes that the proposed changes will meet the Clean Air Act requirement, at CAA 608(a)(3), for the Agency to promulgate regulations that reduce use and emissions of ozone-depleting to the lowest achievable level, and maximize the recapture and recycling of such substances. EPA estimates that the proposed amendments to the current regulatory scheme will result in total expected environmental benefits, in terms of avoided ODS refrigerant emissions, is approximately 316 ozone-depleting potential (ODP) weighted tons (approximately 2.8 million metric tons of carbon equivalent (MMTCE)).

EPA has estimated that the projected emissions of the most popular ozone-depleting refrigerant impacted by this NPRM, HCFC-22 (or R-22), between January 1, 2010 and December 31, 2019 is approximately 35,000 ODP² weighted tons. This estimate is based in part on refrigeration and air conditioning equipment charge sizes and leak rates. EPA estimates that this proposal will

² The ODP is the ration of the impact on the stratospheric ozone layer of a chemical compared to the impact of a similar mass of CFC-11. Thus, the ODP of CFC-11 is defined to be 1.0.

account for an annual emissions avoidance of approximately 316 ODP weighted tons or roughly 9% of the estimated emissions of HCFC-22 between January 1, 2010 and December 31, 2019. Additionally, the estimated avoided emissions over a 10-year period of 3,160 ODP weighted tons³ is approximately 7 percent of the estimated 44,000 ODP weighted tons of all allocated HCFC emissions projected for the United States for this same time period. For purposes of a relative comparison, an estimated 316 ODP tons per year of avoided ODS emissions is approximately 11.5 percent of the 2,750 ODP tons that the U.S. has allocated for consumption of all HCFCs for 2010, and approximately 21 percent of the HCFCs allocated for 2015.⁴

EPA believes that the avoided emissions attributed to this NPRM will result in additional health benefits. The links between stratospheric ozone depletion and skin cancer are well established. Other public health concerns include cataracts and immune suppression. Since the appearance of an ozone hole over the Antarctic in the 1980s, Americans have become aware of the health threats posed by ozone depletion, which decreases the atmosphere's ability to protect the earth's surface from the sun's UV rays. The 2006 documents *Scientific Assessment of Ozone Depletion*, prepared by the Scientific Assessment Panel to the Montreal Protocol, and *Environmental Effects of Ozone Depletion and its Interactions with Climate Change*, prepared by the Environmental Effects Assessment Panel (see http://ozone.unep.org/Assessment_Panels/), provide comprehensive information regarding the links between emissions of ODS, ozone layer depletion, UV radiation, and human health effects.

Skin cancer is the most common form of cancer in the U.S., with more than 1,000,000 new cases diagnosed annually (National Cancer Institute, "Common Cancer Types," at <http://www.cancer.gov/cancertopics/commoncancers/>). Melanoma, the most serious form of skin cancer, is also one of the fastest growing types of cancer in the U.S.; melanoma cases in this country have more than doubled in the past two decades, and the rise is expected to continue (Ries, L., Eisner, M.P., Kosary, C.L., *et al.*, eds. *SEER Cancer Statistics Review, 1973-1999*).

³ This is an undiscounted avoided emission.

⁴ In accordance with the Montreal Protocol adjustments from 2007, the 2010 consumption cap for the total basket of HCFCs in the United States is 3,810 ODP tons annually for the years 2010-2014 and 1,524 ODP tons for the years 2015-2020.

Vol 2003. Bethesda (MD): National Cancer Institute; 2002). In 2007, invasive melanoma was expected to strike more than 59,000 Americans and kill more than 8,000 (National Cancer Institute, "Melanomas," at <http://www.cancer.gov.cancertopics/types/melanoma>).

Nonmelanoma skin cancers are less deadly than melanomas. Nevertheless, left untreated, they can spread, causing disfigurement and more serious health problems. There are two primary types of nonmelanoma skin cancers. Basal cell carcinomas are the most common type of skin cancer tumors. They usually appear as small, fleshy bumps or nodules on the head and neck, but can occur on other skin areas. Basal cell carcinoma grows slowly, and rarely spreads to other parts of the body. It can, however, penetrate to the bone and cause considerable damage. Squamous cell carcinomas are tumors that may appear as nodules or as red, scaly patches. This cancer can develop into large masses, and unlike basal cell carcinoma, it can spread to other parts of the body. Other UV-related skin disorders include actinic keratoses and premature aging of the skin. Actinic keratoses are skin growths that occur on body areas exposed to the sun. The face, hands, forearms, and the "V" of the neck are especially susceptible to this type of lesion. Although premalignant, actinic keratoses are a risk factor for squamous cell carcinoma. Chronic exposure to the sun also causes premature aging, which over time can make the skin become thick, wrinkled, and leathery.

Cataracts are a form of eye damage in which a loss of transparency in the lens of the eye clouds vision. If left untreated, cataracts can lead to blindness. Research has shown that UV radiation increases the likelihood of certain cataracts. Although curable with modern eye surgery, cataracts diminish the eyesight of millions of Americans. Other kinds of eye damage include pterygium (*i.e.*, tissue growth that can block vision), skin cancer around the eyes, and degeneration of the macula (*i.e.*, the part of the retina where visual perception is most acute).

A. Purpose and Scope

Currently, EPA describes the purpose of Subpart F as an effort to reduce emissions of class I and class II refrigerants and their substitutes to the lowest achievable level by maximizing the recapture and recycling of such refrigerants during the service, maintenance, repair, and disposal of appliances and restricting the sale of refrigerants consisting in whole or in part of a class I or class II ODS in

accordance with Title VI of the Clean Air Act. The regulations are applicable to any person servicing, maintaining, or repairing appliances. This subpart also applies to persons disposing of appliances, including small appliances and motor vehicle air conditioners. In addition, this subpart applies to refrigerant reclaimers, technician certifying programs, appliance owners or operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing organizations, persons selling class I or class II refrigerants or offering class I or class II refrigerants for sale, and persons purchasing class I or class II refrigerants (69 FR 11978; March 12, 2004).

EPA wishes to clarify that the regulations also apply persons using refrigerants who are owners or operators of appliances with large refrigerant charges. It is not the intent of the Subpart F regulations to exclude such persons; therefore, the Agency proposes to add "use" to paragraph (a) of the Purpose and Scope section to read as follows:

The purpose and scope of this subpart is to reduce the use and emissions of ozone-depleting refrigerants to the lowest achievable level and encourage the use of substitutes, by maximizing the recapture and recycling of such ozone-depleting substances during the use, service, maintenance, repair, and disposal of appliances and by restricting the sale of refrigerants in accordance with Title VI of the Clean Air Act.

EPA requests comment on the inclusion of users to the purpose and scope of Subpart F, specifically as it applies to the leak repair provisions for appliances with ozone-depleting refrigerant charges greater than 50 pounds.

B. Definitions

1. Comfort Cooling Appliance

The leak repair requirements have placed refrigeration and air-conditioning equipment (*i.e.*, appliances) into three categories: comfort cooling (air-conditioning), commercial refrigeration, and industrial process refrigeration appliances. However, EPA has not included a definition of comfort cooling appliance in Subpart F at § 82.152. EPA has relied on equipment that the Agency believes is commonly recognized as "chillers" and light commercial heating, ventilation, and air-conditioning systems that provide cooling and/or humidity control. They may be used for the comfort of occupants or for climate control to protect equipment within a facility, such as in computer rooms.

For purposes of the leak repair requirements, comfort cooling appliances include air-conditioning systems that use refrigerant (with charge sizes greater than 50 pounds) to transfer heat in order to control heat and/or humidity in a facility, such as a commercial office building. EPA considers the sum of all of the cooling system's components as an appliance, meaning that the major components that make up the refrigerant circuit such as the compressor, heat exchangers (condenser and evaporator), and expansion valves are all part of the comfort cooling appliance. Comfort cooling appliances are also comprised of other components such as receivers, filter driers, pumps, manifolds, oil separators, and associated piping.

In order to provide greater clarity to the existing leak repair provisions, EPA proposes to add a definition for *comfort cooling appliance* at § 82.152 that reads as follows: "*Comfort cooling appliance* means any air-conditioning appliance used to provide cooling in order to control heat and/or humidity in facilities, such as office buildings and computer rooms. Comfort cooling appliances include building chillers, as well as roof-top self-contained units typically used to cool small to medium-size office and light commercial buildings. Chillers that would be subject to the leak repair requirements include, but are not limited to, those using R-12, R-11, and R-123. Self-contained units that provide comfort cooling that would be captured by the proposed definition of comfort cooling appliance include, but are not limited to, those using R-22." EPA seeks comment on the applicability of the proposed definition of *comfort cooling appliance* to air-conditioning equipment that is typically used to provide cooling/humidity controlled environments.

2. Commercial Refrigeration Appliance

For the purposes of the leak repair requirements, EPA currently defines commercial refrigeration appliance as:

The refrigeration appliances used in the retail food and cold storage warehouse sectors. Retail includes the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the equipment used to store meat, produce, dairy products, and other perishable goods. All of the equipment contains large refrigerant charges, typically over 75 pounds.

EPA's definition of commercial refrigeration appliance is not limited to the supermarket and grocery store refrigeration systems used to store perishable food items. The definition

also includes appliances using ozone-depleting refrigerants that are used to store or warehouse perishable goods or any other product requiring temperature controlled storage. Such appliances may be found in industrial settings where a manufactured product requires cold storage, but the appliance itself would not be considered as an industrial process refrigeration appliance.

EPA proposes to amend the definition of commercial refrigeration to remove any ambiguity concerning the types of appliances that are subject to the leak repair regulations. The last sentence of the current definition at § 82.152 states, that all of the equipment contains large refrigerant charges, typically over 75 pounds. While accurate, this sentence has caused some confusion as to whether or not the leak repair requirements are applicable to appliances with a full charge of more than 50 pounds as stated in the leak repair required practices or 75 pounds as referenced in the definition of commercial refrigeration appliance. EPA proposes to remove the 75 pound reference from the last sentence of the definition. The Agency feels that it is not required since the threshold for the leak repair requirements is a refrigerant charge greater than 50 pounds. EPA seeks comment on whether the proposed amendment to the definition provides greater clarity to the definition of *commercial refrigeration appliance* and reduces uncertainty regarding the applicability of the leak repair provisions.

Over the past several years, EPA has received questions from the grocery and supermarket sector concerning what constitutes a commercial refrigeration appliance. EPA reminds readers that commercial refrigeration appliances typically found in grocery stores and supermarkets are not limited to what is typically referred to as “a rack” or “compressor rack,” but include the “rack system.” This means that all of the major refrigeration components making up the refrigerant circuit that are typically found in supermarket refrigeration equipment, including the condenser, compressor rack, receiver, evaporator, filter driers, and liquid and suction manifolds comprise the commercial refrigeration appliance. The commercial refrigeration appliance also includes the display cases, walk-in coolers and freezers, field and rack piping, valves, and regulators. EPA will clarify later in this action when retrofits or retirements of commercial refrigeration appliances are required in the commercial refrigeration sector.

EPA’s proposed definition of *commercial refrigeration appliance*

means any refrigeration appliance used to store perishable goods in retail food, cold storage warehousing, or any other sector requiring cold storage. Retail food includes the refrigeration equipment found in supermarkets, grocery and convenience stores, restaurants, and other food service establishments. Cold storage includes the refrigeration equipment used to house perishable goods or any manufactured product requiring refrigerated storage. EPA requests comment on the definition of commercial refrigeration appliance. Specifically, EPA seeks comments on the inclusion of the compressor rack system in the Agency’s current interpretation of what comprises a commercial refrigeration appliance.

3. Critical (Appliance) Component

EPA currently defines *critical component* as a component without which industrial process refrigeration equipment will not function, will be unsafe in its intended environment, and/or will be subject to failures that would cause the industrial process served by the refrigeration appliance to be unsafe. EPA is considering changing the definition to delete the term “critical” and simply define “component.” EPA is also proposing to delete the safety aspect from the definition, because the Agency believes that while safety is vital, it should not be used as a means of distinguishing what meets the proposed revised definition of “component.” EPA considers components as the major parts of the appliance that typically make up the refrigerant circuit such as the compressor, heat exchangers (condenser and evaporator), and valves (*e.g.*, heat recovery, expansion, charging). Other components may include receivers, manifolds, filter driers, and refrigerant piping. EPA believes that the meaning of the definition can be presented without necessarily classifying the component as critical.

The current definition of *critical component* has implications for the leak repair requirements, because owners or operators of industrial process refrigeration appliances may be granted additional time to make repairs, if they can show that repairs cannot be completed within specified timelines due to the amount of time needed to deliver components or their subassemblies. Later in this action, EPA proposes changes to the leak repair requirements that will allow changes to the individual refrigeration appliance components in lieu of retirement of an entire appliance. In addition, EPA is seeking a consistent set of regulations for all types of appliances. The

unavailability of components is not a situation that is unique to owners or operators of industrial process refrigeration appliances. EPA believes that owners or operators of comfort cooling and commercial refrigeration appliances should be granted the same flexibility as owners of industrial process refrigeration appliances when requesting additional time to make repairs due to the unavailability of components. Having similar requirements for all affected appliances also provides for a more consistent set of regulations that should reduce the level of complexity inherent in the current leak repair regulations.

Therefore, EPA is proposing to change the definition so that it is not limited to industrial process refrigeration appliances, but also includes comfort cooling and commercial refrigeration appliances. EPA proposes to replace the current definition of “critical component” with “component,” which will mean an essential appliance component, without which the appliance will not function (*e.g.*, compressor, condenser, evaporator). EPA seeks comment on the proposed change to the definition of critical component.

4. Initial and Follow-Up Verification Tests

Current leak repair requirements at § 82.156 mandate the validation of repairs by both an initial verification and a follow-up verification. The purpose of the initial verification test is to make certain that appliance owners or operators instruct service contractors and technicians to verify repairs as soon as possible, after conclusion of repairs. EPA currently defines the term at § 82.152 to read in part: “those leak tests that are conducted as soon as practicable after the repair is completed. An initial verification test, with regard to the leak repairs that require the evacuation of the appliance or portion of the appliance, means a test conducted prior to the replacement of the full refrigerant charge and before the appliance or portion of the appliance has reached operation at normal operating characteristics and conditions of temperature and pressure. An initial verification test with regard to repairs conducted without the evacuation of the refrigerant charge means a test conducted as soon as practicable after the conclusion of the repair work.”

The purpose of the follow-up verification is to make certain that service personnel return to check the efficacy of repair efforts after the appliance is operating under normal operational characteristics and

conditions. Follow-up verification tests involve the additional verification of repairs by checking the repairs within 30 days of the appliance's returning to normal operating characteristics and conditions. EPA currently defines the term at § 82.152 to read in part: "those tests that involve checking the repairs within 30 days of the appliance's returning to normal operating characteristics and conditions. Follow-up verification tests for appliances from which the refrigerant charge has been evacuated means a test conducted after the appliance or portion of the appliance has resumed operation at normal operating characteristics and conditions of temperature and pressure, except in cases where sound professional judgment dictates that these tests will be more meaningful if performed prior to the return to normal operating characteristics and conditions. A follow-up verification test with respect to repairs conducted without evacuation of the refrigerant charge means an additional verification test conducted after the initial verification test and usually within 30 days of normal operating conditions. Where an appliance is not evacuated, it is only necessary to conclude any required changes in pressure, temperature or other conditions to return the appliance to normal operating characteristics and conditions."

EPA believes that it is common practice for technicians and contractors to perform verification immediately upon completion of repairs; however, it has been reported to EPA that many owners or operators have follow-up verifications performed immediately upon completion of the initial verification. The intent of the follow-up verification is for appliance owners or operators to conduct verification of repairs after the appliance has operated under normal conditions over an extended period of time (but no longer than 30 days), in order to ensure that the repairs hold under normal operating conditions.

EPA is proposing to amend the definition of *follow-up verification* to reduce the likelihood of repeat repair attempts and subsequent releases of refrigerant by making the tests applicable to comfort cooling and commercial refrigeration appliances as well as industrial process refrigeration appliances. EPA proposes to require owners or operators of commercial, comfort cooling, and industrial process refrigeration appliances with refrigerant charges greater than 50 pounds to perform follow-up verifications after the repaired appliance has operated under normal conditions for an extended

period of time. EPA proposes that once the appliance returns to normal operating characteristics and conditions, that follow-up verification tests occur no sooner than one full day (*i.e.*, 24 hours) after the repairs to the leaking appliance have been completed, but within 30 days of the appliance repair. EPA is proposing a definition that reads:

Follow-up verification test means a test that validates the effectiveness of repairs within 30 days of the appliance's return to normal operating characteristics and conditions but no sooner than 24 hours after completion of repairs. Follow-up verification tests include, but are not limited to, the use of soap bubbles, electronic or ultrasonic leak detectors, pressure or vacuum tests, fluorescent dye and black light, infrared or near infrared tests, and handheld gas detection devices.

While EPA is not specifying one specific test to satisfy the definition of follow-up verification, the Agency is including in the proposed definition several means of conducting verification tests. These methods are not meant to be all-inclusive, but are intended to provide examples of known methodologies of performing leak repair verification tests.

EPA provides additional discussion of both initial and follow-up verification tests and the proposal to extend the requirement to perform such tests to comfort cooling and commercial refrigeration appliances in Section C.4 of today's proposed rule. EPA requests comment on the proposed amendment to the definition of follow-up verification. In particular, the Agency is asking for public comment on the selection of 24 hours as an appropriate amount of time, at a minimum, that must transpire before owners or operators have follow-up verification tests performed on appliances that are subject to the leak repair requirements.

5. Full Charge and Seasonal Variance

Compliance with the leak repair requirements requires calculating both the full charge of the appliance and the leak rate. By definition of leak rate (at § 82.152), appliance owners or operators cannot make a determination of the leak rate without knowledge of the appliance's full charge. EPA has provided flexibility in the determination of full charge by allowing appliance owners or operators to select from an array of options in determining the full charge. EPA has never mandated one particular method, and in fact relies on the appliance owner or operator's determination of the appliance's full charge.

EPA currently defines *full charge* at § 82.152 as: "the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one or a combination of the following four methods: (1) Use the equipment manufacturer's determination of the correct full charge for the equipment; (2) Determine the full charge by making appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations; (3) Use actual measurements of the amount of refrigerant added or evacuated from the appliance; and/or (4) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge, and where records are maintained in accordance with § 82.166(q)."

EPA believes that the four methods allow owners or operators to either rely on manufacturer's data, actual refrigerant weights, or their own engineering and operating experience with their appliances in order to determine the full charge. EPA understands that in some instances manufacturer's data might not be available. The Agency also understands that some appliances, such as commercial refrigeration and industrial process refrigeration appliances, are unique in nature and erected in the field, and that attempts to shutdown operations in order to recover and weigh the refrigerant charge may not always be practical for these appliances.

EPA believes that an option allowing a combination of methodologies is not in line with one of the goals of this NPRM to create a streamlined set of regulatory requirements. Therefore, EPA seeks comment on the proposal to remove the option of allowing a combination of the methods, while continuing to allow owners or operators to use any one method of their choosing in determining the full charge.

EPA believes that records documenting the determination of the full charge should be maintained. This is especially true in instances where the owner or operator is relying on calculations or engineering estimates to determine the full charge. The leak repair requirements currently have such a requirement, but only for those owners or operators choosing to determine the full charge by using an established range in their estimate. Therefore, EPA is proposing a change in the definition of full charge that requires the maintenance of a written record documenting the determination of the

full charge, regardless of the means used to make such a determination. EPA does not believe that this proposed change will result in additional burden since owners or operators must determine the full charge of the appliance in order to comply with the existing leak repair required practices, at § 82.156. By definition (of leak rate at § 82.152) owners or operators would need to make a determination of the equipment's full charge in order to determine steps required to comply with existing regulations. EPA requests comment on its assertion that the proposed definition of leak rate will not pose additional burden, since owners or operators would need to make a determination of the equipment's full charge in order to determine steps required to comply with existing regulations. Further discussion on the recordkeeping requirement for determination of the full charge is provided in Section D.4.

Owners or operators of commercial and industrial process refrigeration appliances have expressed concerns that the full charge may not be accurately determined due to seasonal variances that may alter the amount of refrigerant in an appliance. Ambient conditions and other factors may affect the amount of refrigerant in certain appliance components, but such variances do not mean that the full charge cannot be determined. EPA believes that owners or operators can estimate the effect that seasonal variances have on appliance components by making calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations. While seasonal variances in ambient temperature and pressure have the effect of forcing refrigerant to different appliance components (for example, from an appliance's receiver to the condenser), the Agency does not support the notion that seasonal variances cause the refrigerant to be emitted to the atmosphere.

EPA believes that regulatory flexibility should be considered as a regulatory option by allowing owners or operators to take seasonal variances into account in determining the full charge. EPA is proposing to amend the second option by including seasonal variances as well as other relevant considerations. EPA is also proposing to add a definition for seasonal variance, at § 82.152, that reads: The need to add refrigerant to an appliance due to a change in ambient conditions caused by a change in season, followed by the subsequent removal of refrigerant in the corresponding change in season, where both the addition and removal of

refrigerant occurs within one consecutive 12-month period.

The proposed definition of "full charge" means the amount of refrigerant required for normal operating characteristics and conditions of the appliance, as determined by using one of the following four methods: (1) Use the equipment manufacturer's determination of the full charge; (2) Use appropriate calculations based on component sizes, density of refrigerant, volume of piping, seasonal variances, and other relevant considerations; (3) Use actual measurements of the amount of refrigerant added or evacuated from the appliance; or (4) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge. EPA intends for owners or operators of affected appliances to commit to one methodology in determining the full charge for the life of the appliance. EPA seeks comment on whether the proposed changes have any impact or burden on an owner or operator's ability to determine the full charge.

6. Industrial Process Refrigeration

Industrial process refrigeration appliances include a vast array of refrigeration equipment used in manufacturing or production processes. Such appliances may be used to generate electricity, process or create food and beverages, manufacture pharmaceuticals or chemicals, or in any other process that is essential to the manufacture of an end product. EPA differentiates industrial process refrigeration from comfort cooling or commercial refrigeration appliances in that the end product cannot be completely manufactured in the absence of such refrigeration appliances. Currently, the definition of industrial process refrigeration reads:

Industrial process refrigeration means, for the purposes of § 82.156(i), complex customized appliances used in the chemical, pharmaceutical, petrochemical and manufacturing industries. These appliances are directly linked to the industrial process. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration.

EPA is proposing to clarify that the definition of industrial process refrigeration includes the industrial process refrigeration appliances found

in an array of manufacturing industries. In addition, EPA does not see a need to cross-reference the required practices in the definition and is also proposing to remove the cross-reference to § 82.156(i). The proposed definition of "industrial process refrigeration appliance" means refrigeration equipment, that may be complex or customized, that is used in a manufacturing process. Industrial process refrigeration appliances include refrigeration equipment that is directly linked to a manufacturing process, including but not limited to appliances used in the chemical; pharmaceutical; petrochemical; food or beverage manufacturing, packaging or processing; power generation; and industrial ice manufacturing industries. Where one appliance is used for both industrial process refrigeration and another type of refrigeration or air-conditioning application, the appliance will be considered an industrial process refrigeration appliance if 50 percent or more of its operating capacity is used for industrial process refrigeration. EPA views these amendments as clarifications and not as substantive changes from the current definition. However, EPA seeks public comment on the proposed clarifications.

EPA is proposing a parallel change to the definition of industrial *process shutdown* by removing the reference to § 82.156(i). As noted above, EPA does not see the need to cross-reference required practices in the definition. Further discussion of the deletion of the definition of *industrial process shutdown* is provided in section C.5, "Extension to repair and retrofit and retirement timelines," of today's NPRM.

7. Leak Rate

EPA published a final rule on leak repair (January 11, 2005; 70 FR 1975) that discussed in detail the advantages and disadvantages of using the EPA annualized method or rolling average method as described in the definition of "leak rate" at § 82.152. EPA believes that there are advantages and disadvantages to each approach. The annualizing method may capture some leaks more quickly than the rolling average, and in some instances may cause a delay in repairs by owners or operators whose appliances leak slowly but show no signs of leakage until a relatively large percentage of the refrigerant charge has been lost. Whereas, the rolling average method may capture sudden leaks more quickly than the annualizing method and may permit owners or operators to delay repair of certain types of leaks longer than the annualizing method. The current definition of "leak repair"

contains two methods. Method 1—The Annualizing Method is summarized as follows:

$$\begin{array}{l} \text{Leak rate} = \text{pounds of refrigerant added} \qquad \qquad \qquad 365 \text{ days} \\ \text{(\% per year)} \quad \text{-----} \quad \text{X} \quad \text{-----} \quad \text{X} \quad 100\% \\ \qquad \qquad \qquad \text{pounds of refrigerant in full charge} \quad \text{shorter of \# days since refrigerant} \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{last added or 365 days} \end{array}$$

This method does not allow for the time period over which leaks are evaluated to extend beyond 365 days, because it annualizes by multiplying the percentage of refrigerant lost by the shorter of the number of days since refrigerant was last added to the appliance or 365 days. Method 2—The Rolling Average Method is summarized as follows:

$$\begin{array}{l} \text{Leak rate} = \text{pounds of refrigerant added over past 365 days} \\ \text{(\% per year)} \quad \text{(or since leaks were last repaired, if that period is less than one year)} \\ \text{-----} \quad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{X} \quad 100\% \\ \text{pounds of refrigerant in full charge} \end{array}$$

Similarly, this method does not allow for the time period over which leaks are evaluated to extend beyond 365 days, because it aggregates the amount of refrigerant added to the appliance over the past 365 days or since the last time that repairs were made if that period is less than one year.

In an effort to provide greater clarity to the leak repair requirements, EPA is proposing to change the definition of leak rate by removing the annualizing method (*i.e.*, Method 1). EPA understands that many appliance owners or operators have chosen to use the Annualizing Method; however, EPA believes that the Rolling Average Method is more in line with what most in the regulated community would consider as a true rolling average. It takes a true snapshot of the amount of refrigerant that is added to an appliance over a consecutive 12-month period by simply looking at the ratio of the amount of refrigerant added over the last consecutive 12-month period and the full charge. EPA requests comment

on the exclusive use of the rolling average method in defining the term “leak rate.” EPA has considered an option to maintain the current definition of leak rate, but believes that the current leak repair requirements raise the question of when a leak event ceases. In other words, when does the leak repair clock start over? While the definition of leak rate is limited to a consecutive 12-month period, there is no linkage to an event that would show due diligence in making repairs or verification that the repairs did indeed hold, thus providing a rationale for closing the leak event. EPA believes that such rationale is found in the verification of repairs. The leak repair clock for a leak event should be stopped after successful initial verification and follow-up verification and documentation of repairs for all leaks. EPA is proposing to amend the leak rate definition such that it is dependent upon the successful completion of a follow-up verification test. EPA is also proposing to delete

“measured” from the definition of leak rate. This change is warranted because the rate is based upon a calculation that in itself is not a physical measurement but a calculation. The proposed definition of leak rate reads:
The rate at which an appliance is losing refrigerant, calculated at the time of refrigerant addition. The leak rate is expressed in terms of the percentage of the appliance’s full charge that has been lost since the last successful repair over a consecutive 12-month period, and is calculated by:
(i) Step 1. Taking the number of pounds of refrigerant added to the appliance since the last successful follow-up verification or the number of pounds of refrigerant added during the previous 365-day period (if the last successful follow-up verification occurred more than one year ago); (ii) Step 2. Divide the result of Step 1. by the number of pounds of refrigerant the appliance contains at full charge; (iii) Step 3. Multiply the result of Step 2. by 100 to obtain a percentage. This method is summarized in the following formula:

$$\begin{array}{l} \text{Leak rate} = \text{pounds of refrigerant added since last successful follow-up verification} \\ \text{(\% per year)} \quad \text{(or during the past 365 days if that period is greater than one year)} \\ \text{-----} \quad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{X} \quad 100\% \\ \text{pounds of refrigerant in full charge} \end{array}$$

EPA seeks comment on the proposed changes to the definition of leak rate. In particular, EPA requests comment on the clarity provided by linking leak rate to the requirement to perform and successfully pass an initial and follow-up verification test.

8. Normal Operating Characteristics or Conditions

The current definition of *Normal operating characteristics or conditions*, found at § 82.152, means for the purposes of § 82.156(i), temperatures, pressures, fluid flows, speeds and other characteristics that would normally be expected for a given process load and ambient condition during operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the refrigeration appliance.

As a part of today's NPRM, EPA is suggesting several edits to the leak repair required practices at § 82.156(i). EPA does not see a need to cross-reference the required practices, so the Agency is proposing to remove the reference to § 82.156(i). Therefore the reference to § 82.156(i) would also need to change. EPA is also proposing to add a reference to the appliance's "full charge" in defining *normal operating characteristics or conditions*. EPA believes that the appliance's full charge is a state of its normal characteristics and should be reflected as such in the definition. EPA's proposed definition of Normal operating characteristics and conditions means the appliance operating temperatures, pressures, fluid flows, speeds and other characteristics, including full charge of the appliance, that would be expected for a given process load and ambient condition during operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the refrigeration appliance. EPA views these amendments as minor edits that provide consistency with similar proposed edits and is not considering or proposing other changes to the definition. EPA seeks comment on the effectiveness of the proposed changes to delete the reference to § 82.156(i) and include a reference to the appliance's full charge.

9. Retrofit, Repair, and Retire

Many appliance owners or operators have incorrectly equated the two terms retrofit and repair. EPA does not view a retrofit or the need to retrofit as a repair. EPA considers a repair as an action that addresses the leaking appliance or more specifically the affected component(s) of the leaking appliance. Repairs may include replacement of components or component subassemblies, whereas a retrofit involves the conversion of an appliance so that it is compatible for use with a substitute with a lower ODP. Retrofits often require changes to the appliance (for example, change in

lubricants, filter driers, gaskets, o-rings, and in some cases, changes in components) in order to acquire system compatibility.

EPA considers substitutes as those alternatives for ODS refrigerants that have been found acceptable for use in a specified refrigeration or air-conditioning end-use, in accordance with Section 612 of the Clean Air Act (*i.e.*, the EPA Significant New Alternatives Policy (SNAP) program codified at 40 CFR part 82, subpart G). The current definition of substitute at § 82.152 means any chemical or product, whether existing or new, that is used by any person as an EPA approved replacement for a class I or II ozone-depleting substance in a given refrigeration or air-conditioning end-use. Whereas, a refrigerant, as defined at § 82.152, "means any substance consisting in part or whole of a class I or class II ozone-depleting substance that is used for heat transfer purposes and provides a cooling effect." Therefore, for purposes of the Section 608 refrigerant regulations (including the leak repair requirements), EPA considers any substance used to provide a cooling effect that consists of an ODS as a *refrigerant*. Therefore, a class II substance used as substitute for a class I that has been found acceptable under SNAP for any specific refrigeration or air-conditioning end-use may also be considered a refrigerant (*e.g.*, the use of R-22 as a SNAP-acceptable substitute for R-502 in retail food refrigeration or commercial refrigeration). Similarly, refrigerants could include SNAP-acceptable substitutes if such substitutes were/are a blend in which at least one of its components is an ODS (*e.g.*, the use of R-401A as a SNAP-acceptable substitute for R-12 in retail food refrigeration or commercial refrigeration).

Current leak repair requirements limit retrofits to conversion of IPR appliances so that they are compatible for use with refrigerants with a lower or equivalent ODP or substitutes with an equivalent or lower ODP (§ 82.156(i)(7)). As the U.S. completes the phaseout of class II ODS, such as HCFC-22,⁵ EPA believes that it is not reasonable to allow an appliance retrofit to a substitute with an equivalent ODP. EPA also believes that

⁵ As of January 1, 2010, EPA has banned the production and importation of HCFC-142b and HCFC-22, except for use in equipment manufactured before 1/1/2010 (so no production or importing for NEW equipment that uses these refrigerants). As of January 21, 2003, no person may import class II ODS (such as HCFC-22) in excess of their EPA granted consumption allowance (40 CFR 82.15(b)).

a retrofit must include a change in refrigerant.

The concern with the current definition is that by allowing a retrofit to a refrigerant with an equivalent ODP, the Agency could unintentionally permit the continued use of the same refrigerant that leaked from the appliance. EPA does not feel that such action is a retrofit. Nor does EPA believe that such action meets the intent of the regulations to reduce the use and emissions of ODS by having such systems retrofitted (*i.e.*, converted) to a non-ODS; therefore, the Agency feels that clarification is warranted.

EPA is also concerned that the leak repair requirements could be misinterpreted as requiring the retrofit of appliances without addressing leaks. In order to address these concerns and provide regulatory clarity, EPA is proposing a definition for "retrofit" that means the repair and conversion of an appliance from a refrigerant to a substitute with a lower ozone-depleting potential. Retrofit includes the conversion of the appliance to achieve system compatibility with the new substitute and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components. EPA believes that it is unlikely that a SNAP-acceptable alternative for a specific refrigeration or air-conditioning end-use would have an equivalent ODP to the refrigerant being replaced.⁶ EPA seeks comment on the proposed definition of retrofit as it relates to the conversion of leaking appliances, and the likelihood that a SNAP-acceptable alternative for a specific stationary refrigeration or air-conditioning end-use would have an equivalent ODP to the (ODS) refrigerant being replaced.

EPA has not finalized a definition of retire, retirement, or retired even though these terms are referenced throughout the leak repair regulations. EPA considers retirement of appliances to mean the disassembly and retirement of the entire appliance including its major components, such that the appliance as a whole cannot be used by any person in the future. Retirement means that any remaining refrigerant would be recovered from the appliance and properly stored for reuse by the same owner, unless that recovered refrigerant is reclaimed or destroyed. Recovery efforts would be followed by the

⁶ The intended effect of the SNAP program is to expedite movement away from ozone depleting substances while avoiding a shift into high-risk substitutes posing other environmental problems. EPA considers energy savings, flammability, and toxicity, in addition to ozone depletion potential, in its SNAP review.

dismantling and proper disposal of the compliance components. Hence, retirement does not mean that the appliance is undergoing "system mothballing," as defined at § 82.152,⁷ until it is ready to be used once again. Retirement should also not be confused with a repair. Repair may include the removal of a faulty component, but such removal does not mean that the appliance as a whole has been retired.

In order to make this distinction between a repair, system mothballing, and retirement, EPA is proposing to define "retire" as the permanent removal from service of the entire appliance rendering it unfit for use by the current or any future owner or operator. EPA requests comment on the proposed definition of retire, and the distinction that it provides with respect to the term repair.

C. Required Practices

Final regulations promulgated by EPA under section 608 of the Act (58 FR 28660; May 14, 1993), established leak repair requirements at § 82.156 to further minimize emissions of class I and class II ODS used as refrigerants. The rule states that appliances that normally hold a refrigerant charge greater than 50 pounds are subject to the leak repair requirements. An annual leak rate of 35 percent of the full charge was established for industrial process refrigeration and commercial refrigeration appliances, while an annual leak rate of 15 percent was established for comfort cooling appliances.

1. Repair of Leaks and Leak Repair Trigger Rates

The goal of the required practices, found at § 82.156, is to reduce refrigerant emissions by encouraging owners or operators of industrial process refrigeration, comfort cooling, and commercial refrigeration appliances to successfully repair appliances or retrofit (*i.e.*, convert), retire, or replace leaking refrigeration and air-conditioning equipment (*i.e.*, appliances) that cannot be successfully repaired or maintained. One of the goals of the leak repair regulations is to address the repair and maintenance of appliances with large refrigerant charges, particularly as they age. Via regulation, EPA has intended to reduce the use and emissions of ozone-

depleting refrigerants by requiring owners or operators of appliances to effectively address leaks in their appliances, and to replace, retrofit, or retire appliances that cannot be effectively repaired, hence breaking cycles of repeat repair attempts followed by refrigerant recharges. EPA has occasionally found that owners or operators of appliances make repair attempts followed by refrigerant recharge multiple times, sometimes over the span of just a few months. Such repetitive actions unnecessarily increase emissions of refrigerant to the atmosphere. These actions are amplified when taking into account the large charge size of some appliances.

EPA's aim is to reduce emissions by breaking the cycle of repair and recharge of appliances. Often owners or operators state that they always make repairs, and in some refrigeration end-uses, repairs must be made in order to remain in business. EPA does not dispute this point, but repeated repair attempts, without verifying repairs, followed by additional refrigerant recharges have adverse effects on the environment. In many instances, repeated repair attempts result in hundreds of pounds of refrigerant released into the atmosphere by one appliance. The aim of the leak repair regulations is to reduce emissions of refrigerants to the lowest achievable level by addressing leaks, specifically components with common failures. Repeat component failures may be an indication of a greater maintenance issue or the end of the equipment's useful lifetime.

The required practices at § 82.156 currently require owners or operators of industrial process refrigeration (§ 82.156(i)(2)), comfort cooling (§ 82.156(i)(5)), and commercial refrigeration appliances (§ 82.156(i)(1)) with refrigerant charges of more than 50 pounds to repair leaks within 30 days, unless owners or operators decide to immediately retrofit or retire the appliance. Retrofit or retirement plans must be completed within 30 days of discovering the leak and must be fully implemented within one-year of the plan's date. For those appliances not undergoing retrofit or retirement, the repairs must bring the leak rate to below the applicable leak rate of 35 or 15 percent.

This requirement has allowed scenarios where owners or operators could decide to not repair all known leaks within an appliance, as long as repair efforts brought the leak rate of the appliance to beneath the associated leak rate. The problem with such a scenario is that owners or operators may assume that they have complied with the leak

repair requirements, but may find themselves out of compliance if another leak resulting in a calculated leak rate greater than the applicable trigger rate occurs shortly after the initial repair effort was completed. Absent repair verification, the owner or operator may not know that the appliance's leak rate was brought beneath the applicable leak repair trigger rate until the next addition of refrigerant.

EPA is proposing changes that will reduce the opportunity for selective repair of appliances. Leaving some appliance leaks unattended does not reduce emissions of refrigerants to the lowest achievable level. Since selective repairs can result in excessive refrigerant emissions to the atmosphere, with associated human health and environment impacts, and have the potential to hinder compliance with the leak repair requirements, EPA is proposing that owners or operators of comfort cooling, industrial process refrigeration, or commercial refrigeration appliances with a full charge greater than 50 pounds of refrigerant repair all leaks within the appliance within 30 days, if the leak rate exceeds the applicable leak repair trigger rate.

This proposal, if promulgated, means that appliance owners or operators cannot be selective about repairs made to appliances that leak in excess of the leak repair trigger rate, since the leaks would have to be repaired within 30 days of the date that the appliance's leak rate exceeds the leak repair trigger rate. EPA believes that this proposal will remove ambiguity concerning compliance with the leak repair requirements by requiring the repair of all leaks once the leak repair trigger rate has been breached; thereby removing any question as to whether a repair attempt was sufficient. EPA understands that some level of refrigerant leakage from appliance valves, seals, gaskets, and other fittings occurs. By requiring owners or operators to repair "all" leaks once the leak repair trigger rate has been breached, it is not EPA's intent to require that owners or operators address leaks from such fittings. However, EPA strongly encourages appliance owners or operators to address leaks from fittings as an additional means of reducing emissions, especially if addressing such leaks will reduce the leak rate of the appliance. EPA requests comment on the proposed requirement to repair all leaks within 30 days of discovery when the appliance leaks above the respective leak repair trigger rate.

The current and proposed requirement to repair leaks references

⁷ System mothballing means the intentional shutting down of a refrigeration appliance undertaken for an extended period of time by the owners or operators of that facility, where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance, at least to atmospheric pressure.

leak rate. Leak rate, as currently defined at § 82.152, allows two methods for calculating the leak rate that projects the percentage of leakage over a consecutive 12-month period. Current required practices do not mandate the calculation of the leak rate each time that refrigerant is added to the appliance. Such action is implied since owners or operators may not be able to determine compliance without calculating the leak rate each time refrigerant is added to the appliance. For example, if a commercial refrigeration appliance owner adds refrigerant to the appliance but does not calculate the leak rate, the owner would have no means of determining if the appliance's leak rate was kept beneath 35 percent. Hence, the owner would not know if further action was warranted. In order to reinforce the required practices, EPA is proposing language that would require the calculation of the leak rate (as defined at § 82.152) upon each addition of refrigerant to the appliance, unless the addition is made in order to recharge refrigerant immediately following a retrofit or the addition is made to counter a seasonal variance (where records documenting the seasonal variance are maintained as proposed at § 82.166). EPA views these proposed requirements as reinforcements of a requirement by reference that will aid in the interpretation of the leak repair regulations. EPA seeks comment on the proposed changes to the required practices at § 82.156.

a. Applicable Leak Rate for Commercial, Comfort Cooling, and Industrial Process Refrigeration Appliances

The intent of proposing lower leak repair trigger rates is to reduce use and emissions of ozone-depleting refrigerants from appliances with large refrigerant charges, particularly as they age. EPA believes that this is best accomplished by tightening existing regulations and requiring repair of

appliances, possible retrofit or conversion of ODS appliances, and possible appliance replacement of components when they cannot be satisfactorily maintained or repaired within the specified timelines.

Many owners or operators of appliances (particularly commercial refrigeration and industrial process refrigeration appliance owners or operators) have stated that they always repair leaks, and must do so in order for their businesses to remain viable. Comments provided in response to the June 11, 1998 NPRM (63 FR 32044), by The National Grocers Association (NGA) echo this point. The NGA commented in response to the 1998 proposed rule that, “* * * Eliminating leaks is a primary concern in designing new refrigeration equipment. Systems are being made tighter and new equipment may also reduce the refrigerant charge. For obvious reasons, the older the refrigeration system is, the higher the leak rate.” Such statements are reinforced by EPA evaluation of leak reports submitted to the Agency from owners or operators of industrial process refrigeration, commercial supermarket chains, and chillers of various sizes and refrigerant types. Review of this data shows that many leaks from comfort cooling, commercial refrigeration, and industrial process refrigeration appliances with more than 50 pounds of refrigerant are caused by catastrophic events, and often times repairs can and do occur within 30 days. EPA agrees that many businesses are dependent upon repair of appliances and that it may not be in the best financial interests of many appliance owners or operators to allow their appliances to continue to leak. Hence, the Agency views the leak repair trigger rates and the leak repair requirements as a reinforcement of current repair practices, while further reducing the use and emissions of ozone-depleting refrigerants.

As a means of reducing emissions of ozone-depleting substances to the lowest achievable level, EPA is proposing to tighten the 15 and 35 percent leak repair trigger rates for comfort cooling, commercial refrigeration, and IPR appliances. EPA has considered multiple leak repair trigger rates of: (1) 5% for comfort cooling and 10% for commercial refrigeration and IPR appliances; (2) 5% for comfort cooling and 20% for commercial refrigeration and IPR appliances; (3) 5% for comfort cooling and 30% for commercial refrigeration and IPR appliances; (4) 10% for comfort cooling and 10% for commercial refrigeration and IPR appliances; (5) 10% for comfort cooling and 20% for commercial refrigeration and IPR appliances; and (6) 10% for comfort cooling and 30% for commercial refrigeration and IPR appliances. Within each option, EPA has considered whether additional emissions reduction is gained by requiring: (1) the replacement of leaking appliance components after the failure of repair verification; or by (2) maintaining the existing regulatory flexibility allowing owners/operators to make unlimited attempts at repair (followed by subsequent refrigerant recharges) without a mandate to actually replace a leaking component.

Under the first scenario, leaking components that fail verification tests must be replaced within 30 days. Under the second scenario, the owners or operators must still make repairs to leaking appliances, but owners or operators have the discretion to determine whether or not repairs will include the replacement of leaking components. Under both scenarios, repairs must be completed within 30 days of leak detection, and verifications (immediate and follow-up within 30 days) must be conducted. A summary of the scenarios with estimated costs and benefits is summarized as follows:

COSTS AND BENEFITS OF REGULATORY OPTIONS

Option	Costs (million dollars)	Benefits (ODP-weighted tonnes)	Monetized Benefits at 3% discount rate (million dollars)
Scenario 1:			
1 (5% and 10%)	\$135.6	493	\$2.5
2 (5% and 20%)	111.0	394	2.0
3 (5% and 30%)	92.2	273	1.4
4 (10% and 10%)	129.9	483	2.5
5 (10% and 20%)	105.3	384	2.0
6 (10% and 30%)	86.5	263	1.3
Scenario 2:			
1 (5% and 10%)	53.2	423	2.2
2 (5% and 20%)	40.9	326	1.7
3 (5% and 30%)	31.1	208	1.1
4 (10% and 10%)	50.5	413	2.1

COSTS AND BENEFITS OF REGULATORY OPTIONS—Continued

Option	Costs (million dollars)	Benefits (ODP-weighted tonnes)	Monetized Benefits at 3% discount rate (million dollars)
5 (10% and 20%)	38.2	316	1.6
6 (10% and 30%)	28.5	198	1.0

Based in part on EPA analysis (see accompanying *Screening Analysis to Examine the Economic Impact of Proposed Revisions to the Refrigerant Recycling and Emissions Rule*, EPA Docket ID No. EPA-HQ-OAR-2003-0167), the Agency has decided to propose a reduction of the leak repair trigger rate for comfort cooling appliances from 15 to 10 percent and for commercial refrigeration appliance and industrial process refrigeration appliances from 35 to 20 percent. EPA believes that this combination of leak repair trigger rates provides for continued flexibility in allowing appliance owners or operators to decide upon the necessary action needed to repair leaking appliances, and also provides for additional environmental benefit in terms of avoided refrigerant emissions. EPA estimates that the total expected annual incremental cost of the proposed options across all affected sectors is between \$86.5 million and \$135.6 million for the six options under the first scenario (requiring component replacement), and between \$28.5 million and \$53.2 million for the six options under the second scenario. EPA also estimates that a reduction of the leak repair trigger rate for comfort cooling appliances from 15 to 10 percent and for commercial refrigeration appliance and industrial process refrigeration appliances from 35 to 20 percent will result in the lowest costs at \$38.2 million, with the largest environmental benefit 316 ODP weighted tons, when compared to the other five options that were considered. EPA requests comment on the estimated costs associated with this NPRM.

The proposed 10 and 20 percent leak rates are not viewed by EPA as the optimal leak rate that can be achieved by appliances at the point of original installation or as the appliance ages. Nor does the Agency view the leak repair trigger rates as an exemption to the CAA statutory venting prohibition. The leak rates are a trigger point that requires that the appliance be repaired, retired, or retrofitted by a set date (e.g., 30 days from addition of refrigerant). It is not necessarily a violation for an appliance owner or operator to discover a leak greater than the leak repair trigger rate; however, it would be a violation of the

proposed required practices at § 82.156 to allow that appliance to continue to leak above the trigger rate without making and verifying the efficacy of repairs in a timely manner. EPA would expect that appliances would undergo more repairs as they age. It is also expected that the overwhelming majority of appliances that are at least 10 years of age would contain ozone-depleting refrigerants. The result is that it is reasonable to expect that the majority of older ODS appliances will leak with more frequency in the near future, thus increasing the likelihood that incidences of repair attempts and refrigerant recharges would increase over time for these aging appliances.

Therein lies the benefit of the leak repair regulations. A prohibition against venting in itself may not stop the cycle of unsuccessful repair attempts followed by refrigerant recharge, and a breach of the leak repair trigger rates does not automatically mean a violation of the leak repair required practices. A breach of the leak repair trigger rates sets a chain of events that will address the appliance as a whole by requiring a timely repair, verification, and possible retirement of the entire appliance if it shows a history of leak events.

Again, EPA is not making claims as to the optimal leak rate for different types of appliances, but on the ability of appliance owners or operators to address those leaks within 30 days of when the proposed leak repair rates are triggered. However, EPA notes that it has made efforts to set leak repair trigger rates that are based on historical service records of actual refrigeration and air-conditioning equipment, leak tightness claims of equipment manufacturers, as well as testimonies from equipment owners or operators and the groups that represent them. EPA has reviewed a number of data sources in proposing to lower the leak repair trigger rates. EPA has reviewed leak data submitted to California's South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources of air pollution. California South Coast Air Quality Management is an air pollution control agency that services the areas of Orange County and the urban portions of Los Angeles,

Riverside, and San Bernardino counties. The agency reaches about 16 million people on a 10,743 square mile radius, which is half of the population of the state of California.

Similar to the EPA's requirements under Section 608 of the Act, SCAQMD has issued Rule 1415 aimed at reducing emissions of ozone-depleting refrigerants from stationary refrigeration and air-conditioning systems. The rule requires any person within SCAQMD's jurisdiction, who owns or operates a refrigeration system, to minimize refrigerant leakage. A refrigeration system is defined for the purposes of the rule, "as any non-vehicular equipment used for cooling or freezing, which holds more than 50 pounds of any combination of class I and/or class II refrigerant, including, but not limited to, refrigerators, freezers, or air-conditioning equipment or systems." Under Rule 1415, SCAQMD collects the following information every two years from owners or operators of stationary refrigeration systems holding more than 50 pounds of an ozone depleting refrigerant (<http://www.aqmd.gov/prdas/forms/1415form2.doc>): Number of refrigeration systems in operation; type of refrigerant in each refrigeration system; amount of refrigerant in each refrigeration system; date of the last annual audit or maintenance performed for each refrigeration system; and the amount of additional refrigerant charged every year. For the purposes of the rule, additional refrigerant charge is defined as the quantity of refrigerant (in pounds) charged to a refrigeration system in order to bring the system to a full-capacity charge and replace refrigerant that has leaked.

EPA has reviewed data for over 4,750 pieces of equipment from SCAQMD covering the time-period 2004 through 2005. The data includes refrigeration and air-conditioning systems that meet EPA's existing and proposed definitions of industrial process refrigeration appliances (e.g., food processing industry, pharmaceutical manufacturing), comfort cooling refrigeration appliances (e.g. office buildings, schools and universities, hospitals), and commercial refrigeration appliances (e.g., refrigerated warehouses, supermarkets, retail box

stores). The appliances that were evaluated all had ODS refrigerant charges greater than 50 pounds. EPA's review shows that a tightening of the leak rate for commercial refrigeration appliances to 20 percent results in 8 percent of the 1,722 systems examined facing mandatory repair within 30 days. Similarly, EPA evaluated data from 2,700 comfort cooling appliances and 350 industrial process refrigeration appliances. The Agency's review shows that lowering the leak rate to 20 percent for industrial process refrigeration will result in slightly less than 5 percent of systems facing mandatory repair within 30 days, and lowering the leak rate to 10 percent for comfort cooling applications will result in slightly less than 1 percent of systems facing mandatory repair within 30 days. The data collected includes businesses of all sizes that meet the reporting criteria.

The SCAQMD leak repair data for commercial refrigeration systems is consistent with EPA's independent analysis on the commercial refrigeration sector. EPA's *Draft Analysis of U.S. Commercial Supermarket Refrigeration Systems* (2005) presents descriptions and a wide range of data collected on five types of supermarket refrigeration systems: Direct expansion (DX), secondary loops, distributed, low-charge multiplex, and advanced self-contained systems. The analysis summarized information on commercial refrigeration appliances gathered from published literature, proceedings from technical conferences, technical trade journals and magazines, and interviews with industry experts. EPA estimates that there are more than 34,000 supermarkets in the United States, each operating 3–4 commercial refrigeration appliances with combined charge sizes of several thousand pounds. EPA also estimates that DX systems using HCFC-22 refrigerant dominant the commercial refrigeration sector with an estimated 60 to 80 percent of new market sales in the United States. EPA notes that leak rates can vary widely; the reduction in leakage from DX systems can be explained by a number of steps taken by equipment manufacturers and users to minimize leakage, including: Designing the system for tightness, practicing maintenance procedures for early detection and leakage repairs; training personnel. EPA estimates that annual leak rates for DX systems range from 3 percent to 35 percent for in-use equipment, with the higher annual leak rates (25%) being more characteristic of older appliances and the lower ones (15%) being more characteristic of newer appliances.

EPA has also considered comments on leak rates that were submitted in response to a NPRM issued on June 11, 1998 (63 FR 32044). In that NPRM, EPA proposed to lower the leak repair trigger rates and also extend the leak repair required practices and associated recordkeeping and reporting to substitute refrigerants. FMI noted in their August 31, 1998 response to the NPRM that * * * the targeted leak rates of 15 percent and 10 percent for equipment built before and after 1992, was unattainable * * *. We believe that rates of 25 percent for equipment manufactured before 1992 and 20 percent for equipment manufactured after 1992 are more realistic. Similar comments were stated by major supermarket chains noting that * * *. Leak rates of 25% would be more practical and allow more effective refrigerant management.

EPA believes that the equipment designs for which leak data has been reported should not differ according to the business size of the reporting entity. For example, both a small independent grocery store and a major supermarket chain might report on leak history of a typical DX refrigeration system. However, EPA would not expect the operating characteristics of the DX system to differ based on the size of the reporting entity. The charge sizes may differ, but the Agency would expect that the general mechanics of the systems would not vary greatly as a function of the size of the owner or operator. EPA expects similar results for owners or operators of appliances in other refrigeration and air-conditioning end-use sectors (*i.e.*, comfort cooling, commercial refrigeration, and industrial process refrigeration). The Agency seeks comment on this expectation and also requests substantiating leak data from owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration appliances.

Again, it is not EPA's intention to estimate the lowest achievable leak rate for existing equipment. However, review of actual leak data does reinforce the notion that repair of leaks beneath 20 and 10 percent within 30 days is achievable, and would reduce emissions of ODS. EPA seeks comments on the ability or lack thereof of owners or operators of commercial refrigeration and comfort cooling and industrial process refrigeration appliances to repair leaks within 30 days when their appliances leak above the proposed leak repair trigger rates of 20 percent for industrial process refrigeration and commercial refrigeration appliances and 10 percent for comfort cooling refrigeration appliances.

2. Addition of Refrigerant Due to Seasonal Variances

The proposed leak repair required practices require that the owner or operator determine the full charge of the appliance in order to determine the leak rate of the leaking appliance. In today's NPRM, EPA has proposed to amend the definition of "full charge" to mean: the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one of the following four methods: (1) Use the equipment manufacturer's determination of the full charge; (2) Use of calculations based on component sizes, density of refrigerant, volume of piping, seasonal variances, and other relevant considerations; (3) Use actual measurements of the amount of refrigerant evacuated from the appliance; or (4) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge.

EPA is also proposing changes to the required practices in order to acknowledge the rare occasion or need to add refrigerant to an appliance due to a change in seasons. In parts of the country that experience large temperature swings during the year, refrigerant in appliances can migrate from one component to another (*i.e.*, from the condenser to the receiver). This migration results in a need to add refrigerant to an appliance (or "flood the condenser") in the season of lower ambient (*i.e.*, fall or winter). Refrigerant receivers must be properly sized in order to hold the appliances' full charge (*i.e.*, the normal operating refrigerant charge plus the additional charge needed to flood the condenser) during periods with lower ambient conditions. However, EPA understands that owners or operators of appliances without properly sized receivers that need to add refrigerant to the appliance in the fall or winter would also have to remove refrigerant the next spring in order to prevent high head pressures at design ambient conditions. This technique, often referred to as a winter-summer charge procedure or a seasonal adjustment, may occur without the presence of a leak. EPA would not expect seasonal adjustments to be an issue for appliances with properly designed system receivers, because the owner or operator would not need to add refrigerant to account for wintertime operation.

In a properly charged, non-leaking system, EPA would expect that

additions of refrigerant during months with lower ambient conditions (*i.e.*, fall or winter) would necessitate an equivalent amount of refrigerant removal in the higher ambient months (*i.e.*, spring or summer). EPA believes that appliances with properly sized receivers provide the flexibility needed to account for seasonal variances, and the Agency does not expect multiple additions of refrigerant in order to account for seasonal variance; however, EPA seeks comment on its consideration of seasonal variance and the likelihood of multiple refrigerant additions to account for seasonal variance in any one calendar year.

EPA is not opposed to the concept of exempting addition of refrigerant due to a seasonal variance from the requirement to calculate the leak rate upon addition of refrigerant. As previously discussed, EPA has proposed to define *seasonal variance* in such a way as to negate the addition and subsequent removal of refrigerant due to change in seasons, by making the definition contingent upon the future removal of refrigerant in the next season after the addition of refrigerant. However, any exemption to the required practice to calculate the leak rate due to seasonal variance should be accounted for in a service record. Therefore, in order to receive an exemption to the requirement to calculate the leak rate upon a seasonal variance addition of refrigerant, EPA is proposing that both the addition and subsequent removal of refrigerant due to seasonal variances are accounted for and documented as a condition for receiving an exemption. In order to implement this exemption, EPA is proposing language at § 82.156 requiring owners or operators to determine the leak rate upon each addition of refrigerant, except in cases where the addition of refrigerant is due to a seasonal variance. The proposed exemption is contingent upon the owner or operator's maintenance of records documenting the amount of refrigerant added to the appliance in one season and the amount of refrigerant removed from the appliance in the subsequent season. Both the addition and removal must take place within a consecutive 12-month period. Such additions and removal of refrigerant would be documented as proposed at § 82.166(r). EPA seeks comment on the need and effectiveness of a limited exemption [to the requirement to calculate the leak rate upon addition of refrigerant] for seasonal variance in cases where the appliance owner or operator has documented the date, type and amount of refrigerant added and removed from

the appliance to account for the seasonal variance. EPA also seeks comment on the need to document the capacity of the receiver, as well as a requirement making the exemption contingent upon an equivalent amount of refrigerant being removed and added over a consecutive 12-month period.

3. Verification of Repairs

The current leak repair verification requirements only apply to owners or operators of industrial process refrigeration and federally-owned commercial and comfort cooling appliances whose owners are granted additional time to make repairs. EPA has found the lack of a verification requirement to be problematic for owners or operators of comfort cooling and commercial refrigeration appliances. The lack of a verification requirement may leave owners or operators of comfort cooling and commercial refrigeration appliances with an uncertainty as to whether their repair efforts have brought them into compliance with the leak repair requirements. The current leak repair regulations require repair of the comfort cooling or commercial refrigeration appliance within 30 days, without any requirement to verify repairs. A lack of verification allows a scenario by which insufficient or incomplete repairs might be attempted which will lead to future leaks. Continued leaks, especially when they are at the same location or component in the appliance, could be interpreted as an insufficient repair, which did not bring the leak rate of the entire appliance beneath the leak repair trigger rate.

EPA sees no reason why verification should not be mandated for all types of appliances with refrigerant charges greater than 50 pounds (*i.e.*, comfort cooling and commercial refrigeration appliance in addition to industrial process refrigeration appliances). The environmental benefit of verifying repairs applies to comfort cooling and commercial refrigeration appliances as well as industrial process refrigeration appliances; therefore, EPA is proposing a requirement that owners or operators of all types of appliances that are subject to the leak repair requirements perform both an initial and follow-up verification of repairs.

EPA is also concerned with the amount of time taken between the initial and follow-up verification tests. The Agency understands that most technicians pressure check appliances immediately following repairs. The Agency considers such pressure checks as satisfying the initial verification requirements, currently required for

industrial process refrigeration appliances. EPA's concern is that follow-up verifications do not appear to be a part of normal operating procedures for most service calls. Follow-up verifications require a technician to perform a second test after the appliance has operated under normal operating conditions for an extended period of time. EPA believes that such follow-up verification is an indicator of the success of repairs and must be required of all appliances that have leaked refrigerant above the leak repair trigger rate. Such a requirement to perform follow-up verifications is in place for owners or operators of industrial process refrigeration. However, the current leak repair required practices do not set a minimum amount of time that must pass between such verifications.

EPA has found that in some instances follow-up verifications are performed immediately after repairs and the initial verification. In many cases verifications have been performed without documentation to support the verification efforts. The Agency is proposing a requirement that all owners or operators of commercial, industrial process refrigeration, and comfort cooling appliances with refrigerant charges greater than 50 pounds that leak above the annual leak repair trigger rate repair all leaks within 30 days of discovery (as made evident by the need to add refrigerant that is not the result of a seasonal variance) and perform both initial and follow-up verification, where the follow-up verification occurs no sooner than 24 hours after repairs have been made. EPA requests comment on the clarification that follow-up verification testing take place at least 24 hours after repairs have been made and the appliance has operated under typical conditions. EPA also requests comment on the additional burden or costs that stakeholders may incur as a result of the proposed requirement that follow-up verification take place at least 24 hours after repairs have been made.

4. Requirement to Develop and Complete Retrofit/Retirement Plans

EPA currently requires owners or operators of industrial process refrigeration appliances that have failed an initial or follow-up verification test to develop a dated and written retrofit/retirement plan within 30 days of the failed verification and implement the plan within one year. Owners or operators of comfort cooling and commercial refrigeration appliances are currently not required to perform verification tests and, in lieu of making repairs within 30 days, are given the option to draft and implement retrofit/

retirement plans within 30 days of discovering a leak greater than the applicable trigger rate.

EPA has heard concerns of appliance owners or operators that a requirement to retrofit or retire an entire appliance because it has failed a verification test may not always be practical. Some owners or operators would prefer to have the ability to replace a faulty component before they are required to retrofit or retire an entire appliance. The Agency does not wish to place an undue burden of large scale conversions and retirements upon owners or operators when repair via complete replacement of the leaking appliance component might satisfactorily repair the appliance.

In order to provide a greater level of flexibility, EPA has considered several options that would trigger the requirement to retrofit or retire a leaking appliance. The first proposed option would require owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration appliances to replace a leaking component in its entirety upon failure of an initial or follow-up verification test. Such a proposal would be a departure from the current requirement for owners or operators of industrial process refrigeration appliances to retire or retrofit the appliance upon such a failure. Under this scenario EPA could require replacement of the leaking component and all of its subassemblies within 30 days of the failed verification. EPA believes that such a requirement would reduce emissions by addressing the source of the failure and removing the potential for cyclic repair attempts followed by subsequent refrigerant recharge. The Agency seeks comment on the effectiveness and feasibility of requiring owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration appliances to replace leaking components in their entirety upon failure of an initial or follow-up verification. EPA is interested in comments concerning its belief that refrigerant emissions might be reduced by requiring component replacement, in lieu of repeat repair attempts and subsequent refrigerant recharges.

EPA is considering a second option that would allow owners or operators to decide on a case-by-case basis if a component or its subassembly requires replacement in order to completely repair the appliance. EPA recognizes that this option would allow a greater level of flexibility to owners or operators of impacted appliances; however, the Agency is concerned that such flexibility could allow increased

refrigerant emissions by allowing appliance owners or operators to make multiple repair attempts to an appliance or a specific appliance component in lieu of taking action to completely repair the appliance via a component replacement.⁸ A benefit of this proposal is that it eliminates the chance of mandatory component replacement in cases where it might not be warranted. The owner or operator would have the flexibility of determining if wholesale component replacement would be the best means of addressing a leaking appliance. EPA is selecting this option as its lead proposal to amend the required practice, by removing the requirement to retrofit or retire an industrial process refrigeration appliance upon failure of an initial or follow-up verification test. EPA is also proposing to extend this requirement to owners or operators of commercial refrigeration and comfort cooling appliances with refrigerant full charges greater than 50 pounds. EPA believes that this proposal will reduce refrigerant emissions while establishing a consistent set of regulatory required practices. The Agency seeks comment on the effectiveness and feasibility of adhering to the proposed changes to the required practices.

EPA also proposes to shorten the one-year timeframe that is currently granted to owners or operators to complete appliance retrofit/retirement plans. The Agency does not wish to allow refrigerant emissions from faulty equipment by allowing an extensive amount of time to pass before appliance owners or operators complete required retrofit/retirement plans. EPA proposes a six-month timeframe to complete retrofit/retirement plans for appliances that have encountered three failed verification tests (either initial or follow-up) within a consecutive six-month period. EPA provides further discussion of this proposed requirement in the "Worst Leaker" section of this preamble.

EPA has often been asked what should be included in a retrofit/retirement plan. The Agency has not previously mandated a specified listing of items to be included in retrofit/retirement plans due to the complex nature of many appliances. The Agency felt that one listing of items may not fit all types of appliances considering the wide array of configurations and refrigerant choices that may be encountered by appliance owners or operators. However, EPA finds merit in providing a minimum set of

⁸ EPA provides anecdotes about multiple repairs in Docket ID No. EPA-HQ-OAR-2003-0167.

requirements that are likely to be encountered by any type of appliance that is undergoing a conversion from a refrigerant to a substitute with a lower ODP.

EPA is proposing, at § 82.166(n), that appliance owners or operators who are subject to the requirement to develop a retrofit or retirement plan include a minimum set of requirements into such plans. These requirements are universal in that all owners or operators of appliances undergoing a conversion from a refrigerant to a substitute with a lower ODP should consider such steps. EPA proposes to require that retrofit/retirement plans provide the following information for each appliance for which a retrofit/retirement plan is required to be developed:

- Identification and location of the appliance;
- Type and full charge of the refrigerant used by the leaking appliance;
- Type and full charge of the substitute to which the appliance will be converted, if retrofitted;
- Itemized procedure for the appliance conversion to a substitute with a lower ODP, including changes required for compatibility with the new substitute (for example, procedure for flushing old refrigerant and lubricant; and changes in lubricants, filters, gaskets, o-rings, or valves);
- Plan for the disposition of recovered refrigerant;
- Plan for the disposition of the appliance, if retired; and a
- Six-month schedule for completion of the appliance retrofit or retirement.

EPA does not intend for this list to be all inclusive. However, EPA believes that, at a minimum, such requirements should be considered by any owner or operator that is retrofitting or retiring a leaking appliance. EPA seeks public comment on these minimum requirements. Specifically, the Agency requests comment on whether there are other minimal factors that should be considered when developing a retrofit/retirement plan.

EPA has heard concerns from appliance owners or operators that the Agency is forcing the retrofit of HCFC appliances to substitutes without addressing leaks. EPA promotes a systematic approach to addressing repairs, retrofits, or retirements of appliances. The first step in any retrofit plan should be to identify and repair all leaks. Retrofitting appliances without first repairing the appliance is not consistent with the intent of the leak repair regulations to promote actions that will reduce use and emissions of

ODS and promote the use of substitutes when feasible. EPA-accepted substitutes (under SNAP) for commercial refrigeration, comfort cooling, and industrial process refrigeration appliances are available, as are industry retrofit procedures. Many chemical and equipment manufacturers provide conversion or retrofit guidelines that specify that repair of the appliance must be done prior to initiating retrofit procedures. EPA believes that repair of appliances prior to retrofit is a standard industry practice and does not need to be specifically called for in the proposed definition of retrofit. However, EPA seeks comment on the effectiveness of industry retrofit guidelines in promoting the repair of appliances prior to making an attempt to retrofit appliances.

EPA wishes to clarify that the retrofit (*i.e.*, the conversion) of an appliance to use a substitute with a lower ODP is only required for appliances using refrigerants (*i.e.*, substances that consist in part or whole of an ODS). However, the installation of new appliances using non-ODS substitutes does not provide an exemption to the refrigerant venting prohibitions of Section 608 of the Clean Air Act or § 82.154. It remains a violation of Section 608(c)(2) of the Act as well as the regulatory prohibition at § 82.154(a)(1) to knowingly release substitutes (such as R-134a, R-410A, R-404A, *etc.*) during the maintenance, service, repair, and disposal of appliances; therefore, efforts to isolate leaking components or use recovery/recycling equipment in order to recover such substitutes are still required, even though the leak repair regulations do not currently apply to appliances using non-ODS substitutes.

EPA also wishes to clarify that the current requirement to retrofit to a refrigerant or a substitute with a lower or equivalent ODP does not mean that the same refrigerant can be returned to the leaking appliance. Such actions do not satisfy the regulatory intent or the proposed definition of "retrofit." The requirement to retrofit to a refrigerant or substitute with a lower or equivalent ODP than the previous refrigerant means the owner or operator is switching refrigerants. So while the Agency allows flexibility in refrigerant and substitute choices, the intent is not to allow the continued use of the leaking refrigerant in the retrofit/retirement plan.

In order to provide consistency with the proposed definition of "retrofit," EPA proposes to change the required practice to make it clear that a retrofit must include a change (*i.e.*, a conversion) from a refrigerant to a

substitute with a lower ODP. As an example, this proposed change would mean that an appliance using a CFC or HCFC refrigerant such as R-12 (with an ODP of 1.0) or R-22 (with an ODP of 0.055), could be retrofitted to use a SNAP-acceptable HFC substitute such as R-134a or R-410A (both non-ODS substitutes). EPA believes that this proposed change will remove any ambiguity as to what the Agency considers a retrofit in regards to refrigerant and substitute choices.

5. Extension To Repair and Retrofit/Retirement Timelines

The current leak repair required practices allow extensions to the repair or retrofit/retirement deadlines for industrial process refrigeration and federally-owned appliances under certain conditions. Extensions are granted to owners or operators of industrial process refrigeration appliances if the necessary parts are unavailable or if requirements of other applicable Federal, State, or local regulations make a repair within 30 (or 120 days when an industrial process shutdown is required)⁹ impossible (§ 82.156(i)(2)(i)). This exemption also applies to owners or operators of federally-owned comfort cooling and commercial appliances. There is no similar exemption granted to owners or operators of comfort cooling and commercial refrigeration appliances with refrigerant charges greater than 50 pounds.

Currently, there are three separate regulatory paths that may result in extensions to the 30 day requirement (or 120 days if an industrial process shutdown is required) to repair leaks or the one-year requirement to complete implementation of retrofit/retirement plans for industrial process refrigeration and federally-owned comfort cooling and commercial refrigeration appliances. Under the first path, an extension of one additional year may be granted if the quoted delivery time for any critical component needed to complete retrofit is greater than 30 weeks (§ 82.156(i)(7)(ii)(C)). Under the second path, an extension is granted (to the extent reasonably necessary) for retrofit delays occasioned by the requirements of other applicable Federal, State, or local laws or regulations, or due to the unavailability of a suitable replacement refrigerant with a lower ozone depletion potential (§ 82.156(i)(7)(i)). The final regulatory

⁹ *Industrial process shutdown* means, for the purposes of § 82.156(i), that an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility.

path allows an additional extension to the one-year retrofit completion deadline if additional time in excess of the one-year under the first path is required. This third extension, which in essence is a two-year extension, is contingent upon EPA notification prior to the end of the ninth month of the first additional one-year extension (§ 82.156(i)(7)(iii)).

These exemptions do not currently apply to owners or operators of comfort cooling and commercial refrigeration appliances. However, in accordance with § 82.156(i)(1)(i), owners or operators of federally-owned commercial refrigerant appliances may receive extensions to the 30 or 120-day timeframe to complete repairs if they document repair efforts, and notify EPA of their inability to comply within 30 days of discovering the leaks (as evidenced by the need to add refrigerant). Owners or operators of federally-owned commercial refrigerant appliances may also receive extensions, if the commercial refrigeration appliance is located in an area subject to radiological contamination, or where the shutting down of the appliance will directly lead to radiological contamination. Once extensions are granted to owners or operators of federally-owned commercial refrigerant appliances, their appliances are treated as if they were industrial process refrigeration appliances, meaning that all of the applicable industrial process refrigeration leak repair requirements and reporting/recordkeeping requirements would apply (§ 82.156(i)(3)).

EPA believes that the regulatory extension process should be amended due to its complexity. In addition, EPA believes that the opportunity to obtain extensions that is available to owners or operators of industrial process refrigeration and federally-owned commercial refrigeration appliances should be made available to owners or operators of all appliance categories. Therefore, the Agency proposes to allow extensions to the requirement to repair leaks within 30 days, if the leak rate of the appliance is above 20 percent for industrial process refrigeration and commercial refrigeration appliances and 10 percent for comfort cooling appliances, regardless if they are federally-owned. EPA also proposes to grant similar exemptions to all appliance owners or operators who cannot complete required retrofit/retirement plans in the proposed six-month timeframe, provided that they fulfill the recordkeeping requirements discussed below.

The extensions would be applicable to all appliances and not limited to industrial process refrigeration or federally owned commercial refrigeration appliances, if any one of the following conditions applies: (i) The appliance is located in an area subject to radiological contamination or where the shutting down of the appliance will directly lead to radiological contamination, and where such records are maintained in accordance with § 82.166(o); (ii) The necessary parts for an appliance component are unavailable and the owner or operator maintains a written statement from the appliance or component manufacturer or distributor stating the unavailability of parts, and where such records are maintained in accordance with § 82.166(o); or (iii) Other applicable Federal, State, or local regulations make a repair within 30 days impossible, and where such records are maintained in accordance with § 82.166(o).

EPA is limiting extensions based on the current extensions for leak repair, at § 82.156, with modification. The Agency is not proposing additional reasons, such as budgetary cycles or planned maintenance schedules, as a justification for delaying repairs. For instances when the extension is due to the need to shutdown the area subject to radiological contamination or adhere to any Federal, State, or local regulations that would make repair, retrofit, or retirement within the specified timelines for repair or retrofit/retirement (*i.e.*, 30 days or 6 months, respectively) infeasible, EPA would automatically grant an extension of 30 days beyond the date that the appliance subject to radiological contamination is brought back online or the date that of adherence to any Federal, State, or local regulations. Such extensions, as proposed at § 82.156(i)(4)(iii), would be contingent upon written and retained documents noting the reason for the extension, in accordance with proposed § 82.166(o).

When the extension is required due to the unavailability of parts within 12 weeks of the 6 month period to complete retrofit plans, EPA proposes to limit the extension to an additional 12 weeks beyond the date that the necessary parts or components are delivered. EPA believes that this amount of time is equitable in that owners or operators who were able to obtain parts must complete retrofits in a total of 6 months; so, for those owners or operators who could obtain the necessary parts within 12 weeks would still have a total of 6 months to complete retrofits once the parts or components became available. The

amount of time allowed for the extensions would automatically be granted and would not be contingent upon a written request or an EPA written authorization. Such extensions would be contingent upon written and retained documents noting the reason for the extension, as proposed at § 82.166(o). EPA requests comment on the proposed changes to the required practices.

EPA also proposes to remove the 120-day exemption when owners or operators of industrial process refrigeration appliances undergo an industrial process shutdown. EPA believes that, under the proposed approach, the 120 day delay is no longer justified. All impacted appliance owners or operators have the option of system mothballing their appliances, which temporarily suspends all leak repair related timeframes. The Agency sees no reason why owners or operators of industrial process refrigeration appliances should be singled out for an additional exemption that is not also provided in other refrigeration and air-conditioning sectors. Therefore, EPA proposes to remove the definition of *industrial process shutdown* and all references to the definitions in the required practices of § 82.156. EPA requests comment on the regulatory simplicity gained by such an approach and the need for such exemptions when all appliance owners or operators have the option of mothballing their appliances.

6. Worst Leaker Provision

Appliance owners or operators have the flexibility to decide what actions to take in order to complete repairs. Such actions may or may not include the complete replacement of a leaking component or one or more of its subassemblies. As previously discussed, EPA is concerned that the leak repair required practices could allow a leaking appliance to undergo multiple repair attempts, in some instances to the same component, without the owner or operator's decision to replace the leaking component. Each repair attempt would likely be followed by a release of refrigerant due to the component failure and a subsequent recharge of the refrigerant. EPA wants to ensure that appliance owners or operators who have multiple leak events in a short period of time take action to replace the component in its entirety, or repair and retrofit the appliance, instead of continuing the pattern of leak repair followed by refrigerant recharge. EPA does not view such cyclical efforts of repair attempts followed by recharge in a relatively short amount of time as an

effective means of reducing emissions of ODS. EPA believes it is necessary to address these situations specifically. Therefore, EPA is proposing two options as possible changes to the required practices at § 82.156(m).

The first proposed option would require the retrofit to a refrigerant or substitute with a lower ODP or retirement of the entire appliance if it experiences three component replacements during a consecutive six-month period, that occur as a result of a failed initial or follow-up verification. This proposal would be linked to the aforementioned option of requiring a complete component change within 30 days of a failed initial or follow-up verification tests.

The second proposed option would require the retrofit to a refrigerant or substitute with a lower ODP, or retirement of the entire appliance, if it fails three initial or follow-up verifications during a consecutive six-month period. The second option is linked to the previously discussed proposal allowing owners or operators to decide on a case-by-case basis if a component or its subassembly requires replacement in order to completely repair the appliance. EPA prefers this second option, and believes that this second option provides the greatest level of flexibility to appliance owner or operator, while addressing the unwanted environmental consequences of cyclic repair attempts that may not adequately address the underlying cause of the appliance leak/s. This option allows the owner or operator to determine the best cause of action to address the leaking appliance, while reducing the likelihood of entering into a cycle of inept repair attempts. EPA requests comments on the proposed options, and the potential that each has to reduce refrigerant emissions.

A likely scenario that would trigger the second proposed option would be a comfort cooling appliance with an R-22 charge of 800 lbs that encounters three separate repair incidents during a consecutive 6-month period, where all of the following apply:

- Each of the three repair incidents during the consecutive 6-month period is undertaken to repair leak(s) identified as a result of an addition of refrigerant where the calculated leak rate of the appliance (as proposed at § 82.152) is greater than 10 percent each time, and a record documenting the amount of refrigerant added is maintained in accordance with § 82.166(k), as proposed.
- The owner or operator repaired all leaks within 30 days of the calculated leak rate that showed a rate greater than

10 percent, as required by proposed § 82.156(i).

- Immediately after each repair attempt, an initial verification test was performed and documented in accordance with the proposed § 82.156(i) and § 82.166(k), respectively.
- Within 30 days, but no sooner than 24 hours, after each repair a follow-up verification was performed and documented in accordance with the proposed § 82.156(i) and § 82.166(k).

In this scenario, any combination of three failed initial or follow-up verifications during a consecutive six-month period, regardless if the appliance leaked at the identical component, would trigger the requirement to develop and implement the six-month retrofit or retirement plan. The owner or operator must make plans to either retire or retrofit the appliance, in accordance with the proposed § 82.156(m). The owner or operator would be required to maintain a written and dated retrofit/retirement plan that provides a six-month schedule to complete retrofit or retirement of the leaking appliance, in accordance with § 82.166(n). Retirement would mean the permanent decommissioning of the leaking appliance such that it is deemed unfit for use by the current or any future owner or operator, as defined at § 82.152. The retrofit, as defined at § 82.152, would include a conversion of the appliance to use a substitute with a lower ODP. This scenario assumes that there is no delay in receipt of parts or components, and that none of the other extensions to repair timelines, as stated in proposed § 82.156(i)(4), are applicable. EPA requests comment on the potential for this proposal to reduce emissions by addressing the source of the leak(s) after multiple repair attempts have failed.

D. Reporting and Recordkeeping Requirements

1. Service Records

EPA is proposing several changes to the current reporting and recordkeeping requirements associated with the maintenance, service, and repair of comfort cooling, commercial refrigeration, and industrial process refrigeration appliances with refrigerant charge sizes greater than 50 pounds. Currently, EPA requires that persons servicing appliances (*e.g.*, technicians or service contractors) provide their customer with an invoice or other written documentation that states the amount of refrigerant added to the appliance. EPA believes that this limited amount of information is insufficient and may not provide

essential information needed by the appliance owner or operator to make decisions on the fate of the repaired appliance.

In order to make certain that appliance owners or operators are provided with sufficient information with which to make decisions on the fate of their appliances, EPA is proposing that all persons servicing appliances with charge sizes greater than 50 pounds provide the owner or operator of such appliances with an invoice or other documentation, that indicates the date and type of service, the physical location of all leaks that were repaired, the amount and type of refrigerant recovered from the appliance, the type and results of initial and follow-up verification tests, as well as the quantity and type of refrigerant added to the appliance. EPA is proposing identical recordkeeping requirements for appliance owners or operators who use in-house service personnel. EPA is also proposing that appliance owners or operators maintain all calculations, measurements, and assumptions used to determine the leak rate of the appliance upon each addition of refrigerant.

As with all other records associated with the leak repair requirement, owners or operators would be required to maintain these service records on-site, at the location of the affected appliance, for a minimum of three years. The submission of such records to EPA would not be required, but they must be made immediately available upon request. EPA believes that this enhanced recordkeeping requirement is consistent with records that are likely provided by service personnel. EPA requests comment on the effectiveness of this proposal in establishing a consistent regulatory structure that will provide appliance owners or operators with sufficient information to make decisions on the fate of their appliance. EPA also seeks comment on whether this proposal provides sufficient information for appliance owners or operators to maintain compliance with the leak repair requirements, by maintaining a record of the calculated leak rate upon each addition of refrigerant.

EPA is also clarifying the recordkeeping retention requirement of § 82.166(m), that currently states that all records required to be maintained pursuant to this section must be kept for a minimum of three years unless otherwise indicated. Entities that dispose of appliances must keep these records on-site. EPA believes that all records required under Subpart F (not just disposal records) should be maintained on-site, and that records on

leak repair should be maintained on-site at the physical location of the appliance, and is concerned that the current provision may be misinterpreted as being applicable solely to disposal records. Therefore, the Agency is proposing a requirement that all service records pertinent to the leak repair required practices at § 82.156 be maintained on-site, at the physical location, of the appliance undergoing service for a minimum of three years. EPA believes that such records are being kept at the physical locations of the appliances, but seeks comment on this issue.

2. Records Documenting the Fate of Recovered Refrigerant

EPA requires refrigerant recovery during service, maintenance, and repair of appliances; however, EPA is concerned about the ultimate fate of refrigerant that may be recovered during service, retrofit, or retirement. EPA has established regulatory prohibitions (at § 82.154) that do not allow the sale or distribution of used refrigerant to a new owner, until that used refrigerant has first been reclaimed by an EPA-certified reclaimer. This prohibition does not affect owners or operators of appliances who wish to recover and store used refrigerant for their own future use. In fact, EPA has granted flexibility by allowing used refrigerant to be reused by the owner in appliances owned by the same parent company without having it reclaimed¹⁰ (68 FR 43793; July 24, 2003).

EPA is concerned that refrigerant recovered during service, retrofit, or retirement may not be properly reclaimed or destroyed. Based on data provided by EPA-certified refrigerant reclaimers, the amount of refrigerant returned for reclamation is lower than anticipated. This is certainly the case for popular refrigerants that have not yet been fully phased out of production and consumption (for example, R-22). EPA believes that a linkage should be established between the amounts of refrigerant recovered from appliances and the ultimate fate of those refrigerants. Such a linkage will provide reinforcement to the statutory and regulatory refrigerant venting prohibition, by creating a paper trail for refrigerant that is recovered but is not being stored for reuse by the appliance owner or operator. Therefore, EPA is proposing new recordkeeping

¹⁰EPA does not restrict the sale and distribution of used refrigerant when that refrigerant is being transferred between or among a parent company and one or more of its subsidiaries, or between or among subsidiaries having the same parent company (40 CFR 82.154(g)(4)).

requirements for owners or operators of appliances, the service contractors that they hire or employ, as well as the third parties involved in the distribution of recovered refrigerant. EPA is proposing an addition to the recordkeeping and reporting requirements at 82.166(u), requiring any person who sends used refrigerant off-site to a new owner to maintain records of the types and amounts of used refrigerant sent off-site for any reason (such as storage, recycling, reclamation, destruction, *etc.*). The records must include the name and address of the facility accepting used refrigerant, the type and amount of refrigerant transferred, and the date that the refrigerant was transferred. This proposed recordkeeping requirement is not limited to owners or operators of appliances, but any person involved in the transfer of used refrigerant to a new owner, such as service contractors and technicians, when such transfer occurs prior to the used refrigerant being reclaimed by an EPA-certified refrigerant reclaiming. EPA believes that improved tracking of the fate of used refrigerant, in tandem with a proposed requirement to document the amount and type of refrigerant recovered from appliances, will lead to decreases in the amount of refrigerant vented into the atmosphere by increasing awareness and accountability of the fate of used refrigerant. EPA also believes that such accountability will lead to increases in the amount of refrigerant that is properly reclaimed by EPA-certified refrigerant reclaimers.

This proposal would not ban the transfer of used refrigerant to a party independent of the appliance owner or operator and the refrigerant reclaiming. Many refrigerant supply facilities will collect used refrigerant from their customers, with the intent of forwarding the used refrigerant to reclaimers once they have accumulated sufficient quantity to make the transfer economically feasible. EPA does not wish to disrupt this practice, since it has environmental benefits, particularly in remote areas of the country where refrigerant wholesalers and reclaimers may not be readily available. Such transfer is allowed, as long as the transfer is not for purposes of use as a refrigerant prior to the reclamation process. EPA requests comment on the impact of tracking used refrigerant by appliance owners or operators, service contractors, and other entities involved in recycling and reclamation of used refrigerants. EPA also seeks comment on the impact of increased tracking of used refrigerant and the potential impact that

such recordkeeping may have on the quantities of used refrigerant reclaimed in the U.S.

3. Extensions To Repair and Retrofit/Retirement Timelines

Section C.5. of this proposed rule discusses the existing and proposed changes to the extensions to the 30-day timeframe to complete repairs and the proposed six-month timeframe to complete retrofit/retirement plans. EPA has proposed several changes to the requirements to develop and implement a retrofit/retirement plan. EPA wishes to retain the opportunity for owners or operators to request extensions to the retrofit/retirement timelines, but wishes to make the extensions contingent upon the maintenance of records to justify the extensions.

In support of the existing and proposed required practices, EPA is proposing to add recordkeeping requirements that should be required to obtain such extensions. EPA is proposing that owners or operators who are granted additional time, beyond 30 days, to make repairs or more than 6 months to implement retrofit/retirement plans maintain the following records justifying the need for additional time, as applicable:

(1) A written statement describing the radiological conditions that prevent immediate repair of the appliance;

(2) A written statement from the appliance or component manufacturer or distributor estimating a date of delivery for parts required to complete repairs of the appliance;

(3) A written statement describing the applicable Federal, State, or local regulations that prevent the immediate repair of the appliance.

4. Documenting the Determination of the Appliance Full Charge

EPA has granted appliance owners or operators a great deal of flexibility in determining the full charge of their appliances. EPA has proposed to allow owners or operators to determine the full charge of an appliance by using one of the following four methods: (1) Use the equipment manufacturer's determination of the correct full charge for the equipment; (2) Determine the full charge by making appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations; (3) Use actual measurements of the amount of refrigerant added or evacuated from the appliance; and/or (4) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of

the range will serve as the full charge, and where records are maintained in accordance with § 82.166(q).

EPA has granted this level of flexibility due to the difficulties in determining the full charge for unique appliances with large charge sizes. In many applications, nameplate data is not available, and recovery and weighing the full charge may not be practical. While EPA provides flexibility in determining the full charge, the current leak repair regulations only require documentation of the assumptions used to determine the full charge, if the owner or operator uses option 4.

EPA proposes that the owner or operator maintain records documenting the full charge determination, regardless of the means used to calculate or determine the full charge. This proposal would result in a recordkeeping requirement for determination of the full charge. In order to comply with the required practices as currently written, owners or operators would be required to determine the appliance full charge in order to calculate the leak rate (as defined at § 82.152) upon addition of refrigerant. So in order to make such calculations, the owner or operator must make efforts to document their assumptions, but may not necessarily maintain those documents for an extended period of time. EPA believes that compliance will be eased by requiring the maintenance of such full charge determinations.

Therefore, EPA is proposing to amend the recordkeeping requirement at § 82.166(q) so that owners or operators must maintain documents showing all data, including calculations and assumptions, used to determine the full charge. EPA is not proposing that these records be reported to the Agency, but is proposing that such records be maintained on-site, at the physical location of the appliance. EPA seeks comment on the effectiveness of such a recordkeeping requirement, and the ability of affected appliance owners or operators to maintain records to support their determination of the appliance full charge.

5. Documenting Seasonal Variances

As previously discussed, EPA is proposing an exemption to the requirement to calculate the leak rate upon each addition of refrigerant, if the addition is due to seasonal variance, as proposed for definition at § 82.152. While EPA is proposing to allow this exemption, the Agency believes that it should be contingent upon the documentation of the amount and type of refrigerant added during the periods

of low ambient conditions, as well as documentation of the removal of refrigerant from the appliance during the warmer months.

In order to achieve this exemption, EPA proposes a recordkeeping requirement at § 82.166(r) documenting the seasonal variance. EPA will only exempt appliance owners or operators from the proposed requirement to calculate the leak rate upon each addition of refrigerant when that addition occurs due to a seasonal variance, if the owner or operator maintains records stating the amount and type of refrigerant and the date that the refrigerant was added to the appliance. Owners or operators must also maintain a record of the amount and type of refrigerant removed from the appliance to counter the seasonal adjustment. Such records would be required to be maintained, but would not be submitted to EPA. As previously proposed the definition of “seasonal variance” would limit the time period covering seasonal variance to one consecutive 12-month period. EPA seeks comment on the proposed recordkeeping requirement, and its linkage to the exemption to calculate the leak rate upon each addition of refrigerant.

6. Destruction of Purged Refrigerant

Purge devices are used on low-pressure chillers (e.g., R-11, R-113, R-123) to collect accumulated non-condensable gases from the appliance. When leaks occur in such systems they act as a vacuum bringing air into the system. The purge devices release the air to the atmosphere, but also release a small quantity of refrigerant during the purge events. EPA has allowed exemptions to the leak repair requirements in instances where appliance owners or operators can show that purged refrigerants are captured and subsequently destroyed.

The current leak repair reporting and recordkeeping requirements, at § 82.166(p)(1), provide details used to obtain an exemption; owners or operators who wish to exclude purged refrigerants that are recovered and destroyed from annual leak rate calculations must maintain records on-site to support and document the amount of refrigerant sent for destruction. Records are based on a monitoring strategy that provides reliable data to demonstrate that the recovered purged refrigerant has been destroyed to at least 98 percent destruction efficiency. In accordance with § 82.166(p)(2), owners or operators who wish to exclude purged refrigerants that are destroyed from annual leak rate

calculations must maintain the following information after the first time the exclusion is utilized: The identification of the facility and a contact person, including the address and telephone number; a general description of the appliance, focusing on aspects of the appliance relevant to the purging of refrigerant and subsequent destruction; a description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located; the frequency of monitoring and data-recording; and a description of the control device and its destruction efficiency. The information must also be included in any applicable reporting requirements that are required for compliance with the leak repair and retrofit requirements for industrial process refrigeration appliances, as currently set forth in paragraphs § 82.166(n) and (o).

During the period 1998–2006, EPA has not received a report from an industrial process refrigeration appliance owner or operator justifying the exemption of purged and destroyed refrigerant from the calculation of the leak rate. The Agency believes that the lack of use of this provision is due to the likely higher costs of recovering and destroying refrigerant when compared to recycling and reuse or reclamation, as well as improved chiller technology that greatly reduces refrigerant releases during purge events. EPA believes that current chiller technologies using vapor recovery systems for older CFC and newer HCFC chillers allow refrigerant from purge events to be captured and returned to the appliance. In addition, EPA has recognized new chiller technology that is marketed as having the ability to monitor purge events in order to minimize or nearly eliminate the amount of refrigerant released into the atmosphere during a purge event. Due to the advent of such technology and the lack of use of the exemption provision, EPA proposes to remove the recordkeeping and reporting requirements related to documenting purged and destroyed refrigerant. The Agency requests comment on the need for such an exemption, and the likelihood that a chiller owner or operator would recover purged refrigerant for purposes of storage, reclamation, or destruction.

7. Applicability to Residential and Light Commercial Appliances

The leak repair regulations are limited to appliances containing more than 50 pounds of refrigerant that leak above the

leak repair trigger rate percentage. However, the leak repair required practices do not grant an exemption to the statutory refrigerant venting prohibition (CAA Section 608(c)(1)) for appliances containing less than 50 pounds of refrigerant. For example, residential split systems providing comfort cooling to residential homes typically have refrigerant charges less than 10 pounds. While the leak repair requirements do not apply to owners or operators of such appliances, persons servicing, maintaining, or repairing them are not allowed to intentionally release refrigerant into the atmosphere (§ 82.154(a)(1) and (2)).

IV. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is a “significant regulatory action.” This proposed rulemaking may raise novel policy issues that are unique to the refrigeration and air-conditioning service sectors. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under EO 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

EPA has prepared an analysis of the potential costs and benefits associated with this action. This analysis is entitled *Screening Analysis to Examine the Economic Impact of Proposed Revisions to the Section 608 Leak Repair Regulations*. A copy of the analysis is available in the docket for this action (Docket ID No. EPA-HQ-OAR-2003-0167).

EPA evaluated the impact of today’s NPRM on owners or operators of air-conditioning and refrigeration appliances with ozone-depleting refrigerant charge sizes greater than 50 pounds, including the following sectors: Educational facilities, hospitals, ice rinks, supermarkets and grocery stores, convenience stores, warehouse and club supercenters, refrigerated warehouse and storage (including farm) facilities, office buildings, lodging, bakeries, breweries; and food, ice, soft drink, chemical, pharmaceutical, and petrochemical manufacturing facilities. The economic analysis was based on a “model entity” approach for size categories based on the number of employees within each affected sector. This model entity analysis was used to estimate the impact on the economy as a whole (i.e., aggregate cost of the

proposed rule) and on small businesses individually [*i.e.*, for a Regulatory Flexibility Act (RFA) analysis]. Each model entity reflects information about the typical number of facilities in a given sector and size category and the number of pieces of equipment in each equipment category that are likely to be owned and/or operated by each facility. The characteristics and costs of model pieces of equipment were then used to establish costs of compliance for model facilities, and the costs associated with model facilities were used to establish costs for the model entities.

As a means of reducing emissions of ozone-depleting substances to the lowest achievable level, EPA has considered multiple leak repair trigger

rates and estimated their potential impact on the regulated community. For purposes of today's NPRM, EPA has considered the following scenarios: (1) 5% for comfort cooling and 10% for commercial refrigeration and IPR appliances; (2) 5% for comfort cooling and 20% for commercial refrigeration and IPR appliances; (3) 5% for comfort cooling and 30% for commercial refrigeration and IPR appliances; (4) 10% for comfort cooling and 10% for commercial refrigeration and IPR appliances; (5) 10% for comfort cooling and 20% for commercial refrigeration and IPR appliances; and (6) 10% for comfort cooling and 30% for commercial refrigeration and IPR

appliances. Within each option, EPA has considered whether additional emissions reduction is gained by requiring: (1) The replacement of leaking appliance components after the failure of repair verification; or by (2) maintaining the existing regulatory flexibility allowing owners/operators to make unlimited attempts at repair (followed by subsequent refrigerant recharges) without a mandate to actually replace a leaking component. EPA has also considered the potential emissions avoided and estimated impact on the regulated community, and summarizes those findings as follows: A summary of the scenarios with estimated costs and benefits is summarized as follows:

COSTS AND BENEFITS OF REGULATORY OPTIONS

Option	Costs (million dollars)	Benefits (ODP-weighted tonnes)	Monetized benefits at 3% discount rate (million dollars)
Scenario 1:			
1 (5% and 10%)	\$135.6	493	\$2.5
2 (5% and 20%)	111.0	394	2.0
3 (5% and 30%)	92.2	273	1.4
4 (10% and 10%)	129.9	483	2.5
5 (10% and 20%)	105.3	384	2.0
6 (10% and 30%)	86.5	263	1.3
Scenario 2:			
1 (5% and 10%)	53.2	423	2.2
2 (5% and 20%)	40.9	326	1.7
3 (5% and 30%)	31.1	208	1.1
4 (10% and 10%)	50.5	413	2.1
5 (10% and 20%)	38.2	316	1.6
6 (10% and 30%)	28.5	198	1.0

Under the first scenario, leaking components that fail verification tests must be replaced within 30 days. Under the second scenario, the owners or operators must still make repairs to leaking appliances, but owners or operators have the discretion to determine whether or not repairs will include the replacement of leaking components. Under both scenarios, repairs must be completed within 30 days of leak detection, and verifications (immediate and follow-up within 30 days) must be conducted. Based in part on EPA analysis (*see* accompanying Screening Analysis to Examine the Economic Impact of Proposed Revisions to the Refrigerant Recycling and Emissions Rule, EPA Docket ID No. EPA-HQ-OAR-2003-0167), the Agency has decided to propose a reduction of the leak repair trigger rate for comfort cooling appliances from 15 to 10 percent and for commercial refrigeration appliance and industrial process refrigeration appliances from 35 to 20 percent. EPA believes that this combination of leak repair trigger rates

provides for continued flexibility in allowing appliance owners or operators to decide upon the necessary action needed to repair leaking appliances, and also provides for additional environmental benefit in terms of avoided refrigerant emissions. EPA estimates that the total expected annual incremental cost of the proposed options across all affected sectors is between \$86.5 million and \$135.6 million for the six options under the first scenario (requiring component replacement), and between \$28.5 million and \$53.2 million for the six options under the second scenario. EPA also estimates that a reduction of the leak repair trigger rate for comfort cooling appliances from 15 to 10 percent and for commercial refrigeration appliance and industrial process refrigeration appliances from 35 to 20 percent will result in the lowest costs at \$38.2 million, with the largest environmental benefit 316 ODP weighted tons, when compared to the other five options that were considered.

It was assumed that owners or operators would make repairs only as mandated by regulation. In all likelihood there would be a number of cases in which normal maintenance would involve making the repairs to ensure that the system in question was operating smoothly and performing its function regardless of proposed changes to the rule. Based on the analysis, the total expected incremental cost of the rule across all sectors is \$38.2 million. The small business analysis used a statistical technique known as Monte Carlo analysis to estimate the number of entities in a sector size category that are expected to experience costs exceeding one percent (and three percent) of the average annual value of shipments. This analysis did not account for actions mandated by current regulations. EPA has requested comment on the estimated costs attributable to today's NPRM.

B. Paperwork Reduction Act

The information collection requirements in this proposed rule have

been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR number 1626.10.

Today's action proposes to strengthen existing reporting and recordkeeping requirements at 40 CFR part 82, subpart F by providing information describing the service that has been performed on refrigeration and air conditioning equipment (*i.e.*, appliances) with refrigerant charge sizes greater than 50 pounds. Owners or operators of refrigeration and air-conditioning equipment (*i.e.*, appliances) as well as personnel servicing such appliances are currently required to maintain service records, and today's proposal would require additional specificity concerning the types and results of repairs performed on such appliances. EPA believes that amending the required service records will provide consistency to the existing regulations by placing similar requirements on owners or operators of commercial refrigeration, comfort cooling, and IPR appliances. EPA also believes that amending the currently required reporting and recordkeeping requirements will meet the CAA Section 608(a) requirement for EPA to promulgate regulations regarding use and disposal of class I and II substances to "reduce the use and emission of such substances to the lowest achievable level" and "maximize the recapture and recycling of such substances."

OMB has previously approved the information collection requirements contained in the existing regulations at Subpart F under the provisions of the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060-0256. EPA has estimated that the proposed amendments to the existing reporting and recordkeeping requirements will result in an estimated average annual burden of 6,182 hours at an annual cost of \$148,365. This represents an estimated burden of 5,825 hours at a cost of \$139,803, that will affect up to 133,777 owners or operators of refrigeration and air-conditioning appliances with an ODS refrigerant charge greater than 50 pounds. EPA also estimates that technicians servicing the affected appliances will incur an estimated annual burden of 357 hours at a cost of \$8,562.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control

numbers for EPA's regulations in 40 CFR are listed in 40 CFR Part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, EPA has established a public docket for this rule, which includes this ICR, under Docket ID No. EPA-HQ-OAR-2003-0167. Submit any comments related to the ICR to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 15, 2010, a comment to OMB is best assured of having its full effect if OMB receives it by January 14, 2011. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

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

For purposes of assessing the impacts of this proposal on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The small entities directly regulated by this proposed rule are owners or operators of comfort cooling, commercial refrigeration, or industrial process refrigeration equipment (*i.e.*, appliances) with ozone-depleting refrigerant charges greater than 50

pounds. We have estimated that a total of 353 small businesses will experience compliance costs greater than or equal to one percent of their average value of shipments. This represents 0.34 percent of the 104,068 total potentially affected small businesses examined across all sectors. At the one percent level, the most heavily impacted sector, the ice rink sector, is predicted to have 36 impacted entities (out of 443 small businesses in the sector, or 8.1 percent of the sector). The sector with the most impacted small entities, bakeries, is predicted to have 114 affected small businesses (of the 9,598 potentially impacted small businesses in the sector, or 1.2 percent of the sector). There are 74 small businesses with anticipated compliance costs greater than or equal to three percent of their average value of shipments, mainly in the bakery and ice rink sectors. In the bakery sector (using industrial process refrigeration appliances) 24 companies are expected to have impacts between 3 and 4 percent, while 6 are expected to have impacts between 4 and 9.5 percent. In the ice rink sector (using industrial process refrigeration appliances) 25 companies are expected to experience impacts between 3 and 4 percent, 4 companies will likely experience impacts between 4 and 10 percent and there is a small chance that 1 of those 4 companies may experience impacts between 10 and 26 percent.

Although this proposed rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this rule on small entities. The Agency has reduced the regulatory impact on small businesses by proposing to reduce the recordkeeping and reporting burden placed upon owners or operators of regulated appliances. The Agency is relying more on the maintenance of typical recordkeeping that would be expected to be collected as a part of normal business operations, such as service invoices stating the service performed and the amount of refrigerant added to the leaking appliance. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538 for State, local, or tribal governments or the private sector. The action imposes no enforceable duty on any State, local or tribal governments or

the private sector. The provisions in this proposed rule fulfill the obligations of the United States under the international treaty, *The Montreal Protocol on Substances that Deplete the Ozone Layer*, as well as those requirements set forth by Congress in the Clean Air Act. Viewed as a whole, all of these proposed amendments do not create a Federal mandate resulting in costs of \$100 million or more in any one year for State, local and tribal governments, in the aggregate, or for the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA. This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This proposed rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Today's proposal is expected to primarily affect owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration equipment that hold large ozone-depleting refrigerant charges (*i.e.*, full charges greater than 50 pounds). While such State-owned equipment falls under the regulations of this proposal, this proposal will not impose substantial direct effects on the States or on the relationship between the national government and the States. Thus, Executive Order 13132 does not apply to this rule.

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

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This NPRM affects owners or operators of comfort cooling, commercial refrigeration, and industrial process refrigeration equipment that hold large ozone-depleting refrigerant charges (*i.e.*, full charges greater than 50 pounds). While today's NPRM may impact such equipment that is owned or operated by Tribal Governments it will not significantly or uniquely affect the communities of Indian tribal governments nor does it impose any enforceable duties on communities of Indian tribal governments. Thus, Executive Order 13175 does not apply to this action. EPA specifically solicits additional comment on this proposed action from tribal officials.

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

This action is not subject to EO 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined in EO 12866, and because the Agency does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in the following discussion.

Stratospheric ozone protects the biosphere from potentially damaging doses of ultraviolet (UV) radiation. Depletion of stratospheric ozone, caused by the release of man-made ODS could lead to significant increases in UV radiation reaching the Earth's surface, which could in turn lead to adverse human and animal health effects, as well as ecosystem impacts. This rule will reduce emissions of ODS by amending the leak repair requirements and associated recordkeeping and reporting requirements for owners or operators of appliances using ozone-depleting refrigerants. Reductions in ODS emissions will protect human health and the environment from increased amounts of UV radiation and increased incidence of skin cancer, but will not have a disproportionate effect on children.

EPA notes that for the whole life exposure assumption, the risks of ozone depletion are borne primarily by the present population of adults who will experience these health effects as they age. Depletion of stratospheric ozone results in greater transmission of the sun's ultraviolet (UV) radiation to the

Earth's surface. The following studies describe the effects on children of excessive exposure to UV radiation: (1) Westerdahl J, Olsson H, Ingvar C. "At what age do sunburn episodes play a crucial role for the development of malignant melanoma," *Eur J Cancer* 1994; 30A: 1647–54; (2) Elwood JM, Japson J. "Melanoma and sun exposure: an overview of published studies," *Int J Cancer* 1997; 73:198–203; (3) Armstrong BK, "Melanoma: childhood or lifelong sun exposure," In: Grobb JJ, Stern RS, Mackie RM, Weinstock WA, eds. "Epidemiology, causes and prevention of skin diseases," 1st ed. London, England: Blackwell Science, 1997: 63–6; (4) Whiteman D, Green A. "Melanoma and Sunburn," *Cancer Causes Control*, 1994; 5:564–72; (5) Heenan, PJ. "Does intermittent sun exposure cause basal cell carcinoma? A case control study in Western Australia," *Int J Cancer* 1995; 60: 489–94; (6) Gallagher RP Hill GB, Bajdik CD, *et al.* "Sunlight exposure, pigmentary factors, and risk of nonmelanocytic skin cancer I, Basal cell carcinoma." *Arch Dermatol* 1995; 131: 157–63; (7) Armstrong, DK. "How sun exposure causes skin cancer: an epidemiological perspective," *Prevention of Skin Cancer*. 2004. 89–116.

This NPRM proposes changes to the existing regulatory regime for repair of leaking refrigeration and air-conditioning appliances with ODS refrigerant charges greater than 50 pounds. These changes are not expected to increase the impacts on children's health from stratospheric ozone depletion. The public is invited to submit comments or identify peer-reviewed studies and data that assess effects of early life exposure to UV radiation as a result of the release of ODS refrigerants used in refrigeration and air-conditioning equipment addressed in this NPRM.

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

This action is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This NPRM addresses leak rates of air-conditioning and refrigeration equipment (*i.e.*, appliances) with ozone-depleting refrigerant charges greater than 50 pounds, and proposes to amend the recordkeeping and reporting requirements associated with the refrigerant leak repair required practices. We have concluded that this

rule is not likely to have any adverse energy effects.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This proposed rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

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

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

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. Today’s NPRM addresses repair and maintenance of refrigeration and air-conditioning equipment (*i.e.*, appliances) by requiring repair and associated recordkeeping of such appliances that leak ozone-depleting refrigerants. An overall reduction in the emission rates of such appliances will provide protection to all populations and will not have a disproportionately

high adverse human health or environmental impact on minority or low-income populations.

List of Subjects in 40 CFR Part 82

Environmental protection, Administrative practice and procedure, Air pollution control, Chemicals, Chlorofluorocarbons, Exports, Hydrochlorofluorocarbons, Imports, Reporting and recordkeeping requirements.

Dated: December 7, 2010.

Lisa P. Jackson,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 82, of the Code of Federal Regulations is proposed to be amended as follows:

PART 82—[AMENDED]

1. The authority citation for part 82 continues to read as follows:

Authority: 42 U.S.C. 7414, 7601, 7671–7671q.

2. Section 82.150 is amended by revising paragraph (a) to read as follows:

§ 82.150 Purpose and scope.

(a) The purpose and scope of this subpart is to reduce the use and emissions of ozone-depleting refrigerants to the lowest achievable level and encourage the use of substitutes, by maximizing the recapture and recycling of such ozone-depleting substances during the use, service, maintenance, repair, and disposal of appliances and by restricting the sale of refrigerants in accordance with Title VI of the Clean Air Act.

* * * * *

3. Section 82.152 is amended as follows:

a. By adding definitions for “Comfort cooling appliance,” “Commercial refrigeration appliance,” “Component,” “Industrial process refrigeration appliance,” “Retrofit,” “Retire,” and “Seasonal variance,”

b. By revising the definitions for “Follow-up verification test,” “Full charge,” “Initial verification test,” “Leak rate,” and “Normal operating characteristics,”

c. By removing the definitions for “Commercial refrigeration,” “Critical component,” “Custom-built,” “Industrial process refrigeration,” and “Industrial process shutdown.”

§ 82.152 Definitions.

* * * * *

Comfort cooling appliance means any air-conditioning appliance used to provide cooling in order to control heat and/or humidity in facilities such as office buildings and computer rooms.

Commercial refrigeration appliance means any refrigeration appliance used to store perishable goods in retail food, cold storage warehousing, or any other sector requiring cold storage. Retail food includes the refrigeration equipment found in supermarkets, grocery and convenience stores, restaurants, and other food service establishments. Cold storage includes the refrigeration equipment used to house perishable goods or any manufactured product requiring refrigerated storage.

Component means an appliance component, such as, but not limited to, compressors, condensers, evaporators, receivers and all of its connections and subassemblies without which the appliance will not properly function and/or will be subject to failures.

* * * * *

Follow-up verification test means a test that validates the effectiveness of repairs within 30 days of the appliance’s return to normal operating characteristics and conditions but no sooner than 24 hours after completion of repairs. Follow-up verification tests include, but are not limited to, the use of soap bubbles, electronic or ultrasonic leak detectors, pressure or vacuum tests, fluorescent dye and black light, infrared or near infrared tests, and handheld gas detection devices.

Full charge means the amount of refrigerant required for normal operating characteristics and conditions of the appliance, as determined by using one of the following four methods:

(1) Use the equipment manufacturer’s determination of the full charge;

(2) Use calculations based on component sizes, density of refrigerant, volume of piping, seasonal variances, and other relevant considerations;

(3) Use actual measurements of the amount of refrigerant evacuated from the appliance; or

(4) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge.

* * * * *

Industrial process refrigeration appliance means refrigeration equipment, that may be complex or customized, that is used in a manufacturing process. Industrial process refrigeration appliances include equipment that is directly linked to a manufacturing process, including, but not limited to, appliances used in the chemical; pharmaceutical; petrochemical; food or beverage manufacturing, packaging or processing; power generation; and industrial ice

manufacturing industries. Where one appliance is used for both industrial process refrigeration and another type of refrigeration or air-conditioning application, the appliance will be considered an industrial process refrigeration appliance if 50 percent or more of its operating capacity is used for industrial process refrigeration.

Initial verification test means a leak test that is conducted as soon as practicable after the repair is completed. An initial verification test, with regard to the leak repairs that require the evacuation of the appliance or portion of the appliance, means a test conducted prior to the replacement of the full

refrigerant charge and before the appliance or portion of the appliance has reached operation at normal operating characteristics and conditions of temperature and pressure. An initial verification test with regard to repairs conducted without the evacuation of the refrigerant charge means a test conducted as soon as practicable after the conclusion of the repair work.

Leak rate means the rate at which an appliance is losing refrigerant, calculated at the time of refrigerant addition. The leak rate is expressed in terms of the percentage of the appliance's full charge that has been lost since the last successful repair over a

consecutive 12-month period, and is calculated by:

(1) Step 1. Take the number of pounds of refrigerant added to the appliance since the last successful follow-up verification or the number of pounds of refrigerant added during the previous 365-day period (if the last successful follow-up verification occurred more than one year ago);

(2) Step 2. Divide the result of Step 1. by the number of pounds of refrigerant the appliance contains at full charge;

(3) Step 3. Multiply the result of Step 2. by 100 to obtain a percentage. This method is summarized in the following formula:

$$\text{Leak rate} = \frac{\text{pounds of refrigerant added since last successful follow-up verification}}{\text{pounds of refrigerant in full charge}} \times 100\%$$

(% per year) (or during the past 365 days if that period is greater than one year)

* * * * *

Normal operating characteristics and conditions mean the appliance operating temperatures, pressures, fluid flows, speeds and other characteristics, including full charge of the appliance, that would be expected for a given process load and ambient condition during operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the refrigeration appliance.

* * * * *

Retire means the permanent removal from service of the entire appliance, rendering it unfit for use by the current or any future owner or operator.

Retrofit means the conversion of an appliance from a refrigerant to a substitute with a lower ozone-depleting potential. Retrofit includes a complete conversion of the appliance to achieve systems compatibility with the substitute and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components.

Seasonal variance means the need to add refrigerant to an appliance due to a change in ambient conditions caused by a change in season, followed by the subsequent removal of refrigerant in the corresponding change in season, where both the addition and removal of refrigerant occurs within one consecutive 12-month period.

* * * * *

4. Section 82.156 is amended as follows:

a. By revising paragraph (i),

- b. By adding paragraph (j),
- c. By adding and reserving paragraph (k),
- d. By adding paragraphs (l) and (m).

§ 82.156 Required practices.

* * * * *

(i) Owners or operators of comfort cooling appliances with a full charge greater than 50 pounds of refrigerant must have all leaks within the appliance repaired within 30 days, if the leak rate exceeds 10 percent. The leak rate must be calculated immediately upon each addition of refrigerant to the appliance, unless the addition is required to recharge the appliance immediately after repair or retrofit or the addition is due to a seasonal variance where records justifying the addition due to a seasonal variance are maintained in accordance with § 82.166(r). The determination of the leak rate must be maintained in accordance with § 82.166(k).

(1) Owners or operators shall conduct an initial verification test immediately upon completion of repairs. Methods and results of all initial verification tests must be maintained in accordance with § 82.166(k).

(2) Owners or operators shall conduct a follow-up verification test within 30 days of completing but no sooner than 24 hours after repair and recharge of the appliance. The follow-up verification test shall be conducted at normal operating characteristics and conditions. Methods and results of all follow-up verification tests must be maintained in accordance with § 82.166(k).

(3) If the initial or follow-up verification test indicates that the repairs have not been successful, meaning that leaks are still occurring within the appliance component(s) requiring repair, the owner or operator must make an additional repair attempt, within 30 days of the failed verification and must conduct an additional initial and a follow-up verification test, as set forth in paragraphs (i)(1) and (2) of this section.

(4) Owners or operators of commercial refrigeration appliances must retire or retrofit the appliance to use a refrigerant or substitute with a lower ozone depleting potential (ODP), in accordance with paragraph (l) of this section, if the appliance has experienced three failed verification tests within a consecutive six-month period.

(5) Owners or operators of comfort cooling appliances may have more than 30 days to repair the appliance if one or more of the following conditions apply:

(i) The appliance is located in an area subject to radiological contamination or where the shutting down of the appliance will directly lead to radiological contamination, and where such records are maintained in accordance with § 82.166(o).

(ii) The necessary parts for an appliance component(s) are unavailable, and the owner or operator maintains a written statement from the appliance or component manufacturer or distributor stating the unavailability of parts, and where such records are maintained in accordance with § 82.166(o).

(iii) Other applicable Federal, State, or local regulations make a repair within 30 days impossible, and where such records are maintained in accordance with § 82.166(o).

(iv) Owners or operators are allowed an additional 30 days beyond the date that radiological contamination can be minimized; by which repairs can comply with applicable Federal, State, or local regulations that originally hindered repairs; or the delivery of parts to conduct and complete repairs to the affected appliance.

(j) Owners or operators of commercial refrigeration or industrial process refrigeration appliances with a full charge greater than 50 pounds of refrigerant must have all leaks within the appliance repaired within 30 days, if the leak rate exceeds 20 percent of the full charge. The leak rate must be calculated immediately upon each addition of refrigerant to the appliance, unless the addition is required to recharge the appliance immediately after repair or retrofit, or the addition is due to a seasonal variance where records justifying the addition due to the seasonal variance are maintained in accordance with § 82.166(r). The determination of the leak rate must be maintained in accordance with § 82.166(k).

(1) Owners or operators shall conduct an initial verification test immediately upon completion of repairs. Methods and results of all initial verification tests must be maintained in accordance with § 82.166(k).

(2) Owners or operators shall conduct a follow-up verification test within 30 days of completing, but no sooner than 24 hours after repair and recharge of the appliance. The follow-up verification test shall be conducted at normal operating characteristics and conditions. Methods and results of all follow-up verification tests must be maintained in accordance with § 82.166(k).

(3) If the initial or follow-up verification test indicates that the repairs have not been successful, meaning that leaks are still occurring within the appliance component(s) requiring repair, the owner or operator must make an additional repair attempt, within 30 days of the failed verification and must conduct an additional initial and a follow-up verification test, as set forth in paragraphs (j)(1) and (2) of this section.

(4) Owners or operators of commercial refrigeration or industrial process refrigeration appliances must retire or retrofit the appliance to use a refrigerant or substitute with a lower ozone depleting potential (ODP), in accordance with paragraph (l) of this

section, if the appliance has experienced three failed verification tests within a consecutive six-month period.

(5) Owners or operators of commercial refrigeration or industrial process refrigeration appliances may have more than 30 days to repair the appliance or replace the leaking component(s) if one or more of the following conditions apply:

(i) The appliance is located in an area subject to radiological contamination or where the shutting down of the appliance will directly lead to radiological contamination, and where such records are maintained in accordance with § 82.166(o).

(ii) The necessary parts for a component are unavailable and the owner or operator maintains a written statement from the appliance or component manufacturer or distributor stating the unavailability of parts, and where such records are maintained in accordance with § 82.166(o).

(iii) Other applicable Federal, State, or local regulations make a repair within 30 days impossible, and where such records are maintained in accordance with § 82.166(o).

(iv) Owners or operators are allowed an additional 30 days beyond the date that radiological contamination can be minimized; by which repairs can comply with applicable Federal, State, or local regulations that originally hindered repairs; or the delivery of parts to conduct and complete repairs to the affected appliance.

(k) [Reserved]

(l) Owners or operators are not required to repair the appliance within 30 days as specified in paragraphs (i) and (j) of this section, if within 30 days of the date that the appliance exceeded the applicable leak rate, they develop a written and dated retrofit or retirement plan.

(1) The written and dated retrofit or retirement plan must include a six-month schedule to either permanently retire the entire appliance from operation or retrofit the appliance for use with a substitute with a lower ozone-depleting potential. The retrofit or retirement plan must be maintained on-site at the physical location of the affected appliance, in accordance with § 82.166(n).

(2) Retrofit or retirement of the appliance must be completed within six months of the date of the retrofit or retirement plan.

(3) Owners or operators may have more than 6 months to complete the retrofit of the appliance, if the supplier of the appliance or one or more of its components has quoted a delivery time

of more than 12 weeks from the date of the retrofit plan. In such instances, the owner or operator will have an additional 12 weeks after the date of delivery of the component(s) in order to completely implement the retrofit of the appliance. A written statement from the supplier must be maintained in accordance with § 82.166(p).

(m) The amount of time for owners or operators to complete and verify repairs, prepare and implement written retrofit or retirement plans, under paragraphs (i) and (j) of this section, is temporarily suspended during the time that an appliance is undergoing system mothballing, as defined in § 82.152. The time for owners or operators to complete repairs, replace components, or fully implement written retrofit or retirement plans will resume on the day the appliance is brought back on-line, indicating that the appliance is no longer undergoing system mothballing.

* * * * *

5. Section 82.166 is amended as follows:

a. By revising paragraphs (j) through (q),

b. By adding paragraphs (r) through (v).

§ 82.166 Reporting and recordkeeping requirements.

* * * * *

(j) Persons servicing appliances with a full charge greater than 50 pounds of refrigerant must provide the owner or operator of such appliances with an invoice or other documentation which includes: the quantity and type of refrigerant added to the appliance; the identity and location of the appliance; the date and type of service performed; the physical location of any leaks; the amount and type of refrigerant recovered from the appliance; and the date, method, and results of initial verification and follow-up verification tests.

(k) Owners or operators of appliances with a full charge greater than 50 pounds of refrigerant must keep records documenting the quantity and type of refrigerant added to the appliance; the full charge of the appliance; the calculated leak rate of the appliance; the identity and location of the appliance; the date and type of service performed; the physical location of any leaks; the amount and type of refrigerant recovered from the appliance; and the date, method, and results of initial verification and follow-up verification tests.

(l) Owners or operators of appliances with a full charge greater than 50 pounds of refrigerant must keep records

of the type and quantity of refrigerant purchased.

(m) Owners or operators of appliances with a full charge greater than 50 pounds of refrigerant must keep records of the types and amounts of refrigerant recovered from their appliances that are transferred to a different owner. The records must include the name and address of the facility accepting used refrigerant, and the date that the refrigerant was transferred.

(n) Owners or operators of appliances must maintain a dated retrofit or retirement plan that establishes a six-month schedule to retrofit or retire the leaking appliance, where required in § 82.156(l)(1). The dated plan must be maintained at the site of the leaking appliance, and at a minimum must include: identification and location of the appliance; type and full charge of the refrigerant used by the leaking appliance; location of all leaks and efforts taken to address leaks prior to retrofit or retirement; type and full charge of the substitute to which the appliance will be converted, if retrofitted; itemized procedure for retrofit including, but not limited to, the procedure for flushing old refrigerant and lubricant, changes in lubricants, filters, gaskets, o-rings, or valves; the plan for the disposition of recovered refrigerant; the plan for the disposition of the appliance, if retired; and a six-month schedule for the complete retrofit or retirement of the appliance.

(o) Owners or operators of appliances who are unable to complete repairs in 30 days due to radiological conditions, unavailability of components, or

government regulations must maintain dated records justifying the need for additional time, by maintaining the following records, as applicable:

(1) A written statement describing the radiological conditions that prevent immediate repair of the appliance;

(2) A written statement from the appliance or component manufacturer or distributor estimating a date of delivery for parts required to complete repairs of the appliance;

(3) A written statement describing the applicable Federal, State, or local regulations that prevent the immediate repair of the appliance.

(p) Owners or operators of appliances who are unable to complete retrofit plans within 6 months, due to the unavailability of one or more of the appliance's components that has a quoted delivery time of more than 12 weeks, as specified in § 82.156(l)(3), must maintain a written statement from the appliance or component manufacturer or distributor estimating a date of delivery for parts required to complete the retrofit plan. Owners or operators must also maintain records documenting the actual date of delivery of the appliance component.

(q) Owners or operators of appliances with refrigerant charges greater than 50 pounds must maintain documents showing all appliance or appliance component data, measurements, calculations and assumptions used to determine the full charge, as defined at § 82.152.

(r) Owners or operators of appliances with refrigerant charges greater than 50 pounds who seek an exemption from

the requirement to calculate the leak rate upon each addition of refrigerant, as specified in § 82.152, due to a seasonal variance must maintain records stating the amount and type of refrigerant and the date that the refrigerant was added to the appliance. Owners or operators must also maintain a record of the amount and type of refrigerant and the date that refrigerant was removed from the appliance to counter the seasonal adjustment.

(s) Technicians certified under § 82.161 must keep a copy of their certificate on-site, at their place of business.

(t) Technicians servicing, repairing, or maintaining appliances containing more than 50 pounds of refrigerant must maintain records recording the amount and type of refrigerant recovered, but not returned to the appliance.

(u) Any person, including, but not limited to, service contractors or technicians and refrigerant wholesalers or brokers, who distributes or sells, or offers to distribute or sell, used refrigerant, that has not yet been reclaimed, to a new owner must maintain records documenting the type and quantity of used refrigerant distributed or sold, the date of such distribution or sale, and the name and address of the entity taking possession of the used refrigerant.

(v) All records required under this section must be kept on-site for a minimum of three years, unless otherwise stated.

[FR Doc. 2010-31337 Filed 12-14-10; 8:45 am]

BILLING CODE 6560-50-P