SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Environmental Assessment for Proposed Amended Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems and Proposed Rule 1415.1 – Reduction of Refrigerant Emissions from Stationary Refrigeration Systems

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INTRODUCTION

In December 2009, the California Air Resources Board (CARB) approved the Management of High Global Warming Potential Refrigerants for Stationary Sources regulation (commonly called the Refrigerant Management Program) to help reduce the state's greenhouse gas (GHG) emissions to 1990 levels by year 2020, as required by the California Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32). The regulation will go into effect on January 1, 2011.

The Refrigerant Management Program's goal is to reduce emissions of high global warming potential (GWP) refrigerants such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) used in commercial and industrial refrigeration systems. The regulation requires registration, leak detection and monitoring, leak repair, retrofit or retirement, reporting, and recordkeeping for the affected industries including owners or operators of refrigeration systems, any person who services a refrigeration system, and distributors, wholesalers, and reclaimers of high GWP refrigerants.

Currently, the South Coast Air Quality Management District (SCAQMD) has a similar regulation, Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems (Rule 1415), which regulates ozone depleting refrigerants (CFC and HCFC) emissions. Rule 1415 requirements, however, apply to both stationary refrigeration and air conditioning systems whereas the Refrigerant Management Program regulates only stationary refrigeration systems. In certain aspects, the CARB's regulation is more stringent than Rule 1415 particularly when it comes to leak inspection, leak detection and monitoring, and reporting requirements for refrigeration systems. SCAQMD staff's objective is to ensure that the SCAQMD refrigerant rule is equivalent in every aspect to the CARB regulation; therefore, a new Rule 1415.1 – Reduction of Refrigerant Emissions from Stationary Refrigeration Systems (Rule 1415.1) is being proposed to reduce refrigerant emissions from stationary refrigeration systems and to align SCAQMD's program with CARB's Refrigerant Management Program (RMP).[1] Proposed Rule (PR) 1415.1 would adopt all provisions in the state regulation pertaining to the control of high GWP refrigerant emissions. Because provisions in PR 1415.1 would also apply to refrigerant requirements, refrigerant requirements are no longer necessary in Rule 1415; therefore, these provisions would be deleted as part of the proposed amendment to Rule 1415 amendment.

For Rule 1415, staff is proposing to expand the scope of the rule to include high GWP refrigerants. In addition, the proposed amendments to Rule 1415 would eliminate all requirements relative to refrigeration systems while keeping only the existing requirements for air conditioning systems in this rule. Separate rules for air conditioning (PAR 1415) and refrigeration systems (PR 1415.1) would minimize confusion with regard to rule applicability, improve clarity, and enhance rule enforceability.

Pursuant to the California Environmental Quality Act (CEQA) the SCAQMD is the lead agency for the proposed project and has prepared this Draft Environmental Assessment to evaluate

[1] CARB's RMP §95395 states that the requirements specified in sections 95838 (registration requirements), 95384 (implementation of fees), 95385 (leak detection and monitoring requirements), 95386 (leak repair requirements), 95387 (requirements to prepare retrofit or retirement plans), 95388 (reporting requirements), and 95389 (recordkeeping requirements) of the RMP shall not be enforced within the geographical boundaries of any air district that adopts and enforces requirements that will achieve emission reductions from stationary refrigeration systems that are equivalent to or greater than those achieved pursuant to sections 95383, 95384, 95385, 95386, 95387, 95388 and 95389.

potentially significant adverse environmental impacts that could occur as a result of amending Rule 1415 and adopting the new Rule 1415.1.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1415/PR 1415.1 is a "project" as defined by the CEQA. SCAQMD is the lead agency for the project and has prepared this Draft Environmental Assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110. The Draft EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project. CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this Draft EA pursuant to SCAQMD Rule 110 and CEQA to address the potential adverse environmental impacts associated with the proposed project.

It is important to note that CARB also has an approved certified regulatory program pursuant to California Public Resources Code §21080.5 (see also CEQA Guidelines §15251(d)) and has prepared an environmental impact analysis in conjunction with adopting its Refrigerant Management Program. CARB's environmental impact analysis is contained in the Final Statement of Reasons (FSOR) for Rulemaking for the Adoption of the Proposed Regulation for the Management of High GWP Refrigerants for Stationary Sources, Agenda Item No. 09-10-07, which was approved by CARB's Board on December 9, 2009 and was filed with the Office of Administrative Law (OAL) on September 14, 2010. CARB staff anticipates an OAL determination by October 26, 2010. CARB staff concluded that there would be no significant adverse environmental impacts from implementation of its proposed regulation. A Notice of Decision was prepared pursuant to Public Resources Code §21080.5(d)(2)(E) by CARB after the adoption of the FSOR, which included the environmental impact analysis.

To eliminate repetitive discussions on the same environmental issues pertaining to CARB's regulation for the management of high GWP refrigerants for stationary sources relative to the SCAQMD adopting and implementing PAR 1415/PR 1415.1, pursuant to CEQA Guidelines §15152, the analysis in this Draft EA relies on the concept of "tiering" off of the environmental impact analysis prepared by CARB. This means that the Draft EA incorporates by reference the environmental impact discussions and conclusions contained in CARB's FSOR. The CARB's FSOR can be downloaded from the CARB website at http://www.arb.ca.gov/regact/2009/gwprmp09/gwprmp09.htm, at the CARB office at 1001 "I" Street, P.O. Box 2815 Sacramento, CA 95812 or by contacting CARB staff at (916) 322-2990.

SCAQMD's review of the proposed project, which incorporates by reference the environmental analysis in CARB's FSOR, shows that the project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are included in this Draft EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

Any comments received during the public comment period from November 2, 2010 to December 1, 2010, on the analysis presented in this Draft EA will be responded to and included in the Final EA. Prior to making a decision on PAR 1415/PR 1415.1, the SCAQMD Governing Board must review and certify the Final EA as providing adequate information on the potential adverse environmental impacts of the proposed amendments to Rule 1415 and proposed Rule 1415.1.

PROJECT LOCATION

PAR 1415/PR 1415.1 would affect facilities located throughout the SCAQMD's jurisdiction. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of the Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

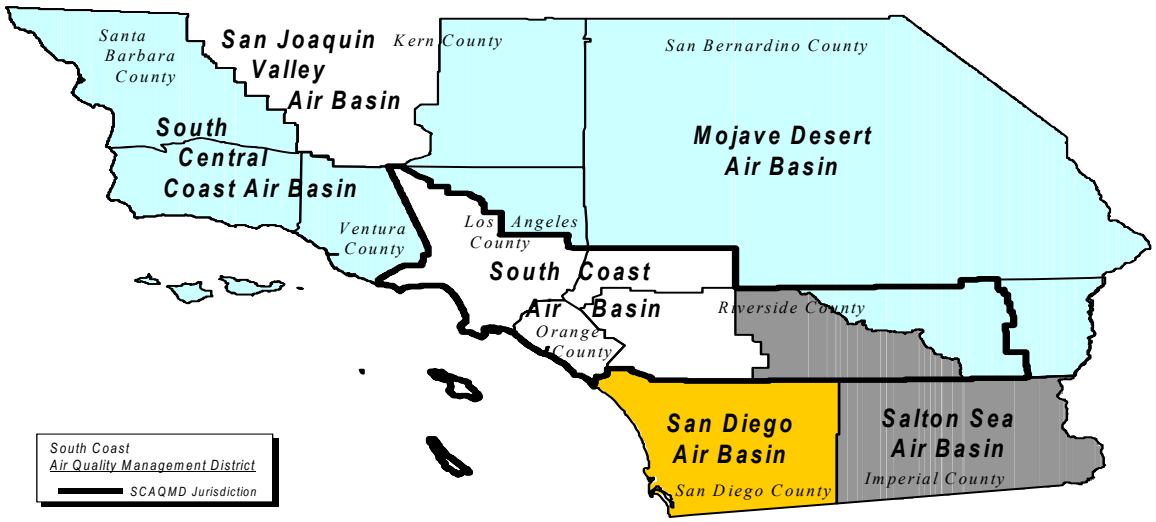

Figure 1-1
Boundaries of the South Coast Air Quality Management District

PROJECT OBJECTIVE

The project objectives of the proposed project include the following:

- Increase the scope of Rule 1415 to regulate high GWP refrigerants;
- Remove all requirements related to refrigeration systems from Rule 1415;
- Create a new rule (proposed Rule 1415.1) that includes all of the control requirements for refrigeration systems deleted from Rule 1415;
- Incorporate all the relevant provisions from CARB's Refrigerant Management Program into proposed Rule 1415.1;
- Eliminate any inconsistencies between PR 1415.1 and the state-wide program; and
- Allow a 45-day repair exemption in Rule 1415 for air conditioning systems to be consistent with requirements in proposed Rule 1415.1.

PROJECT BACKGROUND

The SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion." The Policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March of 1992, the SCAQMD's Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs;
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California greenhouse gas emission reduction goal.

In response to the above policy, Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems, was adopted on June 7, 1991, and later amended on October 14, 1994, to reduce emissions of Class I and Class II ozone-depleting refrigerants from stationary refrigeration and air conditioning systems. Class I refrigerants are typically CFCs, while Class II refrigerants are all HCFCs, and are listed under section 602 of the Clean Air Act.

Production of CFCs and HCFCs were designated for phase out under the Montreal Protocol, primarily due to concerns about stratospheric ozone depletion. The use of these ozone depleting substances (ODS) as refrigerants is also regulated for the same reason. As a result of the Montreal Protocol's phase-out of ODS, the use of CFCs and HCFCs as refrigerants has been replaced with HFCs and PFCs, generally referred to as ODS substitutes. These ODS substitutes are not ozone depleters, but have much higher GWP, [2] referred to as greenhouse gases (GHGs). The use of ODS substitutes is increasing and will continue to increase as ODS refrigerants are replaced by these high GWP ODS substitutes, particularly the HFCs. Consequently, without additional control GHG emissions are projected to increase.

[2] Global warming potential (GWP) is a measure describing how much global warming of a given amount and type a GHG can cause. CO2 is given as the reference point. Other GHGs' GWP are derived compared to CO2. For example, the GWP of methane equals 21, which means that one ton of methane would generate the same amount of global warming as 21 tons of CO2. Using CO2 as the GWP reference allows GHG emissions to be characterized in CO2 equivalent (CO2E).

The increase in GHGs in the atmosphere has been considered responsible for the average rise in the Earth's temperature that has been observed in recent years, which is commonly referred to as global warming. These GHGs make the Earth warmer by trapping heat from the sun in its atmosphere, which increases global temperatures. Many chemical compounds found in the Earth's atmosphere, such as methane, carbon dioxide, nitrous oxide, HCFCs, PFCs, and HFCs, act as GHGs. There is strong evidence that significant amounts of GHGs are added to the atmosphere as a result of human activities, thereby, contributing to global warming. Scientists believe that a warmer Earth may lead to changes in weather patterns, a rise in sea level, and may have significant impacts on plants, wildlife, and humans.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), establishing a comprehensive program to reduce the state's GHG emissions to the 1990 level by year 2020. AB 32 directed CARB to begin developing discrete early action measures to reduce greenhouse gases while also preparing a Scoping Plan to identify the best approach to reach the 2020 target. In addition, AB 32 requires that any GHG emission reduction measures developed be technologically feasible and cost-effective.

In December 2009, CARB approved the Management of High GWP Refrigerants for Stationary Sources regulation, commonly referred to as the Refrigerant Management Program. This program is one of the early action measures adopted by CARB under AB 32 aimed at reducing the state's GHG emissions. The regulation is scheduled to go into effect on January 1, 2011.

The Refrigerant Management Program seeks to reduce emissions of high GWP refrigerants from stationary refrigeration systems. A high-GWP refrigerant is any compound used as a heat transfer fluid or gas, and includes CFCs, HCFCs, HFCs, PFCs, or any compound or blend of compounds with a GWP value equal to or greater than 150, or any ozone depleting substance as defined in Title 40 of the Code of Federal Regulation, Part 82, §82.3. These substances are GHGs which are thousands of times more potent than carbon dioxide (CO_2). The CARB regulation addresses stationary commercial and industrial refrigeration systems that can have high leak rates, but currently have minimal oversight in areas with specific refrigerant rule or regulation. Specifically, facilities with refrigeration systems using more than 50 pounds of high GWP refrigerants; or those who service refrigeration systems; or those who distribute, sell or reclaim high GWP refrigerants, must comply with the regulation.

The CARB regulation requires registration, leak detection and monitoring, leak repair, retrofit or retirement, reporting, and recordkeeping for owners or operators of refrigeration systems subject to the regulation. Reporting and recordkeeping requirements are also applicable to distributors, wholesalers, and reclaimers of high GWP refrigerants. Additionally, required service practices for refrigerant management are applicable to any person who services a refrigeration system that uses a high GWP refrigerant.

The requirements in the CARB Refrigerant Management Program are similar to existing federal regulations under section 608 of the Clean Air Act, particularly in the areas of leak repair, required service practices, and recordkeeping requirements. In addition, the CARB regulation was developed in cooperation with SCAQMD staff and is based largely on SCAQMD Rule 1415. However, there are certain areas where the existing SCAQMD Rule 1415 differs with the CARB regulation.

While current Rule 1415 applicability is limited to ODS refrigerants, such as CFCs and HCFCs, the CARB Refrigerant Management Program includes both ODS and ODS substitute refrigerants (GHGs). In addition, SCAQMD Rule 1415 covers both refrigeration and air conditioning systems while the CARB regulation is limited to refrigeration systems only. Some components of CARB's regulation are more stringent than SCAQMD Rule 1415, e.g., increased frequency of leak inspection, leak detection and monitoring, and reporting requirements, while other components are less stringent, e.g. operations may have longer time periods to repair leaks depending on circumstances.

SCAQMD staff's proposal to create a new Rule 1415.1 to control high GWP refrigerant emissions solely from stationary refrigeration systems would allow the SCAQMD to align its regulation with CARB's Refrigerant Management Program. Proposing separate rules for air conditioning (PAR 1415) and refrigeration systems (PR 1415.1) would minimize confusion with regard to rule applicability, improve clarity, and enhance rule enforceability. PR 1415.1 would incorporate all relevant provisions from SCAQMD Rule 1415 relating to refrigeration systems and the state regulation to reduce emissions of high GWP refrigerants. By proposing Rule 1415.1, SCAQMD staff can implement the state's Refrigerant Management Program. A Memorandum of Understanding with CARB will address inspection frequency and fee reimbursement to SCAQMD.

PROJECT DESCRIPTION

PAR 1415

The following is a summary of the proposed amendments to Rule 1415. Other minor changes are also proposed for clarity and consistency throughout the rule. A copy of Rule 1415 can be found in Appendix A.

Rule Title
Currently, the rule title pertains to stationary refrigeration and air conditioning systems. The words "refrigeration and" would be removed from the rule title.

Subdivision (a) - Purpose
"Class I and Class II" would be replaced by "high-GWP". "Refrigeration" would be removed from the purpose.

Subdivision (b) - Applicability
"Refrigeration" would be replaced by "air conditioning" throughout the proposed rule. "High-GWP would be added before refrigerant. The sentence "all amendments to this rule adopted as of October 14, 1994 shall take effect as of October 14, 1994" would be removed.

Subdivision (c) - Definitions
New definitions would be added; other definitions would be modified to clarify rule intent, and make the definitions consistent with Proposed Rule 1415.1; and definitions that are no longer relevant would be deleted. Modified definitions include additional refrigerant charge, audit, certified technician, person, reclaim, recycle, refrigerant leak, and self contained recovery equipment.

New definitions include air conditioning system, bubble test, certified reclaimer, certified refrigerant recovery or recycling equipment, chlorofluorocarbon or CFC, component, GWP value, high GWP refrigerant (which includes any ODS defined in Title 40 of the Code of Federal Regulations, Part 82, §82.3), hydrochlorofluorocarbon or HCFC, hydrofluorocarbon or HFC, and perfluorocarbon or PFC.

In addition, staff is proposing to delete the following terms that are no longer applicable: approved recycling equipment, certified auditor, Class I refrigerant, Class II refrigerant, high-pressure refrigeration system, low-pressure refrigeration system, maintenance, refrigeration system, and very high pressure refrigeration system.

Subdivision (d) - Requirements

- Registration and leak inspection requirements in paragraph (d)(2) would be moved to paragraph (d)(1), and requirements that pertain to owners or operators of air conditioning systems would be clarified as follows:
  - Registration Plan requirement in subparagraph (d)(2)(C) would be moved to subparagraph (d)(1)(A). New information to be included during submission of the Registration Plan, consistent with existing data reported in the current Rule 1415 Registration Form would be added.
  - The annual audit requirements in subparagraphs (d)(2)(A) and (d)(2)(B) would be moved to and consolidated under subparagraph (d)(1)(B). Language pertaining to leak detection methods would be modified to reflect current industry practices, such as the use of refrigerant leak detection device, a bubble test, or observation of oil residue. Further, the rule provision in clause (d)(2)(B)(i) requiring a certified technician to conduct leak inspection would be removed to make the rule consistent with state and federal leak inspection requirement.
  - Redundant recordkeeping requirement in clause (d)(2)(B)(ii) would be moved to the Recordkeeping section, paragraph (e)(1).
- Leak repair requirements in paragraph (d)(3) would be moved to paragraph (d)(2).
  - A provision in paragraph (d)(3) would be added to allow leak repair periods of up to 45 days. The 45 days extension to fix a refrigerant leak would apply only in situations where a certified technician is not available, or the part(s) needed to complete the repair is unavailable within 14 days of initial leak detection. The owner or operator of the affected air conditioning system would be required to keep a written record to prove that a certified technician or the required parts are not available.
- Requirements in paragraph (d)(1) would be moved to paragraph (d)(4). In addition, language is proposed in (d)(4)(A) to clarify the U.S. EPA certified technician requirement.
- Language in paragraph (e)(5), under the Recordkeeping section, would be moved to subparagraph (d)(5)(B) under the Requirements section, which would allow an authorized representative of a person employing at least one certified technician to purchase refrigerant. Consequently, similar language in paragraph (e)(5) is proposed for deletion.
- The words "Class I or Class II" would be replaced with "high global warming" in paragraph (d)(6) to clarify rule intent and enhance rule enforceability.

Subdivision (e) – Recordkeeping

Obsolete rule language in (e)(1)(iv) and (e)(8)(D) pertaining to permit number requirement for refrigerant recovery and recycling equipment would be deleted. Such equipment is now exempt from permit requirements pursuant to Rule 219 (d)(11).

PR 1415.1

The following is a summary of PR 1415.1. A copy of PR 1415.1 can be found in Appendix A.

Subdivision (a) - Purpose

The proposed rule would reduce emissions of high GWP refrigerants from stationary refrigeration systems by requiring persons subject to this rule to recover, recycle, or reclaim refrigerant and to minimize refrigerant leaks.

Subdivision (b) - Applicability

The proposed rule would apply to any person who owns or operates a refrigeration system, as defined in this rule. The proposed rule would also apply to any person who installs, replaces, repairs, maintains, services, disposes, audits, or relocates any refrigeration system, regardless of charge size; to any person who services or maintains recycling and recovery equipment; and to any person who recycles, recovers, reclaims, distributes or sells high GWP refrigerant.

Subdivision (c) - Definitions

Definitions for additional refrigerant charge, certified reclaimer, certified technician, reclaim, recover, recycle, refrigerant leak, and refrigeration system from the existing Rule 1415 have been included in PR 1415.1, but have been modified to be consistent with CARB's RMP.

Approved recovery equipment, approved recycling equipment, audit, certified auditor, Class I refrigerant, Class II refrigerant, disposed, high pressure refrigeration system, low pressure refrigeration system, maintenance, person, reclaim, self-contained recovery equipment, and very high pressure refrigeration system are defined in the existing Rule 1415, but are not included because they are not relevant to PR 1415.1.

Forty-seven new definitions would be added to the proposed rule in order to clarify rule intent and enhance rule enforceability. ODS defined in Title 40 of the Code of Federal Regulations, Part 82, §82.3) have been placed under the definition of high GWP refrigerants. These definitions are consistent with those found in the CARB Refrigerant Management Program.

Subdivision (d) - Requirements

- Paragraph (d)(1) would require that owners and operators of refrigeration systems with full charge greater than 50 pounds of high GWP refrigerant submit a Registration Plan to SCAQMD annually. However, registration with SCAQMD would cease once the CARB registration requirements for the refrigeration system become effective. Registration of the refrigeration system with CARB would be required in 2012 for large refrigeration systems (full charge greater than or equal to 2,000 pounds refrigerant); 2014 for medium-sized refrigeration systems (full charge equal to or greater than 200 pounds but less than 2,000 pounds refrigerant); and 2016 for small refrigeration systems (full charge greater than 50 pounds but less than 200 pounds refrigerant). For facilities with multi-size systems, e.g. large and medium-size refrigeration systems operating at the facility, the owner or operator would have the option of registering the medium-size refrigeration system at the same time as registering the large system, which would be required in 2012, even though registration of a medium-size refrigeration system would not be required until the year 2014 if it was the largest or only system operating at the facility.

  The proposed registration provision would also include information that facility operators would need to provide about the refrigeration systems during registration, and a provision

requiring initial and annual implementation fees to cover the costs of administering and enforcing the rule based on fee guidelines established by CARB. Fees paid would be based on system operating with the largest full charge at the facility. There would be no implementation fee for small refrigeration systems. Additionally, the proposal would include change of ownership requirements for refrigeration systems previously registered with CARB.

- Leak Detection and Monitoring Requirements, paragraph (d)(2)
  The proposed requirements would incorporate CARB's regulation on leak inspection and monitoring. Beginning January 1, 2011, owners or operators of large refrigeration systems (full charge greater than or equal to 2,000 pounds of refrigerant) would be required to conduct monthly leak inspections. Quarterly leak inspections would be required for medium-sized refrigeration systems (full charge greater than or equal to 200 pounds but less than 2,000 pounds of refrigerant), while annual leak inspections would be required for small refrigeration systems (full charge greater than 50 pounds but less than 200 pounds of refrigerant). These leak inspection requirements would not apply if the refrigeration system has an automatic leak detection system.

  In addition, the proposal would require the installation of an automatic leak detection system for large refrigeration systems beginning in year 2012. Leak inspection methods consistent with industry practices, e.g. refrigerant leak detection device, bubble test, observation of oil residue, are also proposed.

- Leak Repair Requirements, paragraph (d)(3)
  Consistent with Rule 1415, the proposal would require the repair of a refrigerant leak within 14 days of initial leak detection. In order to be consistent with the CARB regulation, however, PR 1415.1 would also allow longer repair periods of 45 days and 120 days depending on the nature of the refrigeration system, and the circumstances surrounding the leak. A 45-day leak repair period would be allowed if: a certified technician is not available, repair parts are unavailable or if refrigerant leak repair requires an industrial process shutdown. A 120-day leak repair period would be allowed if: the facility is subject to Mandatory GHG Emissions Reporting requirements, the refrigeration system is an industrial process refrigeration appliance, the refrigerant leak repair requires an industrial process shutdown, and written records of required conditions for 120-day leak repair period are maintained.

  The proposal would also require the owner or operator to prepare and implement a retrofit and retirement plan if the refrigerant leak cannot be repaired within the allowable repair period of 14, 45, or 120 days.

- Retrofit or Retirement Plan Requirements, paragraph (d)(4)
  The proposed provision would require the owners or operators of refrigeration systems that continue to leak to establish a schedule to retrofit or retire the system within six months of initial leak detection. This section would also include specific information that would need to be included in the plan pertaining to the facility and to the retrofitted or newly installed refrigeration system.

  The retrofit or retirement plan would not need to be submitted to the Executive Officer, but needs to be maintained and kept at the facility.

- Approval of Exemptions, paragraph (d)(5)
  The owner or operator of a facility with a refrigeration system may request for an exemption from leak repair and retrofit requirements for up to three years if Executive Officer determines:
  - Life Cycle Exemption –leak cannot be repaired, and allowing leak would result in less direct and indirect emissions than replacing leaking system.
  - Economic Hardship Exemption – compliance would cause extraordinary economic hardship; and applicant has prepared a compliance report that can be implemented and can achieve compliance as expeditiously as possible.
  - Natural Disaster Exemption – failure to repair leak was due to a natural disaster, act of war, act by a public enemy or civil disorder or riot.

  Facility owners or operators need to submit a written application to the Executive Officer demonstrating that one or more of the exemption criteria have been met.

Subdivision (e) – Required Service Practices and Prohibitions

Specific service practices and prohibitions pertaining to the installation, service, or repair of all refrigeration systems, regardless of charge size; the operation of certified refrigerant recovery or recycling equipment; and sale, use and disposal of refrigerants would be required. Some of the requirements would include the mandatory use of U.S. EPA certified technician for service or repair of refrigeration systems; recovery and recycling of refrigerant and the use of certified refrigerant recovery and recycling equipment during leak repair; and restrictions on the sale of refrigerants.

The proposed provisions, expanded to include high GWP refrigerants, were developed from Title 40, Part 82 of the Code of Federal Regulations, Subpart F requirements specific to ODS refrigerants. Most of these provisions are already part of the requirements in the current Rule 1415 but limited to ODS refrigerants.

Subdivision (f) – Reporting

Reporting requirements for owners or operators of refrigeration systems, including refrigerant distributors, wholesalers, and reclaimers would be included in PR 1415.1. Specifically, owners or operators of large and medium-sized systems would be required to submit annually a Facility Stationary Refrigeration Report (Annual Report). Reporting would not be required for facilities with small refrigeration systems.

Submission of the Annual Report would begin in year 2012 for large refrigeration systems and year 2014 for medium-sized refrigeration systems. The Annual Report would be required to contain information about the refrigeration system such as equipment type and model, specific data on refrigeration system service and leak repairs, as well as refrigerant purchases and use information.

Refrigerant distributors or wholesalers would also be required to report annually specific information on refrigerants that was purchased for resale, refrigerants sold, or shipped to a certified reclaimer. In addition, certified reclaimers would be required to submit an annual report on the amount of refrigerant received for reclamation or destruction, the amount of refrigerant reclaimed, or the amount of refrigerant shipped outside of California for reclamation or destruction.

Subdivision (g) – Recordkeeping
Recordkeeping for facilities with stationary refrigeration systems, refrigerant wholesalers or distributors, refrigerant reclaimers, and persons owning and operating a certified refrigerant recovery or recycling equipment would be required.

Subdivision (h) – Exemption
- An exemption for tactical support equipment would be included.
- Criteria for fee exemptions would be included.
- Leak repair and retrofit/retirement plan requirements would not apply if during the time the refrigeration system is undergoing or is in system mothballing until the refrigeration system resumes operation at a facility, the owner or operator of a refrigeration system has received an exemption from the Executive Officer pursuant to the emissions life cycle exemption, economic hardship exemption or natural disaster exemption, or the owner or operator of a refrigeration system has submitted a request for an exemption and until a final determination is made by the Executive Officer on a emissions life cycle exemption, economic hardship exemption or natural disaster exemption. Written records would be required to be kept that document that the owner or operator has requested or received and exemption.
- Exemption from the contractor's license requirements would apply if the refrigeration system or refrigerant leak repair is performed by the facility owner or operator or its employees with wages as sole compensation; the refrigeration system service or refrigerant leak repair is performed by the facility owner or operator through one undertaking or by one or more contracts, and the aggregate contract price for labor, materials, and all other items is less than five hundred dollars; or the refrigeration system service or refrigerant leak repair is performed by any political subdivision of the United States government, or the State of California, or by any incorporated town, city, county, irrigated district, reclamation district or other municipal or political corporation.

Subdivision (i) – Violations
Enforcement actions for failure to comply with the provisions of the rule are proposed.

Subdivision (j) – Severability
This section would be added to clarify that in the event any provision of the rule is invalidated by judicial order, the remainder of the rule shall remain in effect.

DIFFERENCES BETWEEN RULE 1415 AND PROPOSED RULE 1415.1
As noted previously, the proposed amendments to Rule 1415 consists primarily of deleting the provisions related to refrigerant systems and incorporating them into PR 1415.1. PR 1415.1 also includes all components of CARB's regulation. Incorporating CARB's regulation into PR 1415.1 means that some provisions from Rule 1415 would be modified, while some new requirements would be added. Table 1-1 shows the original provisions relating to refrigerant systems in existing Rule 1415 compared to similar provisions in PR 1415.1. New provisions in PR 1415.1 that are not currently included in Rule 1415.1 are also shown.

Table 1-1
Differences between PR 1415.1 and the Existing Rule 1415

Rule Section	PR1415.1 Provisions	Rule Section	Rule 1415 Provisions	Comment
	Applicability			
(a) & (b)	▪ Applies to refrigeration systems only with full charge > 50 lbs and using high GWP refrigerants (CFC,, HCFC, HFC, PFC or any compound with GWP = or > 150)	(a) & (b)	▪ Applies to refrigeration and air conditioning systems > 50 lbs capacity and using CFC and HCFC refrigerants	PR 1415.1 applies only to refrigeration systems
	Registration			
(d)(1)(B)	▪ Registration begins 2012 for large systems, 2014 for medium size systems, and 2016 for small systems ▪ Implementation fee paid every year	(d)(2)(C)	▪ Register at start of operation and every 2 years thereafter ▪ Fee paid at time of registration	PR 1415.1 would require annual fees instead of a one-time registration fee.
	Leak Detection and Monitoring			
(d)(2)(B)(1)	For refrigeration systems with full charge > or = 2,000 lbs of refrigerant, and operates or is intended to be operated year round: ▪ Conduct monthly leak inspection if refrigerant circuit is located entirely within an enclosed building or structure, or the compressor, evaporator, condenser, or any other component with a high potential for a leak is located inside an enclosed building or structure. ▪ Monthly leak inspection not required if refrigeration system has automatic leak detection system. ▪ Quarterly leak inspection required if refrigerant circuit is not located entirely within an enclosed building or structure and is not monitored for leaks using an automatic leak detection system.	(d)(2)(A) & (d)(2)(B)	Annual leak inspection	Would provide greater GHG control than Rule 1415

Table 1-1 (continued)
Differences between the Existing Rule 1415 and PR 1415.1

Rule Section	PR1415.1 Provisions	Rule Section	Rule 1415 Provisions	Comment
	Leak Detection and Monitoring			
(d)(2)(B)(1) continued	▪ By January 1, 2012, automatic leak detection system required if the refrigerant circuit is located entirely within an enclosed building or structure, or the compressor, evaporator, condenser, or any other component with a high potential for a leak is located inside an enclosed building or structure.			
(d)(2)(B)	For refrigeration systems with full charge > 200 lbs but < 2,000 lbs of refrigerant, and operates or is intended to be operated year round: ▪ After January 1, 2011, conduct quarterly leak inspections. Leak inspection not required if refrigeration system has automatic leak detection system.	(d)(2)(A) & (d)(2)(B)	Annual leak inspection	Would provide greater GHG control than Rule 1415
(d)(2)(B)	For refrigeration systems with full charge > 50 lbs, but less than 200 lbs of refrigerant, and is intended to be operated year round: ▪ After January 1, 2011, owner/operator must conduct annual leak inspection of refrigeration system. ▪ Leak inspection not required if refrigeration system has automatic leak detection system.	(d)(2)(A) & (d)(2)(B)	Annual leak inspection	Would provide greater GHG control than Rule 1415
(d)(2)(C)	Leak monitoring for refrigeration system not operated year-round, or is not intended to operate year-round ▪ Conduct leak inspection within 30 days after starting each operation of the refrigeration system, and once every three months thereafter until system is shut down.	(d)(2)(A) & (d)(2)(B)	Annual leak inspection	Would provide greater GHG control than Rule 1415

Table 1-1 (continued)
Differences between the Existing Rule 1415 and PR 1415.1

Rule Section	PR1415.1 Provisions	Rule Section	Rule 1415 Provisions	Comment
	Leak Detection and Monitoring			
(d)(2)(D)	Requirements when refrigerant is added to all systems with full charge >50 lbs ▪ After January 1, 2011, conduct leak inspection each time refrigerant charge equal to or greater than five pounds or one percent of refrigeration system full charge, whichever is greater, is added to the refrigeration system	(d)(2)(A) & (d)(2)(B)	Annual leak inspection	Would provide greater GHG control than Rule 1415
	Leak Repair Requirements			
(d)(3)(A)	Repair leaks no later than 14calendar days after leak has been discovered except where otherwise provided	(d)(3)	Repair leaks no later than 14calendar days after leak has been discovered or should have been discovered.	Would provide equivalent control compared to Rule 1415
(d)(3)(B)	45-day leak repair period allowed if: ▪ A certified technician is not available; or ▪ Repair parts are unavailable; or ▪ Refrigerant leak repair requires an industrial process shutdown	(d)(3)	Repair leaks no later than 14 calendar days after leak has been discovered or should have been discovered.	Would relax control compared to Rule 1415
(d)(3)(C)	120-day leak repair period allowed if: ▪ Facility subject to Mandatory GHG Emissions Reporting requirements; and ▪ Refrigeration system is an industrial process refrigeration appliance; and ▪ Refrigerant leak repair requires an industrial process shutdown; and ▪ Written records of required conditions for 120-day leak repair period are maintained	(d)(3)	Repair leaks no later than 14calendar days after leak has been discovered or should have been discovered.	Would relax control compared to Rule 1415
(d)(3)(E)	Prepare retrofit plan or retirement plan within 60 days or 135 days of initial leak detection if a leak is still occurring within allowable repair period of 45 days or 120 days, respectively		No provision in the rule	Would relax control compared to Rule 1415.

Table 1-1 (continued)
Differences between the Existing Rule 1415 and PR 1415.1

Rule Section	PR1415.1 Provisions	Rule Section	Rule 1415 Provisions	Comment
	Approval of Exemptions			
(d)(5)	Exemption Criteria The owner or operator of a facility with a refrigeration system may request for an exemption from leak repair and retrofit requirements for up to three years if Executive Officer determines: ▪ Life Cycle Exemption –leak cannot be repaired, and allowing leak would result in less direct and indirect emissions than replacing leaking system. ▪ Economic Hardship Exemption – compliance would cause extraordinary economic hardship; and applicant has prepared a compliance report. ▪ Natural Disaster Exemption – failure to repair leak was due to a natural disaster, act of war, act by a public enemy or civil disorder or riot.		No provision in the rule	Would relax control compared to Rule 1415
	Required Service Practices & Prohibitions			
(e)(1)(D)	Must not add refrigerant to appliance during manufacture or service unless refrigerant: ▪ Is a Class I or Class II substance per section 602 of federal CAA; or ▪ Is an alternative under SNAP program; or ▪ has been approved for use by Executive Officer		No provision in the rule	Would provide greater GHG control than Rule 1415
(e)(4)	No person shall distribute or sell certified refrigerant recovery or recycling equipment unless such equipment meets the levels of evacuation to be achieved by recovery or recycling equipment per Title 40 CFR Part 82, section 82.158		No provision in the rule	Would provide greater GHG control than Rule 1415
(e)(6)	No person shall recycle or dispose of a non-refillable cylinder before the non-refillable cylinder has been evacuated to a vacuum of 15 in Hg		No provision in the rule	Would provide greater GHG control than Rule 1415

Table 1-1 (concluded)
Differences between the Existing Rule 1415 and PR 1415.1

Rule Section	PR1415.1 Provisions	Rule Section	Rule 1415 Provisions	Comment
	Required Service Practices & Prohibitions			
(e)(7)	No person shall refill a non-refillable cylinder or use it as a temporary receiver during service		No provision in the rule	Would provide greater GHG control than Rule 1415
(e)(8)	No person shall refill or modify a non-refillable cylinder in any way that allows the non-refillable cylinder to be refilled.		No provision in the rule	Would provide greater GHG control than Rule 1415
	Reporting Requirements			
(f)(1), (f)(4) & (f)(5)	Facilities, refrigerant wholesalers/distributors, and refrigerant reclaimers have to submit Annual Report to CARB beginning year 2012.		No provision in the rule	No effect when compared to Rule 1415, but would provide enforcement tool.
	Recordkeeping Requirements			
(g)(1), (g)(2) & (g)(3)	The following records must be kept for a minimum of five years, kept at the facility of each owner of a refrigeration system, refrigerant distributor, wholesaler, or certified reclaimer, and be made available to EO representative upon request: o Annual Reports submitted o Invoices of all high-GWP refrigerant received and distributed through sale or transfer (name of purchaser, date of sale, qty and refrigerant type purchased, sold, or transferred.	(e)(9)	Records of leak inspection repairs, invoices of refrigerant sold, and refrigerant reclaimed must be kept for a minimum of three years.	No effect when compared to Rule 1415, but would provide enforcement tool.

LEAKS, LEAK DECTECTION AND MONITORING

Typical Types of Leaks

The CARB FSOR for the RMP states that refrigerant leaks may occur in a refrigerant/air conditioning appliance due to a weakened valve, rust in filter dryers or heat pump accumulator, tiny holes in capillary tubing due to friction, a damaged line set that carries refrigerant from the condenser to the evaporator coil, or a failure of the flare connection. The FSOR for the RMP states that other common areas for refrigerant leaks include leaking joints, seals, gaskets and cracked pipes, as well as areas subject to significant vibration. Refrigerant leaks may also be caused when the refrigerant circuit is breached releasing refrigerant to the atmosphere. Large

breaches are typically observed and quickly repaired. The refrigerant leaks can be indicated by an oil stain on or near the refrigerant/air conditioning equipment.

Leak Detection and Monitoring

The CARB FSOR for the RMP states that leak detection and monitoring is necessary to ensure detection of high-GWP refrigerant emissions and allow expedited refrigerant leak repair. The CARB FSOR for the RMP states that leak monitoring and inspection requirements are the primary means of achieving the emission reductions required by Health & Safety Code section 38562.

An automatic leak detection system is a device that continuously monitors the refrigeration system for refrigerant leaks, and alerts the operator when a refrigerant leak is detected. There are two types of automatic leak detection systems available. A direct system uses electronic sensors to detect the presence in air of leaked refrigerant. An indirect system interprets measurements (e.g. temperature or pressure) within the refrigeration system to indicate refrigerant leak. The automatic leak detection systems required by the CARB RMP are based on existing technology as described in American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 15-2001 Safety Standard for Refrigeration Systems. This industry standard requires that the detector must be continuously operated and provide real-time information. The detector itself is not specified, but rather the function of the detector is specified to allow the system designer to select the type of detector based on the application.

Other factors that must be included in the design of a refrigerant monitoring system include the vapor density of the specific refrigerant used and the airflow pattern of the facility in areas with potential refrigerant leaks. Due to the many factors involved, application-specific design for refrigeration systems and the necessary refrigerant leak detection systems is required.

A typical automatic leak detection system consists mainly of refrigerant leak detection sensor(s) and an electronic control system. The sensors are installed in the vicinity of refrigeration system components or parts such as compressor, evaporator, condenser, and other areas with a high potential for refrigerant leak. Sensors are calibrated to a desired detection level (ppm), and send a signal to the control panel when a certain refrigerant concentration is detected. The electronic control system provides indication of the measured parameters and alarm conditions, may also be equipped with relay contacts to shut down the refrigeration system as necessary.

The CARB FSOR for the RMP states that any facility operator who installs an automatic leak detection system with continuous monitoring that directly detects the presence of refrigerant in air, must place sensors or intakes such that the sensors would measure the refrigerant concentrations in air in proximity to principal components of the refrigeration system (e.g., compressor, evaporator, condenser). Automatic leak detection systems that directly detect the presence of refrigerant in air are required by the RMP to meet performance standards including the following: ability to accurately detect the presence of 10 ppm of refrigerant in the atmosphere, and generate an alarm signal when the level of refrigerant in the atmosphere exceeds 100 ppm. Automatic leak detection systems that use an indirect system (i.e. interpreting measurements that indicate a refrigerant leak) are required by the RMP to alert the operator when measurements indicate a loss of 10 percent of the refrigerant charge or 50 pounds, whichever is less.

An automatic leak detection system is typically installed by an electrician. No heavy equipment such as a forklift is required for the installation.

HIGH GLOBAL WARMING POTENTIAL REFRIGERANT EMISSIONS REDUCTIONS

CARB staff estimated high GWP refrigerant emission reductions in the FSOR for the RMP. Detailed calculations can be found in Appendix B – "California Facilities and Greenhouse Gas Emissions Inventory – High-GWP Stationary Source Refrigerant Management Program" of the FSOR for the RMP.

High GWP Refrigerant Baseline Emissions for the RMP

High GWP refrigerant baseline emissions for the RMP were developed by CARB staff from SCAQMD Rule 1415 biennial reports because the reports were the most comprehensive collection of data available specific to actual refrigerant usage and losses. Six years of SCAQMD Rule 1415 data were available with approximately 16,000 records. The primary source for the number of facilities and business type categories was the ARMINES Report – Inventory of Direct and Indirect GHG Emissions from Stationary Air Condition and Refrigeration Sources, with Special Emphasis on Retail Food Refrigeration and Unitary Air Conditioning, Final Report, March 2009 (2009 ARMINES Report). Baseline and no project emission estimates were developed by CARB staff. Baseline emissions represent the existing setting in 2010 before implementing the RMP regulation. No project emissions represent the conditions without implementing the RMP regulation in 2020 with one percent population growth per year.

Because the baseline emissions for the RMP were developed from SCAQMD Rule 1415 data, the baseline emissions were developed as though the entire state was compliant with SCAQMD Rule 1415.[3] Therefore, the baseline for the RMP is equivalent to the existing SCAQMD Rule 1415 refrigerant emission for 2010, which is also the baseline for this proposed project (i.e., PAR 1415/PR 1415.1).

High GWP Refrigerant Emissions Reductions from RMP

The CARB FSOR for the RMP states that a primary assumption used to estimate emission reductions is that the RMP would not necessarily reduce the actual number, or percent of leaking refrigerant/air conditioning systems during a given year. Rather, the RMP defines inspection and maintenance best management practices and use of these practices would cause leaks to be detected and repaired more quickly and completely, thus reducing overall refrigerant emissions. In order to calculate emission reductions from baseline to post-rule implementation, the reduction in annual leak rate and emissions were estimated. CARB staff used the United Nations Environment Programme (UNEP) 2006 Report of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee; and the Intergovernmental Panel on Climate Change [IPCC] and Technology and Economic Assessment Panel [TEAP] Special Report on Safeguarding the Ozone Layer and the Global Climate Systems, 2005 to estimate lower achievable leak rates. U.S. EPA Vintaging Model technical sheets on specific refrigeration and air conditioning equipment types normal leak rates were also used as supplementary references. CARB staff stated that the UNEP and IPCC TEAP reports indicated that using best management

[3] This is a reasonable assumption because even in the absence of an adopted rule, facilities were required to comply with the federal refrigerant control requirements.

practices on old or new refrigeration equipment can reduce the average annual leak rates to 10 percent or less for large equipment and five percent or less for small equipment.

Since, the High GWP refrigerant emissions reductions were developed based on the difference between the existing Rule 1415 leak rates and targeted lower achievable average leak rates with best management practices, the emission reductions are equivalent to the difference between the existing Rule 1415 and the CARB RMP, which is also equivalent to the emissions reductions for this proposed project (i.e., PAR 1415/PR 1415.1). These emission reductions are shown in Table 1-2.

Table 1-2
CARB RMP Refrigeration Equipment Leak Rates, Baseline Compared to Proposed Project

Refrigeration/Air Conditioning Equipment Type and Charge Category	Rule 1415 Data – Average Annual Leak Rate	Lower Achievable Avg. Annual Leak Rate with Best Management Practices	Reduction of Leak Emissions (Relative %)
Refrigeration Systems			
centralized system (large)	21%	10%	53%
centralized system (medium)	15%	10%	33%
cold storage (large)	27%	10%	64%
cold storage (medium)	36%	10%	72%
process cooling (large)	7%	7%	0%
refrigerant condensing units (small)	14%	5%	65%
Sub-total refrigeration systems, (weighted average)	**19%**	**9%**	**51%**
AC Systems			
centrifugal chiller (large)	2%	2%	0%
centrifugal chiller (medium)	1%	1%	0%
packaged chiller (medium)	7%	3.5%	50%
unitary AC (small)	11%	5%	56%
Sub-total AC systems, (weighted average)	**5%**	**3%**	**40%**
Totals (weighted average)	**16%**	**8%**	**50%**

Source: CARB, FSOR, Appendix B, Table 8

The CARB FSOR for the RMP estimated CO2 equivalent (CO2E) emission reductions between 2020 without implementing the RMP regulation (i.e., the no project condition in 2020) and 2020 post RMP regulation. The emission reductions estimated in the CARB FSOR for the RMP are presented in Table 1-3.

High GWP Refrigerant Emissions Reductions from PR 1415.1

The high GWP refrigerant emission reductions from PR 1415.1 were estimated by multiplying the GHG emission reductions expected by the CARB RMP by the percentage of the state population within the SCAQMD's jurisdiction (Table 3-1). Approximately 43 percent of the

state's population is within the SCAQMD's jurisdiction. Therefore, the high GWP refrigerant emission reductions from PR 1415.1 would be 3.5 million metric tons CO2E (8.1 million metric tons CO2E x 0.43). Since no new leak detection or monitoring would be required for air conditioning systems, there would be no emission reductions from PAR 1415.

Table 1-3
CARB RMP and Proposed Project GHG Emissions Reductions from PR 1415.1

Statewide Commercial Refrigeration Systems with Full Charge Greater Than or Equal to 50 Pounds[1]					
Emissions in Million Metric Tons CO_2 Equivalent ($MMTCO_2E$)					
Equipment Size, lb charged	**2010 Number of Facilities**	**2010 Baseline Emissions**	**2020 Project Emissions without Rule (No Project)**	**Projected 2020 CARB GHG Emission Reductions**	**Project 2020 District GHG Emission Reductions**
Small Commercial (50 to <200)	15,500	1.2	1.4	0.9	0.4
Medium Commercial (200 to <2000)	8,500	5.7	7.9	3.3	1.4
Large Commercial (>2,000)	2,000	5.0	6.5	3.9	1.7
Total	26,000	11.9	15.8	8.1	3.5

1 Appendix B of CARB's FSOR for Proposed Regulation for the Management of High GWP Refrigerants for Stationary Sources, dated October 23, 2009

2 The CARB FSOR for the RMP estimated emissions between 2020 BAU and 2020 Post RMP regulations. CEQA requires that incremental emissions or emission reductions from the project be estimated between existing baseline and the completed proposed project. So CEQA emission reductions from RMP were estimated by subtracting the 2020 Post RMP Emissions from the 2010 baseline emissions.

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule 1415 – Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems and Proposed Rule 1415.1 – Reduction of Refrigerant Emissions from Stationary Refrigeration Systems
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	James Koizumi, (909) 396-3234
PAR 1415/PR 1415.1 Contact Person:	Rizaldy Calungcagin, (909) 396-2315
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PAR 1415 consists of expanding the scope of the rule to include high global warming potential (GWP) refrigerants; and deleting all provisions related to refrigeration systems; and making other minor clarifications. Refrigeration provisions deleted from Rule 1415 would be incorporated into PR 1415.1. PR 1415.1 would also incorporate provisions of the Refrigerant Management Program, a statewide regulation developed by California Air Resources Board to reduce emissions of GWP refrigerants from stationary refrigeration systems.
Surrounding Land Uses and Setting:	Commercial and industrial facilities
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐	Aesthetics	☐	Geology and Soils	☐	Population and Housing
☐	Agriculture and Forestry Resources	☑	Hazards and Hazardous Materials	☐	Public Services
☑	Air Quality and Greenhouse Gas Emissions	☐	Hydrology and Water Quality	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☐	Solid/Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☐	Transportation/Traffic
☐	Energy	☐	Noise	☑	Mandatory Findings

DETERMINATION

On the basis of this initial evaluation:

☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1)has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: October 29, 2010 Signature: Steve Smith

Steve Smith, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As noted in Chapter 1, SCAQMD Rule 1415 currently regulates ODS emissions from air condition and refrigeration systems. In response to CARB's RMP, SCAQMD staff is proposing to expand the scope of Rule 1415 to include control of high GWP pollutants. Further, the proposed project consists of deleting all provisions related to control of emissions from refrigeration systems from Rule 1415 and incorporating them into PR 1415. In addition, PR 1415.1 would include all provisions from CARB's RMP, which would modify some of the existing provisions from Rule 1415 and add new provisions.

Also as indicated in Chapter 1, CARB prepared an environmental analysis of the RMP pursuant to its certified regulatory program. This analysis of PAR 1415 and PR 1415.1 relies on the environmental analysis prepared by CARB to avoid repetitive analyses of the same environmental issues (CEQA Guidelines §15152).

Analysis of the proposed project indicated that only air quality and hazardous and hazardous materials would be potentially adversely affected. Potential air quality and hazardous and hazardous materials impacts could occur as a result of adding one new provision to PR 1415.1 and modifying two existing provisions.

The new provision (PR 1415.1(d)(2)(B)) would require monthly leak inspections for refrigeration systems with a full charge greater than or equal to 2,000 pounds and quarterly inspections of refrigeration systems with a full charge greater than or equal to 200 pounds but less than 2,000 pounds. The high GWP refrigerant emission reductions from PR 1415.1 would be 3.5 million metric tons CO2E (see high GWP refrigerant emission reductions in Chapter 1 of this Draft EA).

Although RMP provisions would enhance leak detection provisions, they also have the potential of creating secondary air quality impacts from inspection vehicle emissions. This provision is in CARB's RMP, which SCAQMD is required to incorporate or adopt a more stringent requirement, and has already undergone an environmental analysis approved by CARB. Therefore, this provision will not be further analyzed in this Draft EA.

The following two modifications of existing Rule 1415 provisions are proposed to provide consistency with CARB's regulations in PAR 1415.1. The first modification would extend the time period during which a leak must be repaired from 14 days to 45 (Rule 1415.1(d)(3)(B)) or 120 days (Rule 1415.1(d)(3)(C)). The modifications also include three new exemptions: emissions life cycle, economic hardship and natural disaster. The emissions life cycle exemption would allow the continuation of a refrigerant leak for up to three years if the Executive Officer determines that the application has provided clear and convincing documentation that the refrigerant leak cannot be repaired, and that allowing the refrigerant leak to continue would result in less combined direct or indirect emissions than replacing the leaking refrigeration system. The economic hardship exemption would allow the continuation of a refrigerant leak for a specified time period of no longer than three years if the Executive Officer determines that the applicant has provided clear and convincing documentation that compliance would result in extraordinary economic hardship, and the applicant has prepared a compliance report that can be implemented and can achieve compliance as expeditiously as possible. The natural disaster exemption would allow the continuation of a refrigerant leak for a specified time period of no longer than three years if the Executive Officer determines that the application has provided clear

and convincing documentation that failure to repair the refrigerant leak was due to a natural disaster.

The emissions life cycle exemption would not generate any adverse GWP impacts because the same emissions would be generated whether the refrigeration system is replaced or not replaced. The economic hardship and natural disaster provisions are considered to be a relaxation of existing requirements and will be further analyzed in this Draft EA.

No change would be made to the leak detection and monitoring provisions for air condition systems in PAR 1415. A provision would be added to PAR 1415 to allow air conditioning leak repair periods of up to 45 days. The 45 days extension to fix a refrigerant leak would apply only in situations where a certified technician is not available, or the parts needed to complete the repair are unavailable within 14 days of initial leak detection.

All other provisions in PAR 1415 and PR 1415.1 are considered to be part of the existing setting, i.e. are already in affect pursuant to the existing Rule 1415 or have been analyzed in CARB's environmental analysis contained in the FSOR for CARB's RMP regulation.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

I.a), b), c) & d) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Existing and new air conditioning and refrigeration systems are currently subject to the requirements of the existing Rule 1415. The proposed project would extend the time to make leak repairs and require additional leak inspection, leak detection and monitoring and reporting requirements.

Manual leak inspection methods consistent with industry practices, e.g. refrigerant leak detection device, bubble test, observation of oil residue, are currently used to comply with Rule 1415. Off-site of the affected facilities, the manual leak inspection is not expected to appear different than any other inspection of refrigeration equipment. PR 1415.1 would require more frequent inspections. Additional monthly (for large-sized refrigeration systems) or quarterly (for medium-sized refrigeration systems) are not expected to result in aesthetic impacts.

Automated leak detection and monitoring systems would be installed around refrigeration systems in existing structures within the boundaries of affected large facilities; therefore, would not be visible to persons outside of the enclosures (i.e., off-site). Refrigeration systems that are not enclosed are not required to install automated leak detection and monitoring systems.

Leak repair activities are relatively minor consisting of soldering copper tubes; tightening of existing connections; and replacing components such as refrigerant lines, gaskets, solenoid valves and expansion valves. CARB staff did not expect that the RMP would reduce the number or percentage of leaking refrigeration/air conditioning systems, but inspection and maintenance best management practices would cause leaks to be detected and repaired more quickly and completely. Therefore, PR 1415.1 would result in the same repairs made earlier, which would not change the aesthetics of the repair.

PAR 1415/PR 1415.1 would increase the time period over which repairs are made. PAR 1415/PR 1415.1 is not expected to lengthen the amount of work required to make repairs, but to allow more time between when leak is found and when repairs are made. The additional time would be granted because a certified technician is not available, parts are unavailable, or to schedule time for an industrial process to be shutdown. Repairs may also be delayed because the life-cycle, economic hardship or natural disaster exemptions. However, since the same repairs would be made only at a later date no adverse impacts are expected from allowing more time before a leak is repaired.

Implementation of PAR 1415/PR 1415.1 would not result in any new construction of buildings or other structures that would obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Further, repair, leak inspection, leak detection and monitoring and reporting requirements would not appreciably change the visual profile of the building(s) where refrigerants are used. Similarly, additional light or glare would not be created which would adversely affect day or nighttime views in the area since no light generating equipment would be required to comply with PAR 1415/PR 1415.1.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FOREST RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).

- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

II.a), b), c) & d) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect agricultural resources since leak detection and repair activities already occur on site at affected facilities. Automated leak detection and monitoring systems would be installed around refrigeration systems in existing structures within the boundaries of affected large facilities. Refrigeration systems that are not enclosed are not required to install automated leak detection and monitoring systems. The installation of the automatic leak detection and monitoring systems is not expected to require the use of heavy construction equipment. The equipment is light enough that forklifts are not expected to be needed and would be placed on existing paved surfaces. Therefore, the proposed project would not result in any heavy construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Additional leak inspection, leak detection and monitoring, and reporting requirements would not require converting farmland to non-agricultural uses because these activities are expected to occur completely within the confines of affected industrial facilities, commercial facilities or institutions' boundaries. For the same reasons, PAR 1415/PR 1415.1 would not result in the loss of forest land or conversion of forest land to non-forest use.

Based upon these considerations, significant agricultural resource impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant agriculture resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☑
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Discussion

III.a) The purpose of the 2007 Air Quality Management Plan (AQMP) is to demonstrate compliance with all state and national ambient air quality standards (AAQSs). To demonstrate compliance with all state and national AAQSs, the AQMP contains control measures to reduce criteria pollutant emissions and volatile organic compound (VOC) emissions (an ozone precursor).

Existing Rule 1415, PAR 1415 and PR 1415.1 do not regulate criteria pollutants or VOC emissions. Although the proposed project has the potential to generate some secondary criteria pollutant and VOC air quality impacts as a result of minor construction activities, these emissions are not expected to exceed any applicable criteria pollutant or VOC significance thresholds as explained in the following responses. Therefore, the proposed project is not expected to conflict with or obstruct implementation of the applicable air quality plan.

III.b) For a discussion of these items, refer to the following analysis:

Air Quality Significance Criteria
To determine whether or not air quality impacts from adopting and implementing PAR 1415/PR 1415.1 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. The project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

Construction Impacts
PAR 1415 and PR 1415.1 are not expected to require any heavy-duty construction activities or equipment. Automatic leak detection systems would be required for large enclosed refrigeration systems. Refrigeration system components that are not enclosed would not require automatic leak detection systems. Automatic leak detection systems are typically installed by an electrician. No heavy equipment such as a forklift is required for the installation. Therefore, PAR 1415/PR 1415.1 is expected to have minor construction impacts. Therefore, PAR 1415/PR 1415.1 is not significant for construction impacts to air quality.

Operational Impacts

Leak Detection High GWP Refrigerant Emission Reductions
The existing Rule 1415 requires that all refrigerant and air conditions systems be inspected annually for leaks. The new provision (PR 1415.1(d)(2)(B)) would require monthly leak inspections refrigeration systems with a full charge greater than or equal to 2,000 pounds and quarterly inspections of refrigeration systems with a full charge greater than or equal to 200 pounds but less than 2,000 pounds. Annual inspections would still be required for refrigeration systems greater than 50 pounds and less than 2,000 pounds. The high GWP refrigerant emission reductions from PR 1415.1 would be 3.5 million metric tons CO2E (see Table 1-3).

Leak Repair Time High GWP Refrigerant Emissions Foregone
The proposed project would include extending the time period during which a leak must be repaired from 14 days to 45 (Rule 1415.1(d)(3)(B)) or 120 days (Rule 1415.1(d)(3)(C)) depending on circumstance. Based on discussions with industry, SCAQMD staff estimates that two percent of centralized systems, cold storage and condensing units may require a 45-day extension for repairs; and 25 percent of process cooling systems may require a 120-day extension for repairs. Since the existing Rule 1415 repair time is shorter (14 days) than the repair time allowed in CARB's regulation (45 days, 120 days, or three years), extending the repair time from the existing rule to PAR 1415/PR 1415.1 would result in GHG emissions foregone. SCAQMD staff estimates that approximately 5,849 metric tons per year of CO2E emissions foregone would be generated by PR 1415.1 and 497 metric tons per year of CO2E emissions foregone would result from PAR 1415. Detailed calculations are included in Appendix B.

High GWP Refrigerant Emissions Foregone from Exemptions
PR 1415.1 would also include three new exemptions: emissions life cycle, economic hardship and natural disaster. CARB staff estimates that in a worst-case scenario, these exemptions could be used by one out of every 200 to 400 of 28,720 affected in the state (12,350 affected facilities in SCAQMD). Based on one out of every 200 affected facilities using one of the three exemptions, approximately 4,618 metric tons per year of CO2E emissions foregone would result from PR 1415.1. Detailed calculations are included in Appendix B.

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 metric tons per year for industrial facilities	
Ambient Air Quality for Criteria Pollutants [d]		
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state – peak hour); 0.10 ppm (federal – 98th percentile) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	 10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3	
PM2.5 24-hour average	 10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
Sulfate 24-hour average	 25 μg/m^3	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ greater than or equal to

Table 2-2 summarizes cost information provided in Appendix C of the CARB FSOR. The cost of replacing refrigerant is greater than the annual repair cost for each refrigeration size category. Therefore, there is also a cost incentive for facilities to repair leaks rather than apply for one of the three exemptions.

The emissions life cycle, economic hardship and natural disaster exemptions are not proposed in PAR 1415.

Table 2-2
Annual Repair and Refrigerant Replacement Costs

Refrigeration System Size	Annual Repair Cost (Parts, Labor, Refrigerant Recovery)	Average Refrigerant Charge (lbs)	Average Annual Leak (lbs)	Cost of Replacing Refrigerant at $11/lb	Total Annual Cost (Repair plus Refrigerant Replacement)
Small	$900	122	18 (14%)	$198	$1,098
Medium	$1,550	689	119 (17%)	$1,309	$2,859
Large	$2,450	4,663	1,090 (23%)	$11,990	$14,440

Total High GWP Refrigerant Emission Reductions

The proposed project would result in a total high GWP refrigerant emission reduction of 3.5 million metric tons per year of CO2E. The total reduction of high GWP refrigerant emissions was estimated by subtracting the high GWP refrigerant emissions foregone from the 45- and 120-day exemptions from the high GWP refrigerant emission reduction from leak detection and monitoring. The total high GWP refrigerant emission reductions are summarized in Table 2-3 and detailed in Appendix B.

III.c) Existing Rule 1415 regulates refrigerants that are ODSs. Compliance with ODS requirements has already been achieved. The proposed project would expand the applicable control requirements to include high GWP refrigerants. Criteria pollutant and VOC emissions are not associated with affected equipment. As a result, new or modified provisions in PAR 1415 and PR 1415.1 would not generate any new criteria pollutant or VOC emissions, with the exception of the emissions from inspector vehicle trips as a result of the requirement for more frequent inspections. As already noted, increased inspections were included in CARB's RMP for which an environmental analysis was prepared and included in CARB's FSOR for the RMP. Since this Draft EA tiers off of the environmental analysis prepared by CARB, no further analysis of emissions from inspection vehicle trips is required. Therefore, overall the proposed project is not expected to generate significant adverse cumulative criteria pollutant or VOC air quality impacts during operations.

Similarly, since the proposed project is expected to generate a net GHG emissions reduction, cumulative impacts from GHG are also not significant.

Table 2-3
Total High GWP Refrigerant Emission Reductions

Refrigeration or Air Conditioning System Type	High GWP Refrigerant Emission Reductions from Leak Detection, Million Metric Ton CO2E/yr	ODS Foregone from 45- and 120-Day Repair Period , Metric Ton CO2E/yr	ODS Foregone from Three-Year Extension, Metric Ton CO2E/yr	Total High GWP Refrigerant Emission Reductions, Million Metric Ton CO2E/yr
Refrigeration Systems				
Small	0.4	109	310	0.4
Medium	1.4	735	2,080	1.4
Large	1.7	5,004	2,228	1.7
Refrigeration Total		5,849	4,618	3.5
Air Conditioning Systems				
Small	-	171	-	-0.0002
Medium	-	97	-	-0.0001
Large	-	229	-	-0.0002
Air Conditioning Total		497		-0.0005
Proposed Project Total	**3.5**	**6,346**	**4,618**	**3.5**

III.d) PAR 1415/PR 1415.1 is not expected to expose sensitive receptors to substantial pollutant concentrations. Increased vehicle trips to monitor for leaks may be required. A portion of the trips would generate diesel exhaust particulates, which have carcinogenic and chronic noncarcinogenic affects, but these requirements are a part of CARB's Refrigerant Management Program, which is required for adoption/implementation. The FSOR for CARB's Refrigerant Management Program stated that all impacts were less than significant.

The proposed project would result in an overall reduction of refrigerant emissions; therefore, it would result in an overall reduction in any toxic impacts from these refrigerants. The reductions would be seen primarily from large and medium refrigeration systems because of increased frequency of leak detection and monitoring (monthly for large systems and quarterly for medium, which is an increase from the current annual schedule for all size systems in the existing Rule 1415). The leak detection and monitoring frequency would not increase for small systems, which would remain on the annual schedule currently required by the existing Rule 1415.

For small systems, the extended repair time from 14 days to 45 days, 120 days or three years may result in greater refrigerant emissions/concentrations. To qualify for the 120-day repair period a facility must be subject to Mandatory Greenhouse Gas Emissions Reporting under section 95101 of the Health and Safety code. Such facilities include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 MTCO2E per year

from stationary source combustion. Therefore, small systems are not likely to qualify for the 120-day exemption.

Impacts to sensitive receptors are evaluated from near-by affected facilities. Therefore, emission reductions foregone from the proposed project in Table 2-3 are presented by facility in Tables 2-4 and 2-5. Based on the average leak rate, the number of systems, and average repair time of 31 days (45 days – 14 days), approximately 10 pounds per year or 0.3 pound per day of refrigerant could be emitted at a single facility because of repair time extensions in the proposed rule. These emissions are summarized in Table 2-4 and detailed calculations are included in Appendix B.

Table 2-4
Incremental Increase in Refrigerant Emissions from
45-day Repair Time Extension at Small Facilities

Equipment Category	2020 No. of Systems	Total ODS Emissions Foregone due to 45-day Repair ($MTCO_2E$/year)	ODS Emissions Foregone due to 45-day Repair per System (lb CO_2E/year)	ODS Emissions Foregone due to 45-day Repair per System (lb CO2E/day)
Refrigerant Condensing Units	36,814	109	6.6	0.2
Unitary Air Conditioners	37,631	171	10.0	0.3

Note: the emissions present would be the incremental increase over the current 14-day leak repair period allowed in the current rule. This would be an increase of 31 days (45-days -14-days).

Based on conversations with CARB staff, a three-year extension may apply to one of 200 facilities. Using the average leak rate, the number of systems, and average repair time of 351 days per year (365 days – 14 days), approximately 1,056,657 pounds (528 tons) per year or 3,010 (1.5 tons) pound per day of refrigerant could be emitted at a single facility (large cold storage facility) because of three-year repair time extensions in the proposed rule. These emissions are summarized in Table 2-5 and detailed calculations are included in Appendix B.

EPA has an excerpt from a refrigerant safety article originally printed in the ASHRAE Journal, July 1994, pp 17-16) on the EPA webpage http://www.epa.gov/ozone/snap/refrigerants/safety.html. All refrigerants regulated by the proposed project have an ASHRAE Standard 34 rating of A1 or B1. ASHRAE Standard 34 ratings comprise a letter rating for toxicity and a numeric rating for flammability. A rating of "A" means that no toxicity is suspected at concentrations below 400 ppm. A rating of "B" means that evidence of toxicity below 400 ppm is suspected. All refrigerants in the CARB inventory were given an "A" rating except for R-123, which was given a "B" rating. The ASHRAE article states that "test of R-123 indicate that it has a very low acute inhalation toxicity," "based on the finding of extensive testing, R-123 has been deemed to have low toxicity," and in regards to time weighted averages "occupational exposures can be held well below even the most stringent of these recommendations." The EPA excerpt of the ASHRAE article includes figures that show that concentrations from leaks in machinery rooms and from internal service were measured to be below 30 ppm, which is the recommended time weighted average (TWA). The ASHRAE table of toxic and flammability parameters is included in Appendix B of this document. The table has been expanded to include toxic and

flammability parameters from R-404A, R-410A and R-407C, which were included in CARB's FSOR for the RMP. Concentrations from refrigerants off-site are expected to be less than that on-site because of dispersion. Therefore, off-site exposures are expected to below TWA values also.

There are no health risk values available from EPA, CARB or OEHHA for refrigerants. Since no health risk values are available from EPA, CARB or OEHHA, and based on the analysis in the ASHRAE article posted on the EPA website, SCAQMD staff does not expect significant health risk impacts from the proposed project.

Table 2-5
Incremental Increase in Refrigerant Emissions from Three-Year Repair Time Extension at Affected Facilities

Equipment Category and Size	No. of Systems	ODS Emissions Foregone due to Three-Year Repair ($MTCO_2E/yr$)	ODS Emissions Foregone due to Three-Year Repair per Facility ($MTCO_2E/yr$)	ODS Emissions Foregone due to Three-Year Repair per Facility (lb CO_2E/yr)	ODS Emissions Foregone due to Three-Year Repair per Facility (lb CO_2E/day)
Centralized System - Large	855	294	76	167,310	477
Centralized System - Medium	17,812	1,733	21	47,380	135
Cold Storage - Large	760	1,649	479	1,056,657	3,010
Cold Storage - Medium	2,137	347	36	79,116	225
Process Cooling - Large	323	286	196	431,232	1,229
Refrigeration: Condensing. Units - Small	36,814	310	2	4,098	12

III.e) Odor problems depend on individual circumstances. For example, individuals can differ quite markedly from the population average in their sensitivity to odor due to any variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation).

Increased vehicle trips to monitor for leaks are required. These trips would generate exhaust, which could generate additional odor impacts. However, the addition of one vehicle trips per quarter for medium-sized refrigeration systems or one vehicle trip per month for large-sized refrigeration systems is not expected to generate significant odor impacts from diesel exhaust.

Odor thresholds for R-12, R-22 and R-502 are listed as between 4,800 and 4,900 ppm.[4] Based on the ASHRAE document sited above (see III.d)), the GHG concentrations from leaks and repair should be below 30 ppm. Therefore, no odor impacts are expected from the proposed project.

II.f) PAR 1415/PR 1415.1 would have no affect on criteria pollutant or VOC emissions. It may result in GHG emissions foregone. However, because the GHG emissions foregone are less than the expected GHG emissions reductions (see III. g) & h)),[5] it is not expected to diminish an existing air quality rule or a future compliance requirement resulting in a significant increase in an air pollutant.

III. g) & h) Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of GHG emissions in the atmosphere. The six major types of GHG emissions identified in the Kyoto Protocol and in CARB's RMP regulation are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). The GHG emissions absorb longwave radiant energy emitted by the earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect."

The current scientific consensus is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHG emissions in the atmosphere due to human activities. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., combustion of gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHG emissions. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHG emissions (CEC, 2004). Further, approximately 80 percent of GHG emissions in California are from fossil fuel combustion (e.g., gasoline, diesel, coal, etc.).

As stated above, the proposed project would result in a reduction of high GWP refrigerant emissions of 3.5 million metric tons of CO2E per year. Therefore, PAR 1415/PR 1415.1 is not expected to be significant for adverse GHG impacts or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Conclusion

Based on the preceding evaluation of air quality impacts from PAR 1415/PR 1415.1, SCAQMD staff has concluded that proposed project would not generate significant adverse impacts to air quality or GHG impacts. Therefore, these topics will not be further evaluated in this Draft EA and mitigation measures are not required.

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[4] http://hcrefrigerant.com/msds.htm.

[5] On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The board letter, resolution, interim GHG significance threshold, draft guidance document and attachments can be found under the Board Agenda Item 31 (http://www.aqmd.gov/hb/2008/December/081231a.htm) on the December 5, 2008, Governing Board meeting agenda.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f)	Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV.a), b), c), & d) The proposed project would expand the scope of Rule 1415 to include emissions and anticipated emission reductions from high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect biological resources since repair activities occur on site at affected facilities. Automated leak detection and monitoring systems would be installed around refrigeration systems in existing structures within the boundaries of affected large facilities. Refrigeration systems that are not enclosed are not required to install automated leak detection and monitoring systems. The installation of the automatic leak detection and monitoring systems is not expected to require the use of heavy construction equipment. The equipment is light enough that forklifts are not expected to be needed and would be placed on existing paved surfaces. Since, no major construction-related activities would be associated with the implementation of PAR 1415/PR 1415.1, no construction impacts are expected. Operations relating to PAR 1415/PR 1415.1 would occur within the boundaries of existing facilities. As a result, implementing PAR 1415/PR 1415.1 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Similarly, since implementing PAR 1415/PR 1415.1 would not require construction of any structures, special status plants, animals, or natural communities are not expected to be adversely affected.

IV.e) & f) It is not envisioned that PAR 1415/PR 1415.1would conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because the proposed project does not require construction of any structures or new development in undeveloped areas. Additionally, PAR 1415/PR 1415.1 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that PAR 1415/PR 1415.1 would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this Draft EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

V.a), b), c), & d) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect cultural resources since repair activities occur on site at affected facilities. Automated leak detection and monitoring systems would be installed around refrigeration systems in existing structures within the boundaries of affected large facilities. Refrigeration systems that are not enclosed are not required to install automated leak detection and monitoring systems. The installation of the automatic leak detection and monitoring systems is not expected to require the use of heavy construction equipment. The equipment is light enough that forklifts are not expected to be needed and would

be placed on existing paved surfaces. Since no major construction-related activities would be associated with the implementation of PAR 1415/PR 1415.1, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project. Further, PAR 1415/PR 1415.1 is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources or disturb human remains interred outside of formal cemeteries.

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1415/PR 1415.1 and will not be further assessed in this Draft EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:				
a)	Conflict with adopted energy conservation plans?	☐	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☐	☑
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☐	☑
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☐	☑
e)	Comply with existing energy standards?	☐	☐	☐	☑

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

VI.a) & e) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR

1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect energy use. The same energy use would be required to correct leaks, but over a potentially longer time period. Automated leak detection systems would be installed around refrigeration systems within the boundaries of affected large facilities. The installation of the automatic monitoring systems is not expected to require the use of heavy construction equipment. The equipment is light enough that forklifts are not expected to be used. Since no major construction-related activities would be associated with the implementation of PAR 1415/PR 1415.1, there would be no construction energy impacts from PAR 1415/PR 1415.1.

Additional leak inspecting, leak detecting and monitoring, and reporting requirements is expected to create little or no additional demand for energy since these operations would be carried out using handheld or automatic detectors or monitors which are expected to use minimal energy use. The requirement for automatic leak detection system for refrigeration systems is included in the RMP adopted by CARB. Since CARB's regulation has already undergone an environmental analysis, no further review is required. Other than leak detection and monitoring equipment no environmental impacts were identified by CARB, PAR 1415/PR 1415.1 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PAR 1415/PR 1415.1 would not require the installation of air pollution control equipment or the construction of other structures, the proposed project would not conflict with adopted energy conservation plans. Additionally, facility operators who operate refrigeration or air conditioning equipment are expected to comply with any relevant existing energy conservation plans and standards to minimize operating costs.

VI.b), c), & d) Leak detecting and monitoring equipment would use minimal amounts of energy and because leak detection and monitoring was part of the project that has already undergone an environmental analysis by CARB, PAR 1415/PR 1415.1 is not expected to create any significant adverse effects on peak and base period demands for electricity, natural gas, or other forms of energy, or adversely affect energy producers or energy distribution infrastructure.

Based on the preceding discussion, PAR 1415/PR 1415.1 would not create any significant effects on peak and base period demands for electricity and other forms of energy and it is expected to comply with existing energy standards. Therefore, PAR 1415/PR 1415.1 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this Draft EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII.	**GEOLOGY AND SOILS.** Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
c)	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.

- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

VII.a) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect geology and soils since these activities occur on site at affected facilities, which are expected to be paved. Automated leak detection systems would be installed around refrigeration systems enclosed in structures within the boundaries of affected large facilities. The installation of the automatic monitoring systems is not expected to require the use of heavy construction equipment. Other than leak detection and monitoring equipment, there are no provisions in PAR 1415/PR 1415.1 that would require the construction of new or modified structures or the construction of air pollution control equipment that would call for the disruption or overcovering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. For these reasons, PAR 1415/PR 1415.1 would not expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards.

VII.b) Other than leak detection and monitoring equipment, PAR 1415/PR 1415.1 does not require the installation of air pollution control equipment or the construction of other structures. Since PAR 1415/PR 1415.1 would not involve major construction activities, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated from the implementation of the proposed project.

VII.c) Other than leak detection and monitoring equipment, since no major construction activities would be necessary, no excavation, grading, or filling activities will be required to comply with the proposed project. Further, all compliance activities, i.e., installation of leak detection and monitoring equipment would occur in existing structures at affected industrial or commercial facilities. Further, the proposed project would not require the drilling or removal of underground products (e.g., water, crude oil, etc.) that could produce subsidence effects. For these reasons, subsidence impacts are not anticipated. Since no groundwork or earth moving activities would be required as part of implementing PAR 1415/PR 1415.1, no new landslides effects or changes to unique geologic features would occur.

VII.d) & e) Other than leak detection and monitoring equipment, PAR 1415/PR 1415.1 would not require the installation of control equipment or the construction of any structures that would involve earth-moving activities. Further, all compliance activities, i.e., installation of leak

detection and monitoring equipment would occur in existing structures at affected industrial or commercial facilities. Therefore, no persons or property would be exposed to new impacts from expansive soils or soils incapable of supporting water disposal. Further, PAR 1415/PR 1415.1 does not involve installation of septic tanks or other alternative waste water disposal systems.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further analyzed in this Draft EA. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☐	☑

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

VIII.a), b) & c) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

Automated leak detection systems would be installed around refrigeration systems within the boundaries of affected large facilities. The installation of the automatic monitoring systems is not expected to require the use of heavy construction equipment. Since no major construction-related activities would be associated with the implementation of PAR 1415/PR 1415.1, there would be no significant construction hazardous/hazardous material impacts from PAR 1415/PR 1415.1.

The proposed project is expected to reduce of high GWP refrigerant emissions from large and medium systems since the refrigerant emission reductions from leak detection and monitoring are greater than the emissions foregone from extending leak repair time. As analyzed in Air

Quality III.d), small facilities may generate additional refrigerant emissions because of the 45-day repair time extension. Any facility qualifying for one of the three-year exemptions may also generate additional refrigerant emissions. However, since refrigerants do not have health values established by EPA, CARB or OEHHA, the refrigerant emissions are not considered hazardous emissions.

EPA has an excerpt from a refrigerant safety article originally printed in the ASHRAE Journal, July 1994, pp 17-16) on their webpage http://www.epa.gov/ozone/snap/refrigerants/safety.html. All refrigerants regulated by the proposed project have an ASHRAE Standard 34 rating of A1 or B1. ASHRAE Standard 34 ratings comprise a letter rating for toxicity and a numeric rating for flammability. A rating of "A" means that no identified toxicity is suspected at concentrations below 400 ppm. A rating of "B" means that evidence of toxicity below 400 ppm is suspected. A rating of "one" means that no lower flammable limit (LFL) is expected based on a modified ASTM E681-85 test. A rating of "two" means that the LFL is less than 0.10 kilograms per cubic meter and heat of combustion is less than 19,000 kilojoules per kilogram. Since all refrigerants regulated by the proposed project were given a "one" rating, the proposed project is not expected to generate any hazards from flammability. All refrigerants in the CARB inventory were given an "A" rating except for R-123, which was given a "B" rating. The ASHRAE article states that "test of R-123 indicate that it has a very low acute inhalation toxicity," "based on the finding of extensive testing, R-123 has been deemed to have low toxicity," and in regards to time weighted averages "occupational exposures can be held well below even the most stringent of these recommendations." The EPA excerpt of the ASHRAE article includes figures that show that concentrations from leaks in machinery rooms and from internal service were measured to be below 30 ppm, which is the commended TWA. The ASHRAE table of toxic and flammability parameters is included in Appendix B of this document. The table has been expanded to include toxic and flammability parameters from R-404A, R-410A and R-407C, which were included in CARB's staff report for the RMP. Concentrations from refrigerants off-site are expected to be less than that on-site because of dispersion. Therefore, off-site exposures are expected to below TWA values also.

Based on the above analysis, the proposed project is not expected to create a significant hazard to the public or the environment through the routine transport, use and disposal of hazardous material, since no increase in transport, use or disposal of hazardous material is expected. The proposed project is not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment; or emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school; since refrigerants were not to be flammable and health risks are expected to be less than significant.

VIII.d) Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Since the proposed project regulate the use of refrigerants within closed systems, it is not expected to directly impact facilities affected by Government Code §65962.5. Facilities that are subject to Resource Conservation and Recovery Act (RCRA) permits may have refrigeration or air conditioning units; however, affected facilities would be expected to continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations. Additional leak detection and monitoring and extending leak repair time periods are not expected to interfere with existing hazardous waste management programs.

VIII.e) As stated above and in III. Air Quality and Greenhouse Gas Emissions, extending repair time periods may temporarily generate GHG emissions from refrigerants at individual affected facilities, these emissions are not considered hazardous.

The only additional equipment required is automatic leak detection systems, which are only required for large systems that are enclosed by a structure; thus the proposed project would not increase the heights of any structures at affected facilities. Therefore, the proposed project is not expected to generate hazards that adversely affect public/private airports located in close proximity to the affected sites since these devices are not expected to exceed the height of existing structures at affected facilities.

VIII.f) Since PAR 1415/PR 1415.1 is not expected to involve the use of hazardous material or activities, PAR 1415/PR 1415.1 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII.g) All activities relating to PAR 1415/PR 1415.1 are expected to occur within existing affected industrial or commercial sites in urban areas where wildlands are typically not prevalent. Since PAR 1415/PR 1415.1 is not expected to involve the use of flammable materials (see VIII a), b) & c) above), risk of loss or injury associated with wildland fires is not expected as a result of implementing PAR 1415/PR 1415.1. Therefore, PAR 1415/PR 1415.1 is not expected to be significant for exposing people or structures to risk of loss, injury or death involving wildland fires.

Based upon these considerations, significant hazards and hazardous materials impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further analyzed this Draft EA. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☐	☑
d)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
e)	Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	☐	☐	☐	☑
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
g)	Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
i)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

IX. The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. No additional water or wastewater is expected to be used to repair refrigeration systems. Leak repair activities are relatively minor consisting of soldering copper tubes; tightening or existing connections; and replacing components such as refrigerant lines, gaskets, solenoid valves and expansion valves. Since the refrigerant systems do not use water and the repairs described above do not require no new water use or wastewater generation is expected. In addition, CARB staff did not expect that the RMP would reduce the number or percentage of leaking refrigeration/air conditioning systems, but inspection and maintenance best management practices would cause leaks to be detected and repaired more quickly and completely. Therefore, PR 1415.1 would result in the same repairs made earlier. Leak detecting and monitoring, and reporting requirements would require visual operation or sensors that would not use water or generate wastewater.

IX. b), h) & i) The only construction required by the proposed project would be the installation of automatic leak detection and monitoring systems in existing structures within the boundaries of affected facilities. Refrigerant systems that are not enclosed would not be required to install automatic leak detection and monitoring systems. The construction is not expected to require the use of heavy construction equipment. The monitors and control panels for the automatic leak detection and monitoring systems are expected to be place around refrigerant systems by an electrician on existing paved surfaces. The systems are light enough that forklifts are not expected to be required. Since no water use would be required to install the installation of automatic leak detection and monitoring systems, there would be no impacts to water use or wastewater generation from construction.

As described in IX.a) above, since leak repair activities, and leak detecting and monitoring, and reporting activities would not use water the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, affect available water supplies or require a determination by a wastewater treatment provider.

IX.c), & d) Automated leak detection and monitoring systems would be installed around refrigeration systems in existing structures within the boundaries of affected large facilities. As described IX.b) above, leak detecting and monitoring systems would be installed within existing structures on existing paved surfaces. With the exception of installation of leak detection and monitoring equipment, since the proposed project does not involve major construction activities, no new increases to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected.

CARB staff did not expect that the RMP would reduce the number or percentage of leaking refrigeration/air conditioning systems, but inspection and maintenance best management practices would cause leaks to be detected and repaired more quickly and completely. As described in IX.a) above, these repairs are not expected to use or generate any wastewater. Therefore, these impact areas are not expected to be affected by PAR 1415/PR 1415.1.

IX.e), & f) The proposed project regulates affected facilities that use 50 pounds or more of refrigerants, which refers to primarily to industrial or commercial facilities. For this reason, extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect hydrology or water quality. PAR 1415/PR 1415.1 is not expected to generate the construction of new housing or contribute to the construction of new building structures because no facility modifications or changes are expected to occur at existing affected facilities. Further, PAR 1415/PR 1415.1 is not expected to require additional workers at affected facilities or sites; existing workers/contractor are expected to be able to handle the extended leak repair time; and additional leak inspection, leak detection and monitoring, and reporting requirements. Therefore, PAR 1415/PR 1415.1 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. Further, PAR 1415/PR 1415.1 is not expected to expose persons or structures to significant new flooding risks, or make worse any existing flooding risks than currently exists because no new structure would be necessary to implement PAR 1415/PR 1415.1. Finally, PAR 1415/PR 1415.1 would not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing affected facilities.

IX.g) As indicated in the discussion in IX above, leak detection and repair of air conditioners or refrigeration systems is not expected to result in significant water or wastewater volumes and compositions. As a result, PAR 1415/PR 1415.1 is not expected to result in the construction of new water or wastewater treatment facilities.

PAR 1415/PR 1415.1 would not cause an increase in storm water discharge, since no major construction activities are required or expected. Further, no new areas at existing affected facilities are expected to be paved, so the proposed project would not increase storm water runoff during operation. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities would be required as a result of implementing PAR 1415/PR 1415.1. Accordingly, PAR 1415/PR 1415.1 is not expected to generate any significant adverse impacts relative to construction of new storm water drainage facilities.

Based upon these considerations, significant hydrology and water quality impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further analyzed in this Draft EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X.a) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 and therefore, would not be expected to affect land use and planning since these activities occur on-site at affected facilities, which are required to comply with local zoning. Additional leak inspecting, leak detecting and monitoring, and reporting requirements would not affect land use and planning impacts for the same reasons. With the exception of installing leak detection and monitor equipment in existing structures within affected facilities, PAR 1415/PR 1415.1 would not involve the construction of any air pollution control equipment or structures; therefore, it would not result in physically dividing an established community.

X.b) There are no provisions in PAR 1415/PR 1415.1 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by PAR 1415/PR 1415.1 requirements for repair, leak inspecting, leak detecting and monitoring.

Based upon these considerations, significant land use and planning impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further analyzed in this Draft EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI.a) & b) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. There are no provisions in PAR 1415/PR 1415.1 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Repair and leak detection and monitoring requirements of PAR 1415/PR 1415.1 would have no effects on the use of important minerals, such as those described above. Therefore, no new demand on mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PAR 1415/PR 1415.1 are not anticipated.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further analyzed in this Draft EA. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☑
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Significance Criteria

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII.a) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

Leak repair activities are relatively minor consisting of soldering copper tubes; tightening or existing connections; and replacing components such as refrigerant lines, gaskets, solenoid

valves and expansion valves. CARB staff did not expect that the RMP would reduce the number or percentage of leaking refrigeration/air conditioning systems, but inspection and maintenance best management practices would cause leaks to be detected and repaired more quickly and completely. PAR 1415/PR 1415.1 is not expected to lengthen the amount of work required to make repairs, but to allow more time between when leak is found and when repairs are made. The additional time would be granted because a certified technician is not available, parts are unavailable, or to schedule time for an industrial process to be shutdown. Repairs may also be delayed because the life-cycle, economic hardship or natural disaster exemptions. However, since the same repairs would be made only at a later date no adverse impacts are expected from allowing more time before a leak is repaired. Therefore, extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to increase exposure of persons to or generate permanent noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

Automated leak detection and monitoring systems would be installed around refrigeration systems within the boundaries of affected large facilities. The installation of the automatic monitoring systems is not expected to require the use of heavy construction equipment. Since heavy construction equipment would not be required, no significant construction noise impacts are expected.

Leak detection and monitoring would involve the use of visual inspection or automated leak detection systems which are not consisted excessively noise. Increasing the frequency of leak detection and monitoring operations to monthly and quarterly is not expected to expose persons to the generation of excessive noise levels above current facility levels. Therefore, the existing noise levels are unlikely to change and raise ambient noise levels in the vicinities of the affected facilities to above a level of significance in response to implementing PAR 1415/PR 1415.1. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health at distribution and retail locations.

XII.b) PAR 1415/PR 1415.1 is not anticipated to expose persons to or generate excessive construction groundborne vibration or groundborne noise levels since no major construction activities are expected. As stated above the same leak repair activities are expected under the proposed project only with repair time period extensions. The extended repair time periods are not expected to lengthen the actual repair activities, but allow additional time to find certified technician, parts that are not locally available or schedule time for an industrial process to be shutdown. Repairs may also be delayed because the life-cycle, economic hardship or natural disaster exemptions. The same repairs are expected but would only be made at a later date. Automatic leak detection and monitoring equipment is not expected to generate vibrations or excessive noise. In addition, the equipment would be placed in existing structures within affected facilities. Therefore, the proposed project requirements would not involve the installation of or operation of equipment that would generate excessive vibrations and noise.

XII.c) No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PAR 1415/PR 1415.1 is anticipated because the proposed project would not require construction-related activities but would increase the frequency of existing activities currently performed by affected facility owners/operators, which do not involve excessive noise. See also the response to item XII.a).

XII.d) Even if affected sites are located near public/private airports, no new noise impacts would be expected since leak inspecting, leak detecting and monitoring, and reporting requirements are not considered noise intensive activities. Thus, PAR 1415/PR 1415.1 is not expected to expose persons residing or working in the vicinity of public or private airports to excessive noise levels.

Based upon these considerations, significant noise impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further evaluated in this Draft EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

XIII.a) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions. The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with PAR 1415/PR 1415.1. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of

implementing PAR 1415/PR 1415.1. As such, PAR 1415/PR 1415.1 would not result in changes in population densities or induce significant growth in population.

XIII.b) Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect population and housing since the same workers that repair leaks now are expected to be used under PAR 1415/PR 1415.1.

PAR 1415/PR 1415.1 is not expected to substantially alter existing leak inspecting, leak detecting and monitoring, and reporting requirements operations. The proposed project is expected to increase the frequency of leak inspecting, leak detecting and monitoring, and reporting requirements, but these activities are expected to be completed by the same people who currently complete leak inspecting, leak detecting and monitoring, and reporting requirements. Consequently, PAR 1415/PR 1415.1 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of persons or housing elsewhere in the district.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further evaluated in this Draft EA. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☐	☑
b) Police protection?	☐	☐	☐	☑
c) Schools?	☐	☐	☐	☑
d) Parks?	☐	☐	☐	☑
e) Other public facilities?	☐	☐	☐	☑

Significance Criteria
Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

XIV. a), b), c) & d) Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to affect public services since these activities occur on-site at affected facilities, but would only potentially be lengthened in time, and would not require increase of public services.

PAR 1415/PR 1415.1 would increase the frequency of leak inspecting, leak detecting and monitoring, and reporting requirements at affected facilities from annually to monthly and quarterly. Similar activities are already required by Rule 1415, and the increased frequency of these tasks is expected to be completed by the same people that currently carry out these or similar operations. In addition, leak inspecting, leak detecting and monitoring, and reporting are typically support operations that do not have any direct impact on public services provided by fire protection departments, police protection departments, schools, parks and other public facilities. Therefore, impacts to fire protection, police protection, schools, parks and other facilities are expected to be minimal.

Based upon these considerations, significant public services impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further evaluated in this draft EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	☐	☐	☐	☑

Significance Criteria
Impacts to recreation will be considered significant if:
- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion
XV.a) & b) The proposed project would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

As discussed under Land Use and Planning X.a), there are no provisions in PAR 1415/PR 1415.1 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements would be altered by the adoption of PAR 1415/PR 1415.1, which extends the length of time over which repairs can be made; and increases the frequency of leak inspecting, leak detecting and monitoring, and reporting requirements at affected facilities from annually to monthly and quarterly. Further, PAR 1415/PR 1415.1 would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it would not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PAR 1415/PR 1415.1 and will not be further evaluated in this Draft EA. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI.a) & b) PAR 1415 would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

It is prohibited to dispose of liquid wastes in landfills. As discussed in the Hydrology and Water Quality IX.a), no liquid wastes are expected to be generated by PAR 1415/PR 1415.1.

Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 is not expected to generate additional solid or hazardous waste since the only impacts is the potential additional time allowed to make repairs. The same repairs are expected to be made of in the same amount of time, but additional time would be permitted to allow facility operators to schedule a certified technician, receive parts that were unavailable locally or to schedule time for an industrial process to be shutdown. Since similar activities are already done at affected facilities, PAR 1415/PR 1415.1 would not result in the alteration of the composition of a waste stream.

PAR 1415/PR 1415.1 would require the installation of automatic leak detection and monitoring systems at large facilities. No solid or hazardous waste is expected in the installation of the automatic leak detection and monitoring systems. No major construction is expected to comply with PAR 1415/PR 1415.1. Therefore, no construction related solid or hazardous waste is expected from PAR 1415/PR 1415.1.

PAR 1415/PR 1415.1 would require additional leak inspecting, leak detecting and monitoring, and reporting requirements. Since similar activities are already done at affected facilities, PAR 1415/PR 1415.1 would not result in the alteration of the composition of a waste stream. PAR 1415/PR 1415.1 would not change any requirements specific to cleanup, storage or disposal of waste. Based on existing leak inspecting, leak detecting and monitoring, and reporting operations, these tasks are not expected to generate solid or hazardous waste. Therefore, implementing PAR 1415/PR 1415.1 is not expected to generate significant new adverse hazardous waste impacts.

Therefore, there are no significant adverse solid and hazardous waste impacts associated with PAR 1415/PR 1415.1. As a result, no net increase in the amount or character of solid or hazardous waste streams is expected to occur. Further, PAR 1415/PR 1415.1 is not expected to increase the volume of solid or hazardous wastes from affected facilities, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Based upon these considerations, PAR 1415/PR 1415.1 is not expected to increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities, or require additional waste disposal capacity. Further, implementing PAR 1415/PR 1415.1 is not expected to interfere with any affected distributors' or retailers' ability to comply with applicable local, state, or federal waste disposal regulations. Therefore, no significant recreation impacts are expected from the implementation of PAR 1415/PR 1415.1 and will not be further evaluated in this Draft EA. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

Discussion

XVII.a) & b) PAR 1415 would expand the scope of Rule 1415 to include emissions of high GWP refrigerants, remove obsolete provisions and limit the rule applicability to stationary air conditioning systems. PR 1415.1 would include rule requirements, previously in Rule 1415, for controlling refrigerant emissions from stationary refrigeration systems. PR 1415.1 also includes provisions in the CARB Refrigerant Management Program pertaining to the control of high GWP refrigerant emissions.

Extending the repair time from the existing rule to the repair times in PAR 1415/PR 1415.1 may require more trips over an extended period of time, since workers would have to return for more days. However, the numbers of trips each day is expected to be the same or less, since the same activities would need to be performed on a single day.

A single truck trip is expected to be required to install an automatic leak detection system at large facilities. Since only one truck is needed per facility, this is not expected to impact traffic or transportation.

Additional leak inspecting, leak detecting and monitoring, and reporting requirements would not affect daily transportation demands. Currently, the existing Rule 1415 requires annual leak inspecting, leak detecting and monitoring. PAR 1415/PR 1415.1 would require monthly leak inspecting, leak detecting and monitoring at affected large-sized facilities and quarterly leak inspecting, leak detecting and monitoring at affected medium-sized facilities. However, only a single truck is expected at each facility; therefore, no change to traffic or transportation is expected. Therefore, since no substantial increase in operational-related trips are anticipated, implementing PAR 1415/PR 1415.1 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or other sites that use these products.

XVII.c) Since the only construction necessary is the installation of automatic leak detection and monitoring systems within existing structures within the boundaries of affected facilities, the height and appearance of the existing structures is not expected be affected by complying with PAR 1415/PR 1415.1. Refrigeration systems that are not enclosed are not required to install automatic leak detection and monitoring systems. Therefore, implementation of PAR 1415/PR 1415.1 is not expected to adversely affect air traffic patterns. Further, PAR 1415/PR 1415.1 would not affect in any way air traffic in the region because similar activities are already required by the existing rule. PAR 1415/PR 1415.1 would only change frequencies of these activities.

XVII.d) PAR 1415/PR 1415.1 does not require construction of structures or roadways. Further, implementing PAR 1415/PR 1415.1 would not involve modifications to existing roadways. Consequently, implementing the proposed project will not create roadway hazards or incompatible roadway uses.

XVII.e) PAR 1415/PR 1415.1 is not expected to affect or require changes to emergency access at or in the vicinity of the affected facilities since PAR 1415/PR 1415.1 would not require construction or physical modifications of any kind. Installation of automatic leak detection systems are expected to be placed around refrigeration equipment, where vehicle traffic is not expected. Therefore, PAR 1415/PR 1415.1 is not expected to adversely affect emergency access.

XVII.f) PAR 1415/PR 1415.1 would not require construction outside of existing structures at affected facilities or modifications at affected facilities that would conflict with alternative transportation, such as bus turnouts, bicycle racks, etc. Consequently, implementing PAR 1415/PR 1415.1 would not create any conflicts with these modes of transportation.

Based upon these considerations, PAR 1415/PR 1415.1 is not expected to generate significant adverse transportation/traffic impacts and, therefore, this topic will not be considered further in this Draft EA. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

XVIII.a) As discussed in the "Biological Resources" section, PAR 1415/PR 1415.1 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because the proposed project would only alter the frequency of activities currently required by the existing rule. Refrigerants are used at new or existing institutional, industrial, or commercial sites, however, these sites have already been greatly disturbed and as such, would not typically support habitats or include important examples of the major periods of California history or prehistory. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the institutional, commercial or industrial locations where refrigerants and air conditioning systems are used.

XVIII.b) PAR 1415/PR 1415.1 does not generate project-specific adverse impacts from other environmental topics besides air quality and greenhouse gas emissions, and hazards and

hazardous materials. Cumulative impacts are not considered to be "cumulatively considerable" as defined by CEQA guidelines §15065(a)(3) for these environmental topics. For example, the environmental topics checked 'No Impact' (e.g., agriculture and forest resources, biological resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever.

For the environmental topics checked 'Less than Significant Impact' (e.g., air quality and greenhouse gas emissions and hazards and hazardous materials), the analysis indicated that proposed project impacts would not exceed any project-specific significance thresholds. This conclusion is based on the fact that the analyses for each of these environmental areas concluded that the incremental effects of the proposed project would be minor and, therefore, not considered to be cumulatively considerable. Also, in the case of air quality and greenhouse gas emissions impacts, the net effect of implementing the proposed project with other proposed rules and regulations, and AQMP control measures is an overall reduction in district-wide emissions contributing to the attainment of state and national ambient air quality standards.

Therefore, it is concluded that the proposed project has no potential for significant cumulative or cumulatively considerable impacts in any environmental areas.

XVIII.c) Based on the foregoing analyses, PAR 1415/PR 1415.1 is not expected to cause significant adverse effects on human beings. Based on the preceding analyses, no significant adverse impacts to aesthetics, agriculture and forest resources, air quality and greenhouse gas emissions, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic are expected as a result of the implementation of PAR 1415/PR 1415.1.

As discussed in items I through XVIII above, the proposed project is not expected to have the potential to cause significant adverse environmental impacts to any environmental topic.

APPENDIX A

PROPOSED AMENDED RULE 1415 AND PROPOSED RULE 1415.1

(Adopted June 7, 1991)(Amended October 14, 1994)(Amended December 3, 2010)

PROPOSED AMENDED RULE 1415. REDUCTION OF REFRIGERANT EMISSIONS FROM STATIONARY ~~REFRIGERATION AND~~ AIR CONDITIONING SYSTEMS

(a) Purpose

The purpose of this rule is to reduce emissions of ~~Class I and Class II~~ high-global warming potential refrigerants from stationary ~~refrigeration and~~ air conditioning systems by requiring persons subject to this rule to reclaim, recover, or recycle refrigerant and to minimize refrigerant leakage.

(b) Applicability

This rule is applicable to any person who owns or operates an ~~refrigeration~~ air conditioning system, as defined in this rule. This rule is also applicable to any person who installs, ~~replaces,~~ repairs, maintains, services, ~~disposes, audits, or~~ relocates, or disposes of an ~~refrigeration~~ air conditioning system~~,~~; to any person who services or maintains recycling and recovery equipment~~,~~; and to any person who recycles, recovers, reclaims, or sells high-global warming potential refrigerant. ~~All amendments to this rule adopted as of October 14, 1994 shall take effect as of October 14, 1994.~~

(c) Definitions

For purposes of this rule, the following definitions shall apply:

(1) ADDITIONAL REFRIGERANT CHARGE ~~is~~means the quantity, in pounds, of refrigerant ~~(in pounds) charged~~added to an air conditioning ~~refrigeration~~ system in order to bring the system to a full ~~capacity~~ charge ~~and replace refrigerant which has leaked.~~ Additional refrigerant charge does not include an initial refrigerant charge.

(2) AIR CONDITIONING SYSTEM means any stationary, non-residential appliance, which holds more than 50 pounds of high global warming potential refrigerant, and provides cooling to a space to an intended temperature of not less than 68°F for the purpose of cooling objects or occupants. Computer-room air conditioner is included in this definition.

(3) AUDIT means inspection and maintenance of an air conditioning system conducted to identify leaks and ensure proper operation pursuant to manufacturer's specification.

(4) BUBBLE TEST means applying a soap solution or spraying on with an aerosol around a potential leak source, and observing for bubbles.

(5) CERTIFIED RECLAIMER is a person who holds a current, valid, and applicable reclaimer certificate in accordance with Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.164.

(6~~2~~) ~~APPROVED~~CERTIFIED REFRIGERANT RECOVERY OR RECYCLING EQUIPMENT is equipment for refrigerant recovery or recycling that meets the definition~~is certified~~ by the U.S. Environmental Protection Agency pursuant to ~~the requirements of Part 82 of~~ Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.152.

~~(3) APPROVED RECYCLING EQUIPMENT is any refrigerant recycling equipment that is certified by Underwriters Laboratories, or another independent testing organization as approved by the Executive Officer's designee, and is certified by the Environmental Protection Agency pursuant to the requirements of Part 82 of Title 40 of the Code of Federal Regulations.~~

~~(4) AUDIT is an annual inspection of the refrigeration systems containing Class I refrigerants conducted to:~~

~~(A) identify leaks pursuant to a District approved method (Section (2)(A)); and~~

~~(B) ensure proper operation pursuant to manufacturer's specification.~~

~~(5) CERTIFIED AUDITOR for the purpose of this Rule is a person that:~~

~~(A) has the following current, valid, and applicable U.S. Environmental Protection Agency certificate provided in accordance with Part 82 of Title 40 of the Code of Federal Regulations:~~

1~~(i) a Type II Technician certificate for high or very high pressure refrigeration systems and a Type III Technician certificate for low pressure refrigeration systems; or~~

~~(ii) a Universal Technician certificate, or~~

~~(B) until June 30, 1995, has successfully completed a District approved course in conducting inspections and generating records for compliance with this rule, and has a current, valid, written certification from the Executive Officer's designee.~~

~~(6) CERTIFIED RECLAIMER is a person who holds a current, valid, and applicable reclaimer certificate in accordance with Part 82 of Title 40 of the Code of Federal Regulations.~~

(7~~7~~) CERTIFIED TECHNICIAN is a person who ~~on and after November 14, 1994 has the following~~has a current, valid, and applicable U.S. Environmental Protection Agency technician certificate ~~provided~~ issued in accordance with ~~Part 82 of~~ Title 40 of the Code of Federal Regulations, Part 82, §82.40 or §82.161.~~:~~

~~(i) a Type II Technician certificate for high or very high pressure refrigeration systems; or~~

~~(ii) a Type III Technician certificate for low pressure refrigeration systems; or~~

~~(iii) a Universal Technician certificate.~~

~~(8) CLASS I REFRIGERANT is any compound or any combination of compounds designated by U.S. Environmental Protection Agency as a CLASS I refrigerant pursuant to 42 U.S.C. 7671(a).~~

~~(9) CLASS II REFRIGERANT is any compound or any combination of compounds designated by U.S. Environmental Protection Agency as a CLASS II refrigerant pursuant to 42 U.S.C. 7671(a).~~

(8) CHLOROFLUOROCARBON or CFC is a class of compounds primarily used as refrigerants, consisting of only chlorine, fluorine, and carbon.

(9) COMPONENT is a part of an air conditioning system or appliance (including condensing units, compressors, condensers, evaporators, receivers) and all of its connections and subassemblies, without which the air conditioning system or appliance will not properly function or will be subject to failures.

(10~~10~~) DISPOSE is to discard refrigerant in any manner, except destruction by incineration or by a treatment method specifically approved by the U.S.

Environmental Protection Agency for handling such refrigerant without releasing it to the atmosphere.

(11) GLOBAL WARMING POTENTIAL VALUE or GWP VALUE means the 100-yr GWP value first published by the Intergovernmental Panel on Climate Change (IPCC) in its Second Assessment Report (SAR) (IPCC, 1995); or if a 100-yr GWP value was not specified in the IPCC SAR, it means the GWP value published by the IPCC in its Fourth Assessment A-3 Report (AR4) (IPCC, 2007); or if a 100-yr GWP value was not specified in the IPCC AR4, then the GWP value will be determined by the Executive Officer based on data, studies and/or good engineering or scientific judgment. Both the 1995 IPCC SAR values and the 2007 IPCC AR4 values are published in table 2.14 of the 2007 IPCC AR4. The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

(12) HIGH GLOBAL WARMING POTENTIAL REFRIGERANT means any compound used as a heat transfer fluid or gas that is:

(A) a chlorofluorocarbon; or

(B) a hydrochlorofluorocarbon; or

(C) a hydrofluorocarbon; or

(D) a perfluorocarbon; or

(E) any compound or blend of compounds, with a global warming potential value equal to or greater than 150; or

(F) any ozone depleting substance as defined in Title 40 of the Code of Federal Regulation, Part 82, §82.3

~~(11) High pressure refrigeration system is a refrigeration system that uses a refrigerant with a boiling point between -50 and 10 degrees Centigrade at atmospheric pressure (29.9 inches of mercury).~~

~~(12) Low pressure refrigeration system is a refrigeration system that uses a refrigerant with a boiling point above 10 degrees Centigrade at atmospheric pressure (29.9 inches of mercury).~~

~~(13) MAINTENANCE is an annual service of the refrigeration system containing Class II refrigerants conducted to:~~

~~(A) ensure proper operation pursuant to manufacturer's specification; and~~

~~(B) assess the overall integrity of the refrigeration system to detect leaks.~~

(13) HYDROCHLOROFLUOROCARBON or HCFC is a class of compounds primarily used as refrigerants, consisting of only hydrogen, chlorine, fluorine, and carbon.

(14) HYDROFLUOROCARBON or HFC is a class of compounds primarily used as refrigerants, consisting of only hydrogen, fluorine, and carbon.

(15) PERFLUOROCARBON or PFC is a class of compounds consisting only of carbon and fluorine.

(16~~14~~) PERSON is any individual, firm, ~~business establishment,~~ association, organization, partnership, business trust, corporation, company, contractor, supplier, installer, user or owner, or any state or local government agency or public district or any other officer or employee thereof. PERSON also means the United States or its agencies to the extent authorized by Federal law.~~individual, whether acting as principal, agent, employee, or in any other capacity, including any governmental entity or charitable organization.~~

(17~~15~~) RECLAIM is to reprocess refrigerant to a level equivalent to new product specifications in accordance with applicable requirements of the U.S. Environmental Protection Agency contained in ~~Part 82 of~~ Title 40, ~~of the~~ Code of Federal Regulations, Part 82, Subpart F, §82.152.

(18~~16~~) RECOVER is to remove refrigerant~~,~~ in any condition~~,~~ from a system and to store it in an external container~~,~~ without necessarily testing or processing it in any way.

(19~~17~~) RECYCLE is to extract refrigerant from an appliance and to clean the refrigerant for reuse by oil separation and single or multiple passes through moisture-absorption devices, such as replaceable core filter-driers which reduce moisture, acidity, and particulate matter, without meeting all of the requirements for reclamation.

(20~~18~~) REFRIGERANT LEAK is any discharge of refrigerant into the atmosphere from ~~a refrigeration~~ an air conditioning system, refrigerant

recovery ~~equipment, or~~ recycling equipment, ~~into the atmosphere~~refrigerant cylinder, or other container.

~~(19) REFRIGERATION SYSTEM is 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.~~

(21~~20~~) SELF-CONTAINED RECOVERY EQUIPMENT is any refrigerant recovery equipment that is capable of removing the refrigerant from an air conditioning ~~refrigeration~~ system without the assistance of components contained in the ~~refrigeration~~air conditioning system.

~~(21) Very high pressure refrigeration system is a refrigeration system that uses a refrigerant with a boiling point below -50 degrees Centigrade at atmospheric pressure (29.9 inches of mercury).~~

(d) Requirements

(1) A person shall not operate an air conditioning system subject to this rule unless all of the following requirements are met:

(A) A Registration Plan for the entire facility is submitted to the District at start of operation, and every two years thereafter. Such plan shall contain the following information:

(i) facility name and address;

(ii) name and title of contact person;

(iii) type of business;

(iv) number of air conditioning systems in operation;

(v) manufacturer name, model and serial number for each of the air conditioning systems;

(vi) type of refrigerant in each air conditioning system;

(vii) full charge of refrigerant in each air conditioning system, in pounds;

(viii) date of last audit and/or maintenance performed for each air conditioning system; and

(ix) amount of additional refrigerant charge every year for each system, in pounds.

(B) The owner or operator shall conduct an audit of the air conditioning system no later than one year after beginning operation, and every year thereafter, to determine whether such system is operating pursuant to manufacturer's specifications and does not have refrigerant leaks. At a minimum, the annual audit shall include the following:

(i) A leak inspection using one or more of the following methods:

(I) Refrigerant leak detection device used in accordance with the manufacturer's specifications;

(II) A bubble test;

(III) Observation of oil residue; or

(IV) An alternate method approved by the Executive Officer.

(ii) A determination of the amount of refrigerant leak for each air conditioning system by recording the total capacity of refrigerant charge in each air conditioning system, the quantity of any additional refrigerant charge for each air conditioning system, and the date of each charge. The quantity of additional refrigerant charge shall be determined by weighing the refrigerant charging container before and after each charge, using equipment that is accurate to the nearest pound.

(iii) An examination for deficiencies which may cause refrigerant leakage.

(2) Any person who owns or operates an air conditioning system that has a refrigerant leak shall ensure that the leak is repaired no later than 14 calendar days after the leak has been discovered or should have been discovered. The owner or operator shall maintain a log of repair activities beginning at the time the leak is discovered and ending at the time when the leak has been repaired. The air conditioning system shall be verified

by a certified technician to be leak free before any refrigerant is added to the system.

(3) The owner or operator of an air conditioning system has 45 days after initial leak detection to repair a refrigerant leak if one or more of the following conditions exists:

(A) A certified technician is not available to complete the repair. A written record shall be kept to document that no certified technician is available within 14 days of the initial leak detection; or

(B) The parts necessary to repair a refrigerant leak are unavailable within 14 days of the initial leak detection. A written statement verifying that the parts are unavailable from the refrigeration system or component manufacturer or distributor shall be obtained.

(4~~1~~) ~~On and after January 1, 1992, n~~No person shall install, service, repair, modify, or dispose of any ~~refrigeration~~air conditioning system~~, or perform any related repairs or modifications~~ that may cause the release of ~~Class I or Class II~~ high-global warming potential refrigerants unless that person meets all of the following requirements:

(A) The person has a current, valid, and applicable U.S. Environmental Protection Agency technician certificate issued in accordance with Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.161.

(B~~A~~) Recovers, recycles, or reclaims the refrigerant, using ~~approved~~ certified refrigerant recovery or recycling ~~or recovery~~ equipment for that type of ~~refrigeration~~ air conditioning unit, and employs procedures for which the ~~recycling or~~ certified refrigerant recovery or recycling equipment was approved by the U.S. Environmental Protection Agency. ~~Recovery and recycling~~ Such equipment shall be used as specified by the certified refrigerant recovery or recycling equipment manufacturer, unless the manufacturer's specifications are in conflict with the ~~equipment approved~~ procedures approved by the U.S. Environmental Protection Agency for the certified refrigerant recovery or recycling equipment. Refrigerant may be returned to the ~~refrigeration~~ air conditioning

system from which it is recovered ~~from~~, or to another ~~refrigeration~~ air conditioning system owned by the same person, without being recycled or reclaimed.

(C~~B~~) Satisfies job site evacuation of ~~Class I and Class II~~ high global warming potential refrigerants during recycling, recovering, reclaiming, or disposing in accordance with ~~applicable regulations of the U.S. Environmental Protection Agency as contained in Part 82, Subpart F, Section 82.156, of~~ Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.156. ~~then in effect including, but not limited to, "Required Levels of Evacuation for Air Conditioning and Refrigeration Equipment".~~ De minimis refrigerant releases associated with a good faith attempt to recycle or recover refrigerants are allowed. ~~provided that required practices or requirements in accordance with regulations then in effect of the U.S. Environmental Protection Agency contained in Part 82, Subpart F, Section 82.156 and Section 82.158, and Part 82, Subpart B of~~ Refrigerant releases shall be considered de minimis only if they occur when the required practices or requirements in Part 82, Subpart F, §§82.156 and 82.158, and Part 82, Subpart B of Title 40 of the Code of Federal Regulation, ~~are~~ followed~~.~~;

(D~~C~~) Has at least one piece of ~~approved~~certified, self-contained recovery equipment available at their place of business;

(E~~D~~) ~~On or after October 14, 1994, a~~Any person who owns or operates ~~an approved~~ a certified refrigerant recovery or recycling ~~or recovery~~ equipment:

(i) Shall not operate any ~~approved~~certified refrigerant recycling or recovering equipment, except for the maintenance or repair of such equipment, unless the equipment has been tested for and been determined to have no leaks within the past six months as determined by a method approved by the Executive Officer~~'s designee~~. Leaks in recycling, recovering, or charging equipment shall be repaired within 2 working days after the leak is first

detected, unless ~~the equipment does not leak if~~ its use is promptly discontinued and the equipment does not leak after its use is discontinued;

(ii) Shall not alter the design of a ~~approved~~certified recovery and recycling equipment in a manner that would affect the equipment's ability to meet the certification standards set by the U.S. Environmental Protection Agency without resubmitting the altered design to an approved equipment testing facility for ~~approval~~certification testing. Until such altered equipment is tested by a U.S. Environmental Protection Agency approved equipment testing facility, and is shown to meet the certification standards set forth by the U.S. Environmental Protection Agency, the equipment so altered shall not be considered ~~approved~~certified, and shall not be used; and~~,~~

(iii) Shall provide proof of certification for the recovery and recycling equipment from the U.S. Environmental Protection Agency to the Executive Officer~~'s designee~~ upon request.

~~(E) On and after November 14, 1994 has the following current, valid and applicable U.S. Environmental Protection Agency certificate provided in accordance with Part 82 of Title 40 of the Code of Federal Regulations:~~

~~(i) a Type II Technician certificate for high or very high pressure refrigeration systems; or~~

~~(ii) a Type III Technician certificate for low pressure refrigeration systems; or~~

~~(iii) a Universal Technician certificate.~~

~~(2) No person shall operate a refrigeration system unless all of the following applicable requirements are met:~~

~~(A) An annual audit has been conducted for refrigeration systems containing Class I refrigerant by a Certified Auditor to determine whether the system is operating pursuant to manufacturer's~~

~~specifications and does not have refrigerant leaks. This audit shall commence no later than July 1, 1992, and every 12 months thereafter. At minimum, the annual audit shall require the following:~~

~~(i) A leak test shall be conducted for refrigeration systems operating above atmospheric pressure using one of the following methods:~~

~~(I) Electronic halogen detector used in accordance with manufacturer's specifications;~~

~~(II) Fluorescent tracer dyes injected into the system according to manufacturer's specifications, and scanned with an ultraviolet lamp; or~~

~~(III) An alternate method approved by the Executive Officer's designee.~~

~~(ii) A leak test shall be conducted for refrigeration systems operating below atmospheric pressure by using one of the following methods:~~

~~(I) Pressurizing the system by using an inert gas mixture with an indicator or by raising the temperature of the Evaporator; or~~

~~(II) An alternate method approved by the Executive Officer's designee.~~

~~(iii) Amount of refrigerant leak shall be determined, for each refrigeration system, by recording the total capacity of refrigerant charge in each refrigeration system, the quantity of any additional refrigerant charge to each refrigeration system, as defined in (c)(1), and the date of each charge. The quantity of additional refrigerant charge shall be determined by weighing the refrigerant charging container before and after each charge, using equipment that is accurate to the nearest pound.~~

~~(iv) An examination for deficiencies which may cause refrigerant leakage.~~

~~(B) An annual maintenance program for refrigeration systems containing Class II refrigerants has been established to ensure that the system is operating pursuant to the manufacturer's specification and that it does not have any refrigerant leaks. This program shall consist of all of the following:~~

~~(i) An inspection for leaks by a certified technician which includes an examination for deficiencies which may cause refrigerant leakage.~~

~~(ii) A written record of the quantity of any additional refrigerant charge to each refrigeration system. The quantity of additional refrigerant charge shall be determined by weighing the refrigerant charging container before and after each charge, using equipment that is accurate to the nearest pound.~~

~~(C) A Registration Plan for the entire facility has been submitted to the District by January 1, 1996 and every two years thereafter. This Registration Plan shall contain:~~

~~(i) number of refrigeration systems in operation;~~

~~(ii) type of refrigerants in each refrigeration system;~~

~~(iii) amount of refrigerant in each refrigeration system;~~

~~(iv) date of last annual audit or maintenance performed for each refrigeration system; and~~

~~(v) amount of refrigerant charged every year.~~

~~(3) On and after January 1, 1992, any person who owns or operates a refrigeration system that has a refrigerant leak as defined in paragraph (c)(18) shall ensure that the leak is repaired no later than 14 calendar days after the leak has been discovered or should have been discovered. The owner or operator shall maintain a log of repair activities beginning at the time the leak is discovered and ending at the time when the leak has been repaired. The refrigeration system shall be verified by a certified technician to be leak free before any refrigerant is added to the system.~~

(4~~5~~) ~~On or after November 14, 1994, n~~No person shall sell, distribute, offer for sale or distribution~~, or purchase~~ any ~~Class I or Class II~~high-global warming potential refrigerant for use as a refrigerant to any person unless:

(A) The buyer is a certified technician pursuant to Part 82 of Title 40 of the Code of Federal Regulations; or

(B) The buyer is an authorized representative of a person employing at least one certified technician, and the buyer has provided evidence that at least one technician is properly certified; or

(C~~B~~) The refrigerant is sold only for eventual resale to certified technicians or to ~~refrigeration~~air conditioning system manufacturers; or

(D~~C~~) The refrigerant is contained in an ~~refrigeration~~ air conditioning system.

~~(D) The refrigerant is charged into a refrigeration system by a certified technician.~~

(5~~6~~) ~~Effective October 18, 1994 until May 15, 1995, n~~No person shall sell, offer for sale, supply, or distribute, ~~or offer for sale~~ any ~~Class I or Class II~~high-global warming refrigerant consisting wholly or in part of used refrigerant unless the refrigerant has been reclaimed by a certified reclaimer.

(6~~7~~) No person reclaiming refrigerants shall release into the atmosphere more than 1.5 percent of the refrigerant received for reclamation.

(e) Recordkeeping

(1) ~~On and after January 1, 1992, a~~Any person owning or operating any ~~refrigeration~~ air conditioning system is required to maintain the following records for each ~~refrigeration~~ air conditioning system:

(A) ~~A report~~Documents demonstrating compliance with paragraphs (d)(1~~2~~) and ~~repairs required by paragraph~~ (d)(2~~3~~), which includes the following information:

(i) Date of annual audit ~~and annual maintenance program~~;

(ii) All work completed for each ~~refrigeration~~ air conditioning system to prevent or repair leaks, including results of leak testing and leak determinations;

(iii) Name(s) of the person who completed the inspection and repair, ~~and~~including the name, address, and telephone number of the company the person is representing;

~~(iv) The permit number of the recycling or recovery equipment;~~

(iv) The log of repair activities; and

(v~~i~~) Technician certificate ~~type~~number.

(B) A log of the quantity of each additional refrigerant charged to the ~~refrigeration~~ air conditioning system and the date of each charge.

(C) A log of malfunctions of the ~~refrigeration~~ air conditioning system, other than that determined in ~~section~~paragraphs (d)(1~~2~~) and (d)(2~~3~~), including the following:

(i) The cause of the malfunction; and

(ii) The type of repairs required and the date the repairs were completed.

(D) If refrigerant is recycled off-site, a transportation bill-of-lading (or other transportation document as approved by the Executive Officer~~'s designee~~) indicating the name and location of the facility from which the refrigerant is shipped, the quantity of refrigerant transported, destination (company name, phone number, and location) and date of transportation.

(E) The quantity (in pounds) of ~~Class I or Class II~~ high-global warming refrigerants purchased or used in the District in a calendar year and the name and address of the refrigerant supplier.

(2) ~~On and after July 1, 1991, a~~Any person who receives refrigerant for recycling or reclaiming from off-site locations shall maintain copies of all transportation documents as required in ~~section~~subparagraph (e)(1)(D) for each shipment of refrigerant received.

(3) Records and reports required under ~~sections~~subparagraphs (e)(1)(A), (e)(1)(B), and (e)(1)(C) shall be generated by a ~~Certified Auditor or a~~

certified technician. Annual audits and maintenance records shall be in a format approved in writing by the Executive Officer.~~'s designee.~~

(4) All persons who sell or distribute any ~~Class I or Class II~~high-global warming refrigerant shall retain invoices, pursuant to paragraph (e)(9), that indicate the name of the purchaser, the date of sale, and the quantity of refrigerant purchased.

(5) A refrigerant distributor or wholesaler selling high-global warming potential refrigerant to a ~~P~~purchaser~~s of any Class I or Class II refrigerant~~ who employs ~~certified technicians shall provide evidence that at least one~~ a certified technician ~~is properly certified to the wholesaler who sells them refrigerant.~~shall obtain written documentation that the purchaser employs that least one certified technician. ~~-~~ The distributor or wholesaler shall keep this information on file for a minimum of five years. ~~and may sell refrigerant to the purchaser or authorized representative even if such purchaser or authorized representative is not a properly certified technician. The purchaser must notify the wholesaler in the event that the purchaser no longer employs at least one properly certified technician.~~

(6) Reclaimers shall maintain records of the names and addresses of persons sending them material for reclamation and the quantity of the material (the combined mass in pounds of refrigerant and contaminants) sent to them for reclamation.

(7) Reclaimers shall maintain records of the quantity of material sent to them for reclamation, the mass in pounds of refrigerant reclaimed, and the mass in pounds of waste product.

(8) ~~On and after October 14, 1994, a~~Any person owning and operating a~~n approved~~certified refrigerant recovery or recycling ~~or recovery~~ equipment shall maintain ~~the following~~ records ~~as required by~~ to determine compliance with ~~paragraph~~clause (d)(~~3~~1)(~~E~~D)(i), which includes the following information:

(A) Date of semi-annual inspection;

(B) All work completed for each recycling or recovery system to prevent or repair leaks, including results of leak testing and leak determinations; and

(C) Name(s) of the person who completed the inspection and repair, ~~and~~including the name, address, and telephone number of the company the person is representing.~~; and~~

~~(D) The permit number of the recycling or recovery equipment.~~

(9) Records and reports as required under ~~sections~~paragraphs (e)(1), (e)(2), (e)(4), (e)(5), (e)(6), (e)(7), and (e)(8) shall be maintained for a minimum of ~~not less than~~ 5~~3~~ years, ~~after their creation~~ shall be kept at the facility where the air conditioning system is in operation, and shall be made available to the Executive Officer~~'s designee~~ upon request.

(Adopted December 3, 2010)

PROPOSED RULE 1415.1 REDUCTION OF REFRIGERANT EMISSIONS FROM STATIONARY REFRIGERATION SYSTEMS

(a) Purpose

The purpose of this rule is to reduce emissions of high global warming potential refrigerants from stationary refrigeration systems by requiring persons subject to this rule to recover, recycle, or reclaim refrigerant and to minimize refrigerant leaks.

(b) Applicability

This rule applies to any person who owns or operates a refrigeration system, as defined in this rule. This rule also applies to any person who installs, repairs, maintains, services, relocates, or disposes of any refrigeration system, regardless of charge size; to any person who services or maintains recycling and recovery equipment; and to any person who recycles, recovers, reclaims, distributes or sells high global warming potential refrigerant.

(c) Definitions

For purposes of this rule, the following definitions shall apply:

(1) ADDITIONAL REFRIGERANT CHARGE means or is the quantity, in pounds, of refrigerant added to a refrigeration system in order to bring the system to a full charge. Additional refrigerant charge does not include an initial refrigerant charge.

(2) AUTOMATIC LEAK DETECTION SYSTEM means or is a calibrated device that uses continuous monitoring for detecting leakage of refrigerants, and alerts the operator when a refrigerant leak is detected. An automatic leak detection system may be either:

(A) A direct system that automatically detects the presence in air of refrigerant leaked from a refrigeration system; or

(B) An indirect system that automatically interprets measurements (e.g. temperature or pressure) within a refrigeration system that indicate a refrigerant leak and alerts the operator to the presence of a refrigerant leak.

(3) CERTIFIED RECLAIMER means or is a person who holds a current, valid, and applicable reclaimer certificate in accordance with Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.164.

(4) CERTIFIED REFRIGERANT RECOVERY OR RECYCLING EQUIPMENT means or is equipment for refrigerant recovery or recycling that meets the definition by the U.S. Environmental Protection Agency pursuant to Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.152.

(5) CERTIFIED TECHNICIAN means or is a person who has a current, valid, and applicable U.S. Environmental Protection Agency technician certificate issued in accordance with Title 40 of the Code of Federal Regulations, Part 82, §82.40 or §82.161.

(6) CHANGE OF OWNERSHIP means or is a transfer of the title of a facility subject to this rule.

(7) CHLOROFLUOROCARBON or CFC means or is a class of compounds primarily used as refrigerants, consisting of only chlorine, fluorine, and carbon.

(8) COMMERCIAL REFRIGERATION means or is a refrigeration appliance typically utilized in the retail food and cold storage warehouse sectors. Retail food refrigeration includes, but is not limited to, the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes, but is not limited to, the equipment used to store meat, produce, dairy products, and other perishable goods.

(9) COMPONENT means or is a part of a refrigeration system or appliance (including condensing units, compressors, condensers, evaporators, receivers) and all of its connections and subassemblies, without which the refrigeration system or appliance will not properly function or will be subject to failures.

(10) CONTINUOUS MONITORING means or is measuring the ambient concentration of refrigerant using electronic or mechanical sensors, or interpreting measurements (e.g. temperature or pressure) within a refrigeration system that indicate a refrigerant leak in real time.

(11) DIRECT EMISSIONS mean high global warming potential refrigerant emissions from a facility that are emitted by refrigeration systems under the operational control of a facility owner or operator. Direct emissions are calculated as the total weight in pounds of each type of high global warming potential refrigerant that was charged into a refrigeration system minus the total weight in pounds of each type of high global warming potential refrigerant that was recovered from a refrigeration system, as reported in the annual Facility Stationary Refrigeration Report pursuant to paragraphs (f)(1), (f)(2), and (f)(3).

(12) ENCLOSED BUILDING OR STRUCTURE means or is a building or structure with a roof and walls that prevent wind from entering the facility.

(13) EQUIPMENT TYPE means or is commercial refrigeration, industrial process refrigeration, or other refrigeration appliance.

(14) FACILITY for the purpose of this rule means or is any property, plant, building, structure, stationary source, stationary equipment or grouping of stationary equipment or stationary sources located on one or more contiguous or adjacent properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, and under common operational control, that includes one or more refrigeration systems or appliance subject to this rule. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

(15) FACILITY IDENTIFICATION NUMBER means or is a unique identification number provided by the Executive Officer for each facility with one or more refrigeration systems in operation.

(16) FOLLOW-UP VERIFICATION TEST means or is a test that involves checking the repairs within 30 days of the refrigeration system returning to normal operating characteristics and conditions. "Follow-up verification test" for a refrigeration system from which the refrigerant charge has been evacuated means a test conducted after the refrigeration system or portion of the refrigeration system 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. "Follow-up verification test" for a refrigeration system from which the refrigerant charge has not been evacuated means a reverification test conducted after the initial verification test and usually within 30 days of returning to normal operating characteristics and conditions. Where a refrigeration system is not evacuated, it is only necessary to complete any required changes to return the refrigeration system to normal operating characteristics and conditions.

(17) "FULL CHARGE", "OPTIMAL CHARGE", or "CRITICAL CHARGE" means or is the amount of refrigerant required in the refrigerant circuit for normal operating characteristics and conditions of a refrigeration system, as determined by one of the following methods:

(A) Use of the equipment manufacturer's specifications of the full charge; or

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

(C) The midpoint of an established range for full charge based on the best available data regarding the normal operating characteristics and conditions for the system.

(18) GLOBAL WARMING POTENTIAL means or is the capacity to heat the atmosphere, calculated as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram (kg) of a substance relative to that of 1 kg of CO_2. Global warming potential shall be calculated according to the factors for a 100-year time horizon.

(19) GLOBAL WARMING POTENTIAL VALUE or GWP VALUE means or is the 100-yr GWP value first published by the Intergovernmental Panel on Climate Change (IPCC) in its Second Assessment Report (SAR) (IPCC, 1995); or if a 100-yr GWP value was not specified in the IPCC SAR, it means the GWP value published by the IPCC in its Fourth Assessment A-3 Report (AR4) (IPCC, 2007); or if a 100-yr GWP value was not specified in the IPCC AR4, then the GWP value will be determined by the Executive Officer based on data, studies and/or good engineering or

scientific judgment. Both the 1995 IPCC SAR values and the 2007 IPCC AR4 values are published in table 2.14 of the 2007 IPCC AR4. The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

(20) HIGH GLOBAL WARMING POTENTIAL REFRIGERANT means or is any compound used as a heat transfer fluid or gas that is:

(A) A chlorofluorocarbon; or

(B) A hydrochlorofluorocarbon; or

(C) A hydrofluorocarbon; or

(D) A perfluorocarbon; or

(E) Any compound or blend of compounds, with a global warming potential value equal to or greater than 150; or

(F) Any ozone depleting substance as defined in Title 40 of the Code of Federal Regulation, Part 82, §82.3

(21) HYDROCHLOROFLUOROCARBON or HCFC means or is a class of compounds primarily used as refrigerants, consisting of only hydrogen, chlorine, fluorine, and carbon.

(22) HYDROFLUOROCARBON or HFC means or is a class of compounds primarily used as refrigerants, consisting of only hydrogen, fluorine, and carbon.

(23) INDIRECT EMISSIONS are emissions that are a consequence of the activities of a facility, but occur at sources owned or controlled by another person, related to energy consumed for electricity, heat, steam, and cooling.

(24) INDUSTRIAL PROCESS REFRIGERATION means complex customized appliances used in the chemical, pharmaceutical, petrochemical and manufacturing industries that are directly linked to the industrial process. Industrial process refrigeration includes, but is not limited to, 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.

(25) INDUSTRIAL PROCESS SHUTDOWN means that an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility.

(26) INITIAL REFRIGERANT CHARGE means or is the quantity, in pounds, of high global warming potential refrigerant added to a refrigeration system or appliance in order to bring the system to a full charge upon initial installation of a refrigeration system or appliance.

(27) INITIAL VERIFICATION TEST means or is a leak test that is conducted as soon as practicable after the repair is completed. Initial verification test, with regard to leak repairs that require the evacuation of the refrigeration system or portion of the refrigeration system, means a test conducted prior to the replacement of the full charge and before the refrigeration system or portion of the refrigeration system has reached normal operating characteristics and conditions of temperature and pressure. Initial verification test, with regard to repairs conducted without the evacuation of the full charge, means a test conducted as soon as practicable after the conclusion of the repair work.

(28) INTENDED TO BE OPERATED YEAR ROUND means a refrigeration system at a facility that is not a seasonal facility.

(29) LEAK INSPECTION means or is an inspection of a refrigeration system to detect a leak of a high global warming potential refrigerant.

(30) LOW TEMPERATURE REFRIGERATION SYSTEM means or is a commercial or industrial refrigeration system used for frozen products.

(31) MEDIUM TEMPERATURE REFRIGERATION SYSTEM means or is a commercial or industrial refrigeration system used for chilled products.

(32) NEWLY CONSTRUCTED means or is a facility that is not yet operational, or that has been operational for less than 6 months.

(33) NON-REFILLABLE CYLINDER means or is a cylinder with a refrigerant capacity of two pounds or greater that is designed not to be refilled and is used in the servicing, maintenance or filling of a refrigeration system, appliance, motor vehicle air conditioning system, or heat pump equipment.

(34) NORMAL OPERATING CHARACTERISTICS AND CONDITIONS mean or are refrigeration system operating temperatures, pressures, fluid flows, speeds, and other characteristics, including full charge of the refrigeration system 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 system.

(35) OTHER REFRIGERATION means or is any stationary, non-residential appliance that is used for an application other than industrial process refrigeration, commercial refrigeration, or air conditioning, or is used for two or more applications including industrial process refrigeration, commercial refrigeration, or air conditioning.

(36) PERFLUOROCARBON or PFC means or is a class of compounds consisting only of carbon and fluorine.

(37) PERSON means or is any individual, firm, association, organization, partnership, business trust, corporation, company, contractor, supplier, installer, user or owner, or any state or local governmental agency or public district or any other officer or employee thereof. PERSON also means the United States or its agencies to the extent authorized by Federal law.

(38) RECLAIM means or is to reprocess refrigerant to a level equivalent to new product specifications in accordance with applicable requirements of the U.S. Environmental Protection Agency contained in Title 40, Code of Federal Regulations, Part 82, Subpart F, §82.152.

(39) RECOVER means or is to remove refrigerant in any condition from a system and to store it in an external container without necessarily testing or processing it in any way.

(40) RECYCLE means or is to extract refrigerant from an appliance and to clean the refrigerant for reuse by oil separation and single or multiple passes through moisture-absorption devices, such as replaceable core filter-driers which reduce moisture, acidity, and particulate matter, without meeting all of the requirements for reclamation.

(41) REFRIGERANT CIRCUIT means the parts of a refrigeration system that are normally connected to each other (or are separated by isolation valves) and are designed to contain a high global warming potential refrigerant. A single refrigerant circuit is defined by all piping and components that use refrigerant from a common reservoir of a high global warming potential refrigerant.

(42) REFRIGERANT DISTRIBUTOR OR WHOLESALER means or is a person to whom a product is delivered or sold for purposes of export, subsequent resale, or delivery to a certified technician, employer of a certified technician, appliance manufacturer, or another refrigerant distributor or wholesaler. Refrigerant distributor or wholesaler includes any person who imports refrigerant from outside of this state to distribute or sell refrigerant to a certified technician, employer of a certified technician, appliance manufacturer, or another refrigerant distributor or wholesaler, or who acts as an agent or broker in buying refrigerant.

(43) REFRIGERANT LEAK means or is any discharge of refrigerant into the atmosphere from a refrigeration system, refrigerant recovery or recycling equipment, refrigerant cylinder, or other container.

(44) REFRIGERANT LEAK DETECTION DEVICE means or is a device that can be calibrated to accurately detect and measure the ambient concentration of refrigerant at a minimum concentration level of 10 parts per million of vapor of a specific refrigerant or selection of refrigerants.

(45) REFRIGERATION SYSTEM means or is a stationary, non-residential equipment that is an industrial process refrigeration, a commercial refrigeration, or other refrigeration appliance with a single refrigerant circuit that requires more than 50 pounds of any combination of high global warming potential refrigerant to maintain normal operating characteristics and conditions. Refrigeration system does not include an air-conditioning appliance. A single refrigeration system is defined by a single refrigerant circuit.

(46) RESIDENTIAL means or is a residential dwelling containing four or fewer dwelling units on one lot or parcel.

(47) RETIRE means or is the permanent removal from service of a refrigeration system or component rendering it unfit for use by the current or any future owner or operator.

(48) RETROFIT means or is the replacement of the refrigerant used in a refrigeration system with a refrigerant approved under the SNAP program pursuant to Title 40 of the Code of Federal Regulation, Part 82, Subpart G, §82.170, or a refrigerant approved by the Executive Officer, and related refrigeration system changes required to maintain the refrigeration system operation and reliability following refrigerant replacement.

(49) SEASONAL ADJUSTMENT means or is the need to add refrigerant to a refrigeration system 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 after the initial installation of a refrigeration system or a repair of a refrigeration system requiring evacuation or partial evacuation of the refrigerant circuit.

(50) SEASONAL FACILITY means or is a facility where the purpose of the refrigeration system(s) at a facility ceases to be required during certain seasons of the year.

(51) STATIONARY means or is meeting at least one of the following conditions:

(A) Is installed in a building, structure, or facility.

(B) Is attached to a foundation, or if not so attached, will reside at the same location for more than 12 consecutive months.

(C) Is located at the same single location on a permanent basis (at least two consecutive years) and that operates at that single location at three months each year.

(52) SYSTEM IDENTIFICATION NUMBER means or is a unique identification number for each refrigeration system at a facility. It is comprised of the facility identification number followed by a hyphen, followed by a three digit number starting at 001 sequentially assigned to each unique refrigeration system at a facility. For example, if a facility has a facility identification number of ARB000001, then the system

identification number for the first refrigeration system would be ARB000001-001.

(53) SYSTEM MOTHBALLING means or is the intentional shutting down of a refrigeration system for a period of time greater than 60 days by the owners or operators of that facility, where the refrigerant has been evacuated from the refrigeration system or the affected component of the refrigeration system, at least to atmospheric pressure.

(54) TACTICAL SUPPORT EQUIPMENT means or is equipment that meets military specifications, owned by the U.S. Department of Defense, the U.S. military services, or its allies, and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(55) TOPPING OFF means or is adding refrigerant to a refrigeration system or appliance in order to bring the system to a full charge.

(d) Requirements

(1) Registration

(A) The owner or operator of a refrigeration system subject to this rule shall submit to the District, at start of operation and every year thereafter, a Registration Plan for the entire facility. Such plan shall contain the following information:

(i) facility name and address;

(ii) name and title of contact person;

(iii) type of business;

(iv) number of refrigeration systems in operation;

(v) manufacturer name, model and serial number for the refrigeration system;

(vi) type of refrigerant in each refrigeration system;

(vii) full charge of refrigerant in each refrigeration system, in pounds;

(viii) date of last annual audit or maintenance performed for each refrigeration system; and

(ix) amount of additional refrigerant charge every year, in pounds.

(B) The owner or operator of a refrigeration system shall comply with the provision in (d)(1)(A) until such time that registration of the refrigeration system with the California Air Resources Board (CARB) is required pursuant to the CARB Refrigeration Management Program registration schedule as follows:

(i) Refrigeration System with a Full Charge Greater Than or Equal to 2000 Pounds.

Beginning January 1, 2012, the owner or operator of such refrigeration system shall submit registration to CARB by providing the information specified in subparagraph (d)(1)(C). Refrigeration systems that begin operation before January 1, 2012 shall be registered with CARB Executive Officer on or before March 1, 2012. Refrigeration systems that begin operation on or after January 1, 2012, shall be registered with CARB Executive Officer by March 1 of the year following commencement of operation.

(ii) Refrigeration System with a Full Charge Greater Than or Equal to 200 Pounds but Less Than 2,000 Pounds.

Beginning January 1, 2014, the owner or operator of such refrigeration system shall submit registration to CARB by providing the information specified in subparagraph (d)(1)(C). Refrigeration systems that begin operation before January 1, 2014 shall be registered with the CARB Executive Officer on or before March 1, 2014. Refrigeration systems that begin operation on or after January 1, 2014, shall be registered with CARB Executive Officer by March 1 of the year following commencement of operation.

(iii) Refrigeration System with a Full Charge Greater Than 50 Pounds but Less Than 200 Pounds.

Beginning January 1, 2016, the owner or operator of such refrigeration system shall submit registration to CARB by providing the information specified in subparagraph (d)(1)(C). Refrigeration systems that begin operation before January 1, 2016 shall be registered with CARB Executive Officer on or before March 1, 2016. Refrigeration systems that begin operation on or after January 1, 2016, shall be registered with CARB Executive Officer by March 1 of the year following commencement of operation.

(C) A person submitting registration to CARB pursuant to the provisions of subparagraph (d)(1)(B) shall provide the following information:

(i) Facility Information

(I) Name of operator.

(II) Operator Federal Tax Identification Number.

(III) Facility North American Industry Classification System (NAICS) Business Type Code based on the 2007 NAICS United States structure.

(IV) Facility Standard Industrial Classification (SIC) Code.

(V) Name of facility, including a facility identifier such as store number, if applicable.

(VI) Facility mailing address including a street address, city, state, and zip code.

(VII) Facility physical location address including a street address, city, state, and zip code.

(VIII) Facility contact person name, phone number, and e-mail address.

(ii) Refrigeration System Information (provided for each refrigeration system)

(I) System identification number (assigned by the facility owner or operator).

(II) Equipment information such as equipment type, manufacturer, model or description, model year and serial number. The serial number(s) of the affected equipment or component must be recorded when present and accessible. When the affected equipment or component is part of an assembly without a serial number, or does not have an individual serial number, or is not accessible after assembly, the physical location of the affected equipment must be recorded in enough detail to permit positive identification.

(III) Physical location of the refrigeration through schematic or floor plan with equipment locations clearly noted.

(IV) Temperature classification (e.g. low temperature refrigeration system, medium temperature refrigeration system, or other);

(V) Full charge of the refrigeration system, in pounds.

(VI) Type of high global warming potential refrigerant(s) used.

(D) If there is a change of ownership of a facility that is required to be registered pursuant to subparagraph (d)(1)(B), the new owner or operator shall register the refrigeration system with CARB by March 1 of the calendar year after the change of ownership has occurred.

(E) Before any change of ownership, the owner or operator of a refrigeration system subject to subparagraph (d)(1)(B) shall ensure that the refrigeration system is free of refrigerant leaks through a leak inspection performed by a certified technician. In addition, a person selling a refrigeration system that is required to have been registered with CARB shall inform the buyer of the registration

requirements, and submit a change of ownership notification to the CARB Executive Officer. The change of ownership notification shall include the following information:

(i) Seller Information

(I) Facility identification number;

(II) Name of owner or operator; and

(III) Name of facility, including a facility identifier such as store number; and

(ii) Buyer Information

(I) Name of owner or operator;

(II) Name of facility, including a facility identifier such as store number;

(III) Facility mailing address including a street address, city, state, and zip code; and

(IV) Facility contact person including phone number and e-mail address.

(F) The owner or operator of a refrigeration system subject to this rule shall pay a registration fee for the entire facility as follows:

(i) Refrigeration systems that are required to be registered with the District pursuant to (d)(1)(A) shall pay a plan filing fee pursuant to Rule 306 – Plan Fees.

(ii) Refrigeration systems that are required to be registered with CARB pursuant to (d)(1)(B)(i) and (d)(1)(B)(ii) shall pay to CARB an initial implementation fee at time of registration and an annual implementation fee in accordance with the fee schedule established by CARB. If a facility has more than one refrigeration system, the amount of fee shall be based on the refrigeration system with the largest full charge that is operating at the facility.

(2) Leak Detection and Monitoring

(A) Prior to January 1, 2011, the owner or operator of a refrigeration system that operates or is intended to be operated year round shall conduct an annual audit of the refrigeration system to determine whether such system is operating pursuant to manufacturer's specifications and does not have refrigerant leaks. At a minimum, the annual audit shall require a leak inspection conducted by a certified technician.

(B) Beginning January 1, 2011, the owner or operator of a refrigeration system that operates or is intended to be operated year round shall comply with the following requirements:

(i) Refrigeration Systems with a Full Charge Greater Than or Equal to 2,000 Pounds.

(I) A monthly leak inspection of the refrigeration system shall be conducted if the refrigerant circuit is located entirely within an enclosed building or structure, or the compressor, evaporator, condenser, or any other component of the refrigeration system with a high potential for a refrigerant leak is located inside an enclosed building or structure. However, a monthly leak inspection is not required if the refrigeration system is equipped with an automatic leak detection system.

(II) A quarterly leak inspection of the refrigeration system shall be conducted if the refrigerant circuit is not located entirely within an enclosed building or structure and is not monitored for leaks using an automatic leak detection system.

(III) By January 1, 2012, an automatic leak detection system shall be installed for the refrigeration system if the refrigerant circuit is located entirely within an enclosed building or structure, or the compressor, evaporator, condenser, or any other component of the refrigeration system with a high potential for a

refrigerant leak is located inside an enclosed building or structure.

(ii) Refrigeration Systems with a Full Charge Greater Than or Equal to 200 Pounds but Less Than 2,000 Pounds.

A quarterly leak inspection shall be conducted for the refrigeration system. A leak inspection is not required if an automatic leak detection system is used to monitor the refrigeration system.

(iii) Refrigeration Systems with a Full Charge Greater Than 50 Pounds but Less Than 200 Pounds.

An annual leak inspection shall be conducted for the refrigeration system. A leak inspection is not required if an automatic leak detection system is used to monitor the refrigeration system.

(C) Beginning January 1, 2011, the owner or operator of a refrigeration system that does not operate or is not intended to be operated year round shall conduct a leak inspection within 30 days after starting each operation of the refrigeration system, and once every three months thereafter, until the refrigeration system is shut down. A leak inspection is not required after starting operation if there has been a leak inspection of the refrigeration system conducted within the preceding 90 days.

(D) Beginning January 1, 2011, the owner or operator of a refrigeration system subject to this rule shall conduct a leak inspection each time an additional refrigerant charge equal to or greater than 5 pounds or one percent of the refrigeration system full charge, whichever amount is greater, is added to such refrigeration system.

(E) All refrigerant leak inspections shall be conducted using one or more of the following methods:

(i) Refrigerant leak detection device used in accordance with the manufacturer's specifications; or

(ii) A bubble test; or

(iii) Observation of oil residue; or

(iv) An alternate method approved by the Executive Officer.

In addition, any time oil residue is observed indicating a refrigerant leak, a leak inspection shall be conducted using a leak detection device or a bubble test to confirm a refrigerant leak.

(F) The owner or operator of a refrigeration system equipped with an automatic leak detection system that directly detects the presence of high global warming potential refrigerant in the air shall comply with the following requirements:

(i) Sensors or intakes of the automatic leak detection system shall be placed in the proximity of the compressor, evaporator, condenser, and other areas with a high potential for a refrigerant leak.

(ii) An annual audit and calibration of the automatic leak detection system shall be conducted using the manufacturer's recommended procedures to ensure that the system accurately detects a concentration level of 10 parts per million of vapor of the specific refrigerant used in the refrigeration system, and alerts the operator when a refrigerant concentration of 100 parts per million of vapor of the specific refrigerant used in the refrigeration system is reached.

(G) The owner or operator of a refrigeration system equipped with an automatic leak detection system that automatically interprets measurements (e.g. temperature and pressure) within a refrigeration system to indicate a refrigerant leak shall annually audit and calibrate the system, so that it automatically alerts the operator when measurements indicate a loss of refrigerant of 50 pounds or 10 percent of the refrigeration system full charge, whichever is less.

(H) If an automatic leak detection system alerts the owner or operator of a refrigerant leak, the owner or operator shall ensure that a leak

inspection of the refrigeration system is conducted within 24 hours after the system alert.

(3) Leak Repair

(A) Any person who owns or operates a refrigeration system that has a refrigerant leak shall ensure that the leak is repaired no later than 14 calendar days after the leak has been discovered, except in situations when a longer time period is allowed as provided in subparagraphs (d)(3)(B) and (d)(3)(C). The owner or operator shall maintain a log of repair activities beginning at the time the leak is discovered and ending at the time when the leak has been repaired. The refrigeration system shall be verified by a certified technician to be leak free before any refrigerant is added to the system.

(B) The owner or operator of a refrigeration system has 45 days to repair a refrigerant leak if one or more of the following conditions exists:

(i) A certified technician is not available to complete the repair. A written record shall be kept to document that no certified technician is available within 14 days of the initial leak detection; or

(ii) The parts necessary to repair a refrigerant leak are unavailable within 14 days of the initial leak detection. A written statement verifying that the parts are unavailable from the refrigeration system or component manufacturer or distributor shall be obtained; or

(iii) The refrigerant leak repair requires an industrial process shutdown that results in a process temporarily ceasing to manufacture the intermediate or final product that is produced when the industrial process refrigeration appliance is in operation.

(C) The owner or operator of a refrigeration system has 120 days to repair a refrigerant leak if all of the following conditions exist:

(i) The facility owner or operator is an entity subject to Mandatory Greenhouse Gas Emissions Reporting requirements pursuant to section 95101 of the California Code of Regulations; and

(ii) The refrigeration system is an industrial process refrigeration appliance; and

(iii) The refrigerant leak repair requires an industrial process shutdown; and

(iv) Written records are maintained to document that all the conditions in clauses (d)(3)(C)(i) thru (d)(3)(C)(iii) are met.

(D) The owner or operator of a refrigeration system shall ensure that an initial verification test and a follow-up verification test, as defined in subdivision (c), are conducted by a certified technician upon completion of refrigerant repairs. For a refrigeration system that has been evacuated during the refrigerant repair leak, the follow-up verification shall be conducted when the system is operating at normal operating conditions. If the system was not evacuated during leak repair, the follow-up verification test requirement is satisfied once required changes are made to return the refrigeration system to normal operating conditions.

(E) If verification tests indicate that a refrigerant leak has not been successfully repaired within the allowable time period specified in subparagraphs (d)(3)(A), (d)(3)(B), or (d)(3)(C), and no exemption has been granted by the Executive Officer pursuant to paragraph (d)(5), then the owner or operator shall comply with the following applicable requirements:

(i) For refrigeration systems that fail to meet the 14-day leak repair allowance in subparagraph (d)(3)(A), the owner or operator shall successfully repair the refrigerant leak within 45 days of the initial refrigerant leak detection, or prepare a retrofit or retirement plan pursuant to paragraph (d)(4) within 60 days of the initial refrigerant leak detection.

(ii) For refrigeration systems that fail to meet the 45-day leak repair allowance in subparagraph (d)(3)(B), the owner or operator shall prepare a retrofit or retirement plan pursuant to paragraph (d)(4) within 60 days of the initial refrigerant leak detection.

(iii) For refrigeration systems that fail to meet the 120-day leak repair allowance in subparagraph (d)(3)(C), the owner or operator shall prepare a retrofit or retirement plan pursuant to paragraph (d)(4) within 135 days of the initial refrigerant leak detection.

(4) Retrofit or Retirement Plan

(A) The plan shall establish a schedule to retrofit or retire a leaking refrigeration system no later than six months after the initial detection of the refrigerant leak. All work shall be completed during this six-month period.

(B) A retrofit or retirement plan shall include the following information:

(i) The system identification number of the refrigeration system being retired or retrofitted;

(ii) Equipment type, manufacturer, model number or description;

(iii) Physical location of the refrigeration system through schematic or floor plan with locations clearly noted;

(iv) Temperature classification of the refrigeration system;

(v) Full charge of the refrigeration system including the type of high global warming potential refrigerant(s) used;

(vi) A plan to dispose of the retired refrigeration system if the refrigeration system is to be retired and replaced;

(vii) A timetable which includes, at a minimum, the start date and completion date of installation, construction, or retrofit of the refrigeration system; and

(viii) A signature by a representative of the facility, including the date signed.

(5) Approval of Exemptions

(A) The owner or operator of a refrigeration system may submit a request to the Executive Officer for an exemption from the requirements of paragraphs (d)(3) and (d)(4) provided that the owner or operator demonstrates that one or more of the criteria below have been satisfied:

(i) Emissions Life Cycle Exemption

The Executive Officer may allow the continuation of a refrigerant leak for up to three years if the Executive Officer determines that the applicant has provided clear and convincing documentation that the refrigerant leak cannot be repaired, and that allowing the refrigerant leak to continue will result in less combined direct and indirect emissions than replacing the leaking refrigeration system. The documentation shall include information quantifying the lifecycle direct and indirect emissions, including energy use, and must include a calculation of these emissions based on the average lifetime of the refrigeration system or facility. The applicant shall also provide a mitigation plan that includes a list of proposed actions to minimize emissions. The plan shall include an analysis of options to minimize usage, reduce leaks or venting, and recycle or destroy high global warming potential refrigerant.

(ii) Economic Hardship Exemption

The Executive Officer may allow the continuation of a refrigerant leak for a specified time period of no longer than three years if the Executive Officer determines that the applicant has provided clear and convincing documentation that all of the following criteria are met:

(I) Compliance would result in extraordinary economic hardship, such as closure of the entire facility or a

large portion of the facility, or loss of a large portion of the revenue from the facility; and

(II) The applicant has prepared a compliance report that can be implemented and can achieve compliance as expeditiously as possible. The compliance report shall reasonably detail when compliance will be achieved and the method by which compliance will be achieved.

(iii) Natural Disaster Exemption

The Executive Officer may allow the continuation of a refrigerant leak for a specified time period of no longer than three years if the Executive Officer determines that the applicant has provided clear and convincing documentation that failure to repair the refrigerant leak was due to a natural disaster such as an earthquake or flood, an act of war or an act by a public enemy, or a civil disorder or riot.

(B) Any exemption granted may be extended for one or more additional periods of up to three years if the Executive Officer determines that the demonstrations made pursuant to clauses (d)(5)(A)(i), (d)(5)(A)(ii), or (d)(5)(A)(iii) remains valid.

(C) The owner or operator requesting an exemption as provided in subparagraph (d)(5)(A) shall submit a written application demonstrating that one or more of the exemption criteria have been met. Within 30 days of receipt of the exemption application, the Executive Officer shall determine whether the application is complete, and shall notify the applicant of this determination. If the exemption application is determined to be incomplete, the Executive Officer shall notify the applicant and specify the information needed to make the application complete. Within 90 days after an application is determined to be complete, the Executive Officer shall determine whether and under what conditions an exemption will be granted. The applicant and the Executive Officer may agree to a longer time period for the Executive Officer to take action on the exemption application.

(D) The exemption shall cease to be effective upon the failure of the person to whom the exemption was granted to comply with any term or condition of the exemption.

(E) If the Executive Officer determines that an exemption no longer meets the criteria specified in subparagraph (d)(5)(A), the Executive Officer may revoke the exemption or modify it as necessary to insure that the exemption continues to meet the criteria.

(F) If an application for an exemption is denied or an existing exemption is revoked, the owner or operator of a refrigeration system shall comply with the following:

(i) From the time a notice of denial or revocation is issued, the refrigerant leak shall be repaired within the allowable repair period in paragraph (d)(3); or

(ii) Within 30 days of a notice of such denial or revocation, the owner or operator of the facility shall prepare a retrofit or retirement plan pursuant to paragraph (d)(4). The plan shall establish a schedule to retrofit or retire a leaking refrigeration system no later than six months after a notice of denial or revocation, and all work shall be completed during this six-month period.

(e) Required Service Practices and Prohibitions

(1) No person shall install, maintain, service, repair, relocate, or dispose of any refrigeration system, regardless of charge size, that may cause the release of high global warming potential refrigerants unless that person meets all of the following applicable requirements:

(A) The person has a current, valid, and applicable U.S. Environmental Protection Agency technician certificate issued in accordance with Title 40 of the Code of Federal Regulations, Part 82, Subpart F, §82.161.

(B) The certified technician conducting leak repair holds a current and active California contractor's license in the C-38-Refrigeration Contractor licensing classification, or is an employee of a

contractor with the same qualifications. If the refrigeration system requiring service is also used in an air conditioning application, the refrigerant leak may be repaired by a certified technician holding a current and active California contractor's license in the C-20-Warm Air Heating, Ventilating and Refrigeration Contractor licensing classification, or by an employee of a contractor with the same qualifications.

(C) The person recovers, recycles, or reclaims the refrigerant, using certified refrigerant recovery or recycling equipment for that type of refrigeration system, and employs procedures for which the certified refrigerant recovery or recycling equipment was approved by the U.S. Environmental Protection Agency. Attempts to recover refrigerant shall be made even if the person believes that all refrigerant has been removed or has previously leaked from the refrigeration system. Refrigerant may be returned to the refrigeration system from which it is recovered, or to another refrigeration system owned by the same person, without being recycled or reclaimed.

(D) The refrigerant added to a refrigeration system during manufacture or service is:

(i) A Class I or Class II substance, as identified by section 602 of the federal Clean Air Act; or

(ii) An alternative that has been found acceptable under the SNAP program pursuant to Title 40 of the Code of Federal Regulations, Part 82, Subpart G, §82.170; or

(iii) Approved by the Executive Officer for the specific refrigeration end-use in which it is being employed.

(E) No refrigerant charge is added to any refrigeration system known to have a refrigerant leak, except that it is permissible to add additional refrigerant charge required to maintain operations during leak repair.

(F) Job site evacuation of refrigerants during recycling, recovering, reclaiming, or disposing is done in accordance with Title 40 of the

Code of Federal Regulations, Part 82, Subpart F, §82.156. De minimis refrigerant releases associated with a good faith attempt to recycle or recover refrigerants are allowed. Refrigerant releases shall be considered de minimis only if they occur when the required practices or requirements contained in Part 82, Subpart F, §§82.156 and 82.158, and Part 82, Subpart B of Title 40 of the Code of Federal Regulation are followed.

(2) Any person who owns or operates a certified refrigerant recovery or recycling equipment shall:

(A) Ensure the equipment has been tested for and been determined to have no leaks within the past six months. Leaks in recycling, recovering, or charging equipment shall be repaired within 2 working days after the leak is first detected, unless the equipment does not leak if its use is discontinued, and use is discontinued.

(B) Not alter the design of a certified recovery and recycling equipment in a manner that would affect the equipment's ability to meet the certification standards set by the U.S. Environmental Protection Agency without resubmitting the altered design to an approved equipment testing facility for certification testing. Until such altered equipment is tested by a U.S. Environmental Protection Agency approved equipment testing facility, and is shown to meet the certification standards set forth by the U.S. Environmental Protection Agency, the altered equipment shall not be considered approved, and shall not be used.

(C) Use the refrigerant recovery and recycling equipment used as specified by the certified refrigerant recovery or recycling equipment manufacturer, unless the manufacturer's specifications are in conflict with the procedures approved by the U.S. Environmental Protection Agency for the certified refrigerant recovery or recycling equipment.

(D) Provide proof of certification for the recovery and recycling equipment from the U.S. Environmental Protection Agency to the Executive Officer upon request.

(3) No person shall sell, supply, offer for sale or distribute any high global warming potential refrigerant for use as a refrigerant unless:

(A) The buyer is a certified technician; or

(B) The buyer is an authorized representative of a person employing at least one certified technician, and the buyer has provided evidence that at least one technician is properly certified; or

(C) The refrigerant is sold only for eventual resale to a certified technician, an employer of a certified technician, or an refrigeration system manufacturer; or the refrigerant is being sent for reclamation; or

(D) The refrigerant is contained in a refrigeration appliance.

(4) No person shall sell, supply, offer for sale or distribute any high global warming potential refrigerant for use as a refrigerant unless such refrigerant is a Class I or Class II substance identified by section 602 of the federal Clean Air Act; or is an alternative that has been found acceptable under the SNAP program pursuant to Title 40 of the Code of Federal Regulations, Part 82, Subpart G, §82.170; or is approved by the Executive Officer for the specific refrigeration end-use in which it is being employed.

(5) No person shall sell, offer for sale, supply, or distribute, any high-global warming refrigerant consisting wholly or in part of used refrigerant unless the refrigerant has been reclaimed by a certified reclaimer.

(6) No person shall distribute or sell a refrigerant recovery or recycling equipment unless such equipment meets the levels of evacuation to be achieved by recovery or recycling equipment as specified in Title 40 of the Code of Federal Regulations, Part 82, §82.158.

(7) No person reclaiming refrigerants shall release into the atmosphere more than 1.5 percent of the refrigerant received for reclamation.

(8) No person shall recycle or dispose of a non-refillable cylinder unless the refrigerant from such cylinder has been evacuated to a vacuum of 15 inches of mercury, relative to standard atmospheric pressure of 29.9 inches of mercury.

(9) No person shall refill a non-refillable cylinder or use it as a temporary receiver during service.

(10) No person shall repair or modify a non-refillable cylinder in any way that allows the non-refillable cylinder to be refilled.

(f) Reporting

(1) A person operating a refrigeration system with a full charge greater than or equal to 200 pounds of a high global warming potential refrigerant shall submit annually to CARB a Facility Stationary Refrigeration Report (Annual Report) that contains the information specified in subparagraphs (f)(2)(A) and (f)(2)(B). Each Annual Report shall provide this information for the previous calendar year and shall be submitted as follows:

(A) By March 1, 2012, the owner or operator of a facility with a refrigeration system that begins operation before January 1, 2012, and with a full charge greater than or equal to 2,000 pounds of a high global warming potential refrigerant, shall submit an Annual Report for the 2011 calendar year. By March 1, 2013, and each calendar year thereafter, the owner or operator shall submit an Annual Report providing information for the previous calendar year.

(B) The owner or operator of a facility with a refrigeration system that begins operation on or after January 1, 2012, and with a full charge greater than or equal to 2,000 pounds of a high global warming potential refrigerant shall submit an Annual Report for the previous calendar year by March 1 of the year following commencement of operation. Subsequent Annual Reports for the previous calendar year shall be submitted by March 1 of each year thereafter.

(C) By March 1, 2014, the owner or operator of a facility with a refrigeration system that begins operation before January 1, 2014, and with a full charge greater than or equal to 200 pounds but less than 2,000 pounds of a high global warming potential refrigerant, shall submit an Annual Report for the 2013 calendar year. By March 1, 2015, and each calendar year thereafter, the owner or

operator shall submit an Annual Report providing information for the previous calendar year.

(D) The owner or operator of a facility with a refrigeration system that begins operation on or after January 1, 2014, and with a full charge greater than or equal to 200 pounds but less than 2,000 pounds of a high global warming potential refrigerant, shall submit an Annual Report for the previous calendar year by March 1 of the year following commencement of operation. Subsequent Annual Reports for the previous calendar year shall be submitted by March 1 of each year thereafter.

(2) The Annual Report required in paragraph (f)(1) shall include the following information:

(A) Refrigeration System

The following data shall be provided for each refrigeration system:

(i) System identification number;

(ii) Equipment type;

(iii) Equipment manufacturer;

(iv) Equipment model or description, model year, and serial number. The serial number(s) of the affected equipment or component must be recorded when present and accessible. When the affected equipment or component is part of an assembly without a serial number, or does not have an individual serial number, or is not accessible after assembly, the physical location of the affected equipment must be recorded in enough detail to permit positive identification;

(v) Physical location of a refrigeration system through schematic or floor plan with equipment locations clearly noted;

(vi) Temperature classification;

(vii) Full charge of the refrigeration system, in pounds;

(viii) Type of high global warming potential refrigerant used; and

(ix) Date of initial installation.

(B) Refrigeration System Service and Leak Repair

The following information shall be provided for each automatic leak detection system audit, leak inspection, and refrigeration system service or refrigerant leak repair that required an additional refrigerant charge of five pounds or more, or an additional refrigerant charge equal to or greater than one percent of the full charge, whichever amount is greater:

(i) Date leak detected, if applicable;

(ii) Date of service provided or leak repair completed;

(iii) Cause of refrigerant leak, if applicable;

(iv) Description of service provided or leak repair completed;

(v) Date(s) of initial verification test(s), if applicable;

(vi) Date(s) of follow-up verification test(s), if applicable;

(vii) Total additional refrigerant charge (in pounds) of each type of high global warming potential refrigerant, if applicable;

(viii) Purpose for additional refrigerant charge (leak repair, topping off, initial refrigerant charge, or seasonal adjustment), if applicable;

(ix) Name of certified technician completing leak repair, if applicable; and

(x) The certified technician's identification number and certification type issued by an approved technician certification program pursuant to Title 40 of the Code of Federal Regulation, Part 82, §82.161, if applicable.

(C) Refrigerant Purchases and Use Information

The following information shall be provided on refrigerant purchase and use:

(i) The total weight in pounds of each type of high global warming potential refrigerant that was purchased during the calendar year;

(ii) The total weight in pounds of each type of high global warming potential refrigerant that was charged into a refrigeration system during the calendar year;

(iii) The total weight in pounds of each type of high global warming potential refrigerant that was recovered from a refrigeration system during the calendar year;

(iv) The total weight in pounds of each type of high global warming potential refrigerant that was stored in inventory at the facility, or stored at a different location for use by the facility, on the last day of the calendar year; and

(v) The total weight in pounds of high global warming potential refrigerant that was shipped by the owner or operator for reclamation and destruction during the calendar year.

(3) A person operating a refrigeration system with a full charge greater than 50 pounds but less than 200 pounds of a high global warming potential refrigerant is not required to submit annual reports. However, the owner or operator of such refrigeration system shall report the information specified in paragraph (f)(2) within 60 days of receipt of a request from CARB or the District.

(4) By March 1, 2012, and every year thereafter, a refrigerant distributor or wholesaler shall submit an annual report to CARB providing information for the previous calendar year. The annual report shall cover all California facilities under the operational control of the refrigerant distributor or wholesaler, and shall include the following information:

(A) Name and mailing address of the refrigerant distributor or wholesaler;

(B) Contact person name, phone number, and e-mail address for the refrigerant distributor or wholesaler;

(C) The total statewide annual aggregated weight in pounds of each type of high global warming potential refrigerant that was purchased or received for the purpose of subsequent resale or delivery for any purpose other than reclamation or destruction;

(G) The total statewide annual aggregated weight in pounds of each type of high global warming potential refrigerant that was sold or distributed, excluding all sales to facilities outside of California or to a refrigerant distributor or wholesaler for eventual resale;

(H) The total statewide annual aggregated weight in pounds of high global warming potential refrigerant that was shipped to a certified reclaimer;

(I) Name of all refrigerant distributor or wholesaler facilities under the operational control of the refrigerant distributor or wholesaler;

(J) Address of each refrigerant distributor or wholesaler facility under the operational control of the refrigerant distributor or wholesaler; and

(K) Contact person name, phone number, and e-mail address for each refrigerant distributor or wholesaler facility under the operational control of the refrigerant distributor or wholesaler.

(5) By March 1, 2012, and every year thereafter, a person reclaiming any high global warming potential refrigerant in California shall submit an annual report to CARB providing information for the previous calendar year. The annual report shall cover all California facilities under the operational control of the certified reclaimer, and shall include the following information:

(A) Name and mailing address of the certified reclaimer;

(B) Contact person name, phone number, and e-mail address for the certified reclaimer;

(C) The total statewide annual aggregated weight in pounds of high global warming potential refrigerant that was received by the certified reclaimer for reclamation or destruction;

(D) The total statewide annual aggregated weight in pounds of each type of high global warming potential refrigerant that was reclaimed in California;

(E) The total statewide annual aggregated weight in pounds of high global warming potential refrigerant that was shipped out of California for reclamation;

(F) The total statewide annual aggregated weight in pounds of high global warming potential refrigerant that was destroyed or shipped out of California for destruction;

(G) Name and address of all certified reclaimer facilities under the operational control of the certified reclaimer; and

(H) Contact person name, phone number, and e-mail address for each certified reclaimer facility under the operational control of the certified reclaimer.

(g) Recordkeeping

(1) Any person owning or operating any refrigeration system subject to this rule shall maintain records for each refrigeration system for a minimum of five years. The following records shall be kept at the facility where the refrigeration system is in operation, and shall be made available to the Executive Officer upon request:

(A) All registration information for the refrigeration systems;

(B) Documentation of all leak detection systems, leak inspections, annual audit and calibration of automatic leak detection system;

(C) Records of refrigeration system service and leak repairs, including documentation of any conditions allowing leak repair of more than 14 days after leak detection pursuant to subparagraphs (d)(3)(B) and (d)(3)(C);

(D) Any retrofit or retirement plans, or records on application for exemption submitted pursuant to paragraph (d)(4), if applicable;

(E) Name(s) of the person(s) who completed the inspection and repair, including the name, address, and telephone number of the company the person is representing, and technician certificate number;

(F) A log of the quantity of each additional high global warming refrigerant charged to the refrigeration system and the date of each charge;

(G) The quantity (in pounds) of high-global warming refrigerants purchased or used in the District in a calendar year, including invoices of all refrigerant purchases;

(H) Annual Reports submitted pursuant to paragraph (f)(1);

(I) Records of all shipments of refrigerants for reclamation or destruction, which include the following information:

(i) Name and address of refrigerant shipment destination;

(ii) Weight in pounds of refrigerant shipped;

(iii) Date of shipment; and

(iv) Purpose of shipment, e.g. reclamation, destruction, etc.

(J) Records of all refrigeration systems component data, measurements, calculations and assumptions used to determine full charge.

(2) A refrigerant distributor, wholesaler, or certified reclaimer shall maintain records for a minimum of five years. The following records shall be kept at the facility of each distributor, wholesaler, or certified reclaimer, and shall be made available to the Executive Officer upon request, as follows:

(A) Annual reports submitted pursuant to paragraphs (f)(4) and (f)(5);

(B) Invoices of all high-global warming refrigerants received through sale or transfer and all high-global warming refrigerants distributed through sale or transfer. These invoices must indicate the name of the purchaser, the date of sale, and the quantity and the type of high-global warming refrigerant purchased, sold, or transferred;

(C) Documents required pursuant to subparagraph (e)(3)(B); and

(D) Records of all shipments of refrigerant received for reclamation.

(3) Any person owning and operating a certified refrigerant recovery or recycling equipment shall maintain records to determine compliance with the requirements of paragraph (e)(2), which includes the following information:

(A) Date of semi-annual inspection;

(B) All work completed for each recycling or recovery system to prevent or repair leaks, including results of leak testing and leak determinations; and

(C) Name(s) of the person(s) who completed the inspection and repair, including the name, address, and telephone number of the company the person is representing.

(h) Exemption

(1) The provisions of this rule do not apply to tactical support equipment.

(2) An owner or operator shall not pay fees as required in clause (d)(1)(F)(ii) for any calendar year if during the previous calendar year all of the refrigeration systems at the facility have been maintained using the following advanced strategies and practices to reduce refrigerant charges and emissions of ozone-depleting substances and greenhouse gases:

(A) The facility uses only refrigerants with zero ozone-depleting potential; and

(B) The facility uses only refrigerants found acceptable by the U.S EPA SNAP program pursuant to Title 40 of the Code of Federal Regulation, Part 82, Subpart G, §82.170 for the specific end use; and

(C) The facility achieves an average hydrofluorocarbon full charge equal to or less than 1.25 lbs. of refrigerant per 1000 Btu per hour total evaporator cooling load; and

(D) If the facility is not newly constructed, the facility achieves a facility-wide annual refrigerant leak rate, as defined in Title 40 of the Code of Federal Regulation, Part 82, §82.152, of 10% or less; and

(E) The owner or operator swears under penalty of perjury that the criteria specified in subparagraphs (h)(2)(A) thru (h)(2)(D) have been met.

(2) The requirements in paragraphs (d)(3) and (d)(4) shall not apply to the following conditions:

(A) During the time the refrigeration system is undergoing or is in system mothballing, as defined in subdivision (c), and until the refrigeration system resumes operation at a facility; or

(B) The owner or operator of a refrigeration system has received an exemption from the Executive Officer pursuant to paragraph (d)(5); or

(C) The owner or operator of a refrigeration system has submitted a request for an exemption and until a final determination is made by the Executive Officer pursuant to paragraph (d)(5).

Written records must be kept pursuant to subdivision (g) to document that the owner or the operator has requested or received an exemption.

(3) The contractor's license requirements in subparagraph (e)(1)(B) shall not apply if one or more conditions apply:

(A) The refrigeration system service or refrigerant leak repair is performed by the facility owner or operator or its employees with wages as sole compensation; or

(B) The refrigeration system service or refrigerant leak repair is performed by the facility owner or operator through one undertaking or by one or more contracts, and the aggregate contract price for labor, materials, and all other items is less than five hundred dollars ($500); or

(C) The refrigeration system service or refrigerant leak repair is performed pursuant to a contract entered into before January 1, 2011 by any political subdivision of the United States government, or the State of California, or by any incorporated town, city, county, irrigation district, reclamation district, or other municipal or political corporation.

(i) Violations

(1) Each day or portion thereof that any leak inspection or leak repair is not completed after the date such leak inspection or leak repair is required to be completed, or each day or portion thereof that any registration, report, or plan required by this rule remains unsubmitted, is submitted late, or

contains incomplete or inaccurate information, shall constitute a single, separate violation of this rule.

(2) Failure to pay the full amount of any fee required by this rule shall constitute a single, separate rule violation for each day or portion thereof that the fee has not been paid after the date the fee is due.

(j) Severability

If any provision of this rule is held by judicial order to be invalid, or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances. In the event any of the exceptions to this rule is held by judicial order to be invalid, the persons or circumstances covered by the exception shall instead be required to comply with the remainder of this rule.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

Table B-1
Leak Repair Excess Emissions from Extending the Existing Rule 14-Day Time Period to 45- and 120-Day Time Periods

EQUIPMENT CATEGORY	2020 No. of Systems	Avg Charge lbs	% ODS	Annual Leak Rate %	ODS Leaked lbs/yr	Avg. GWP of ODS Refrigerant	ODS Emissions $MTCO_2E/yr$	ODS Emissions MTCO2E/day	ODS Excess Emissions due to 45/120-day $MTCO_2E/yr$
PAR 1415.1 - REFRIGERATION SYSTEMS									
Centralized System - Large	855	2,486	0.422	10.0%	89,695	1,500	61,082	167	104
Centralized System - Medium	17,812	704	0.422	10.0%	529,174	1,500	360,368	987	612
Cold Storage - Large	760	7,546	0.652	10.0%	373,910	2,020	342,905	939	582
Cold Storage - Medium	2,137	565	0.652	10.0%	78,739	2,020	72,210	198	123
Process Cooling - Large	323	3,640	0.618	6.8%	49,083	2,669	59,476	163	4,318
Refrig: Cond. Units - Small	36,814	122	0.325	5.0%	72,984	1,944	64,414	176	109
Total Refrigeration Systems	**58,701**				**1,193,585**			**2,631**	**5,849**
PAR 1415 - AIR CONDITIONING SYSTEMS									
Centrifugal Chiller - Large	2,366	3,978	0.843	2.4%	191,787	1,550	134,960	370	229
Centrifugal Chiller - Medium	747	1,007	0.843	1.4%	9,031	1,550	6,355	17	11
Packaged Chiller - Medium	4,669	526	0.843	3.5%	72,462	1,550	50,991	140	87
Unitary A/C - Small	37,631	100	0.784	5.0%	147,513	1,500	100,457	275	171
Total Air Conditioning Systems	**45,413**							**802**	**497**
Total All Systems	**104,114**							**3,433**	**6,346**

Table B-1 (concluded)
Leak Repair Excess Emissions from Extending the Existing Rule 14-Day Time Period to 45- and 120-Day Time Periods

Notes:
No. of Systems = number of refrigeration systems for the category
Avg Charge = average number of pounds of refrigerant for a given equipment category
Percent ODS = ODS portion of total charge
Annual Leak Rate = average annual leak rate expected from implementing best management practices (target leak rate)
ODS Leaked = amount of ODS refrigerant that leaked during the year in lbs/yr = (No. of Systems x Ave. Charge x % ODS x Annual Leak Rate)
Ave. GWP of Refrigerant = average GWP of refrigerants used in refrigeration systems for each category
ODS Emissions MTCO2E/yr (metric tons CO2Equivalent/yr)= ODS Leaked (lbs/yr) x Ave. GWP of Refrigerant x 0.000454 MT/lb)
ODS Emissions MTCO2E/day = ODS Emissions MTCO2E/yr divided by 365 days/yr
ODS Emissions due to 45/120-day Repair (MTCO2E/yr) = ODS Emissions MTCO2E/day x No. of Additional Repair Days x Est. % of Facilities Availing of Extension

Assumptions:
Centralized systems, cold storage, and condensing units: 31 additional repair days (45 days - 14 days) and two percent of facilities availing of extension
Process Cooling: 106 additional repair days (120 days - 14 days) and 25 percent of facilities availing of extension

Table B-2
Leak Repair Excess Emissions from Extending the Existing Rule 14-Day Time Period for Exemptions

EQUIPMENT CATEGORY	2020 No. of Systems	ODS Emissions MTCO2E/day	ODS Excess Emissions due to Three-Year Repair MTCO2E/yr	ODS Excess Emissions due to Three-Year Repair per Facility MTCO2E/yr	ODS Excess Emissions due to Three-Year Repair per Facility lb CO2E/yr	ODS Excess Emissions due to Three-Year Repair per Facility lb CO2E/day
Centralized System - Large	855	167	294	76	167,310	477
Centralized System - Medium	17,812	987	1,733	21	47,380	135
Cold Storage - Large	760	939	1,649	479	1,056,657	3,010
Cold Storage - Medium	2,137	198	347	36	79,116	225
Process Cooling - Large	323	163	286	196	431,232	1,229
Refrig: Cond. Units - Small	36,814	176	310	2	4,098	12
Total Refrigeration Systems		**2,631**	4,618			

Assumes that one of 200 facilities would require an exemption

Table B-3
Leak Repair Excess Emissions from Extending the Existing Rule 14-Day Time Period to a 45-Days Time Period

Equipment Category	2020 No. of Systems	ODS Emissions $MTCO_2E$/day	ODS Excess Emissions due to 45-day Repair $MTCO_2E$/year	ODS Excess Emissions due to 45-day Repair lb CO_2E/year	ODS Excess Emissions due to 45-day Repair lb CO_2E/day
Refrigeration Condensing Units	36,814	176	109	7.2	0.2
Unitary Air Conditioning	37,631	275	171	11.0	0.4
Total			**280**	**18.3**	**0.6**

Table B-4A
Safety Indicators for Common Chiller Refrigerants

Parameter	R-11	R-123	R-12	R-134a	R-22
Acute (short term) toxicity LC50, 4 hr rat (ppm)	26,200	32,000	760,000	>500,000	220,000
Cardiac sensitization, dog (ppm)	5,000	20,000	50,000	75,000	50,000
Anesthetic effect (ppm)	10,000	5,000	>200,000	>200,000	200,000
NIOSH IDLH (ppm)	10,000	4,000	50,000	50,000	50,000
Short-term exposure limit (ppm)	1,000	1,000	50,000	75,000	50,000
Subchronic toxicity NOEL, rat (ppm)	10,000	1,000	10,000	50,000	10,000
Mutagenicity or Carcinogicity					
Ames assay	negative	negative	negative	negative	negative
Mouse micronucleus assay	negative	negative	negative	negative	negative
Carcinogenic	no	no	no	no	weakly
Teratogenicity rats or rabbits	none	none	none	none	none
Chronic (long term) toxicity					
Occupational exposure limit (ppm)	C1000 (PEL, TLV-C)	10-30 (manufacturer)	1,000 (PEL, TLV-TWA)	1,000 (manufacturer)	1,000 (PEL, TLV-TWA)
Flammability					
LFL-UFL (%vol in air)	none	none	none	none	none
Heat of combustion (MJ/kg)	0.9	2.1	-0.8	4.2	2.2
ANSI / ASHRAE 34 Safety Classification	A1	B1	A1	A1	A1

Source: http://www.epa.gov/ozone/snap/refrigerants/safety.html

Table B-4B
Safety Indicators for Additional Refrigerants Listed in the CARB FSOR

	R-404A			R-410A		R-407C		
Parameter	**R-22**	**R-125**	**R-290**	**R23**	**R-125**	**R-32**	**R-125**	**R-134a**
Acute (short term) toxicity LC50, 4 hr rat (ppm)	220,000	800,000		520,000	100,000	520,000	800,000	>500,000
Cardiac sensitization, dog (ppm)	50,000	75,000					75,000	75,000
Anesthetic effect (ppm)	200,000							>200,000
NIOSH IDLH (ppm)	50,000							50,000
Short-term exposure limit (ppm)	50,000							75,000
Subchronic toxicity NOEL, rat (ppm)	10,000	50,000		50,000	50,000	50,000	50,000	50,000
Mutagenicity or Carcinogicity								
Ames assay	negative							negative
Mouse micronucleus assay	negative							negative
Carcinogenic	weakly	none				none	none	no
Teratogenicity rats or rabbits	none							none
Chronic (long term) toxicity								
Occupational exposure limit (ppm)	1,000 (PEL, TLV-TWA)	1,000 ppm TWA (8hr)	1,000 ppm TWA (8h)	none	1,000 ppm TWA (8hr)	1,000 ppm TWA (8hr)	1,000 ppm TWA (8hr)	1,000 (manufacturer)
Flammability								
LFL-UFL (%vol in air)	none	none	none	none		none		none
Heat of combustion (MJ/kg)	2.2							4.2
ANSI / ASHRAE 34 Safety Classification	A1			A1		A1		

R-22 and R-134a values from http://www.epa.gov/ozone/snap/refrigerants/safety.html
HCHC-22 data from EPA, HFC-125 and R-290 data from http://www.refrigerants.com/MSDS/r402A.pdf
http://www.refrigerants.com/msds/r407c.pdf
HFC 134a from EPA, R32 and HCH 125 from http://www.refrigerants.com/MSDS/r410A.pdf

Table B-5
Average Annual Repair Cost of Refrigerant Leak

Refrigeration System Size	Annual Repair Cost (Parts, Labor, Refrigerant Recovery)	Average Refrigerant Charge (lbs)	Average Annual Leak (lbs)	Cost of Replacing Refrigerant (@$11/lb)	Total Annual Cost (Repair plus Refrigerant Replacement)
Small	$900	122	18 (14%)	$198	$1,098
Medium	$1,550	689	119 (17%)	$1,309	$2,859
Large	$2,450	4,663	1,090 (23%)	$11,990	$14,440

Source: Appendix C - Economic Impact Estimates: Refrigerant Management Program, October 23, 2009

- Most leaks are relatively small and slowly reduce the amount of refrigerant available to the refrigeration system
- Refrigerant loss is one of the most expensive types of maintenance problem in a refrigeration system; average cost of refrigerant replacement is about $11 per pound.
- Costs of refrigerants are expected to rise as ODS refrigerants (CFC and HCFC) are phased out. Future legislation may also restrict production and import of ODS replacement refrigerants (HFCs).
- Early leak detection would mean less refrigerant required to bring system back to normal levels; thus reducing refrigerant replacement cost
- According to several refrigeration service contractors, most leaks are fixed within a short period of time (one-three days). About half the time refrigeration leaks are repaired on the same day contractors visit the facility. A second trip is necessary when replacement parts are not readily available during the first visit. In addition, most contractors talked to indicated that they have not had leak repairs exceed 14-days.
- On very few occasions, leak repair may take four to six weeks to complete when a major component (e.g., evaporator) has to be ordered from a manufacturer located outside the United States. One contractor recalled that only once in his 20 years of experience where leak repair exceeded 14 days. He indicated that a very conservative estimate of this situation happening may be anywhere from 1 to 2 for every 100 customers, although it may even be lower. Further, contractors I consulted did not service a facility that would not authorize the repair of a leak because they are unable to pay for the cost of repair.
- CARB provided a summary of leak repairs performed by a large supermarket chain during 2005-2007. Repair logs showed no replacement of a major component such as evaporator, condenser, or compressor. Rather, the report contains common sources of leaks from non-major components of the refrigeration system. The following are the more common leaks reported:
    - Evaporator coil – one of the main sources of leaks reported. A faulty evaporator coil most likely is caused by a leaking capillary tube. These capillary tubes are very small copper tubes and because of vibration of the system, tend to rub against each other causing a hole in the capillary tube. The leaking tube is likely to be repaired immediately by soldering.

- Refrigerant line – Leaks could come from the liquid line, suction line, or discharge line. These lines have flare connections that are susceptible to refrigerant leakage. Flare connections can easily be repaired but other times the flare fitting and connection have to be replaced to prevent future leaks. Normally, parts are readily available and repair can be made immediately.