VARIANCE APPLICATION TO THE CALIFORNIA AIR RESOURCES BOARD

Respectfully submitted by nVent

June 17, 2024

REDACTED VERSION

317-688-0151Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and Other End-Uses.

Application for a Variance from the requirements of California Code of Regulations, Title 17, sections 95374 and 95375.

A. Name of Applicant: nVent Electric, PLC (nVent)

Ownership Status: Publicly held corporation

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B. Description of Business

nVent designs, manufactures, markets, installs, and services high-performance products and solutions that help build a more sustainable and electrified world. This includes industrial air conditioning equipment used primarily to protect critical electronic equipment, communications, control, and power equipment.

nVent products help drive energy efficiency and cooling innovation in data centers, enhance critical industrial resiliency, and help protect power utilities and renewable energy facilities. With decades of industry expertise, nVent is equipped to meet the demands of a more electrified world and build a more sustainable future.

Trends such as grid modernization, renewable energy infrastructure, electric vehicles (EVs) and industrial automation are changing the landscape for many critical industries. nVent is committed to developing sustainable products by focusing on developing solutions made with eco-friendly materials and eco-friendly designs that support end user safety. This focus helps nVent develop solutions for our customers that improve energy efficiency, add resiliency and protection to

critical systems, improve productivity, expand lifespan and serviceability, improve end user safety, and support their overall sustainability goals.

- nVent's sustainability highlights from 2023 include: Reducing total greenhouse gas emissions by 9%, while increasing renewable energy consumption to 15% with a goal of >25% renewable energy use and 50% GHG emission reduction by 2030
- Reducing water consumption by 9% through focused responsible water management, with a goal of 25% reduction by 2030
- Utilizing LED lighting in 89% of manufacturing and distribution facilities across the globe
- Committing to eliminate 100% of single-use plastics from all product packaging by 2030, based on outbound products from nVent facilities
- Being recognized as one of America's Greenest Companies 2024 by Newsweek and Plant-A Insights Group
- Receiving an EcoVadis Gold Sustainability rating, placing it in the top 3% of companies in the industry

Our full 2023 Sustainability Report is enclosed with this application.

C. Relationship to the Product

nVent is the manufacturer of the products seeking the variance.

D. Specific Sections of the Regulation from which a Variance Is Requested

Section 95374(c) – Table 3: End-Use and Prohibited Substances (Air-conditioning Equipment; Other air-conditioning (new) equipment) and related Section 95373 Prohibitions, Exceptions, Registration, Recordkeeping, Reporting, Labeling, and Disclaimer Requirements

E. Reasons for Seeking Variance

This response contains confidential information protected as a trade secret under the California Public Records Act and may not be disclosed to the public pursuant to section 7924.510 of the California Government Code.

Overview

nVent manufacturers a range of industrial air conditioners that are used to cool and ensure proper functioning of enclosures that hold critical electronic devices, including charging units for electric vehicles and battery energy storage solutions for renewable energy storage. nVent units are used in highly specialized conditions that must conform to detailed and exacting customer

specifications. nVent air conditioners provide cooling directly to electronic devices and equipment, as opposed to cooling larger spaces, creating potential energy savings benefits for customers.

nVent primarily uses R-134a and R-407C in its equipment, but began exploring lower Global Warming Potential (GWP) substitutes following the adoption of GWP limits by the California Air Resources Board (CARB). nVent considered a range of low GWP substitutes before ultimately settling on R-513A.

nVent is seeking a variance for select R-134a units primarily due to lack of components for R-513A from its suppliers and, as a result, testing and certification timelines that will prevent nVent from converting all product lines to R-513A units until January 1, 2027. nVent is seeking a variance for its R-407C units due to lack of suitable replacements, supplier availability, and testing and certifications timelines.

This aligns with the compliance deadline nVent faces at the federal level, as per the United States Environmental Protection Agency's (EPA) final rule entitled Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons Under the American Innovation and Manufacturing Act of 2020, 88 Fed. Reg. 73090 (Oct. 24, 2023). Pursuant to the sectors and sub-sectors EPA established in this final rule, nVent products provide direct cooling to "spaces dedicated to maintaining the operating temperature of electronic technologies," which faces a GWP limit of 700 and a compliance date of January 1, 2027. 88 Fed. Reg. at 73142.

Key challenges

These kind of product transitions require significant engineering resources and talent, and nVent competes with other larger manufacturers in the industry for such talent. Additionally, components capable of utilizing low GWP refrigerants are in short supply as suppliers transition their product lines. In addition, implementation of these components would involve complete redesigns that currently use higher GWP refrigerants, which negatively impacts timing. Due to the nature of cooling electronics, nVent customer's require the same robust performance a previous versions in the transitioned unit. This requires nVent to ensure proper design, a high level of testing and stringent recertification to continue providing customers with high-performance units. Adding to the complexity of this task, and as discussed more fully below, the testing process for recertification under the applicable Underwriters Laboratories (UL) standard is highly time-intensive and cannot be completed on an expedited basis.

Notwithstanding these challenges, nVent has made significant progress in transitioning its product lines, with approximately [redacted] of nVent's products sold annually into California ready to transition by January 1, 2025, approximately [redacted] of nVent's products in the midst of a transition and likely to be ready by January 1, 2025, and approximately 20 percent of nVent's products in need of a variance until January 1, 2027. The information is summarized in the table below and will be referred to as Group 1, Group 2 or Group 3 (3a/3b) for the remainder of this document.

Group	Transition Status	California units/year	% California units/year	Emissions CO2e (tons)	Product Families
1	Ready to Transition	[redacted]	[redacted]	[redacted]	[redacted]
2	In Progress to Transition	[redacted]	[redacted]	[redacted]	[redacted]
3	California Variance Requested 3a = R-134a 3b = R-407C	[redacted]	Total = 20% [redacted]	[redacted]	[redacted]

For the remaining total units sold for use in California, Group 3 which encompasses [redacted] product families manufactured by nVent and, it is impossible for nVent to meet the earlier compliance deadline. Over the requested variance period these products would utilize approximately 4,100 CO_2-equivalent tons of high GWP HFC refrigerants during the duration of the variance, in no more than 1,500 units. nVent will maintain records of units manufactured for sale in California under an approved variance application and make such records available to CARB upon request. To the extent nVent has direct or similarly situated competitors, nVent is unaware that any such competitors have transitioned completely to low GWP substitutes for sale in the United States. The denial of a variance will cause significant economic harm to nVent and its California customers. nVent will seek to offset any emissions of R-134a and R-407C resulting from this variance to eliminate any detrimental impacts on the climate.

Substitute Evaluation

To identify and evaluate possible low GWP substitutes for nVent units, nVent considered a wide range of factors, including safety, regulatory approval, and technical feasibility.

The first option was carbon dioxide. This proved to be infeasible for lack of compressor availability and system complexity due to the transcritical nature of the cycle and extreme high side pressures.

The second option was secondary loops with A2L refrigerants, which are being developed for residential and commercial applications using R-32 and R-454B, among others. But this option would have added significant cost and complexity to equipment design as a result of adding a refrigerant-to-liquid heat exchanger and pump.

nVent customers and fire engineering experts have also indicated that refrigerants classified as A2L for flammability in proximity to electronic devices present unacceptable safety risks for consumers, particularly when used in sensitive, high demand applications like electric vehicle charging stations and battery energy storage. No design modifications for A2Ls resolving such safety risks are possible to develop for nVent's products at this time. *See* attached letter from Professor Peter B. Sunderland of the University of Maryland and attached report *An Assessment of Alternative Refrigerant Options* by OTS R&D, Inc.

This left low GWP A1 refrigerants, of which R-513A was the only viable candidate for nVent units. But adapting nVent units to R-513A would require component redesign for Group 3

products, followed by testing and certification to applicable safety standards. nVent faced similar challenges for its R-134a and R-407C units in transitioning to R-513A, as discussed more fully below.

R-134a Units

nVent's compressor suppliers have developed compressors for use with R-513A that are compatible with nVent's existing R-134a product. One supplier has rated their compressors for use with both R-134a and R-513A and these products have already undergone engineering validation and certification for Underwriters laboratory as summarized in Group 1. We expect this group of units to be transitioned prior to the deadline.

nVent is working with a second supplier to secure the Underwriters Laboratories (UL) approval and certification of a compressor sufficient to meet nVent's needs. nVent expects this second supplier to release Underwriters Laboratories recognized compressors for use with R-513A by late 2024, after which nVent can start the Underwriters Laboratories certification process for its air conditioning units. The certification process is relatively straightforward, as the compressors are drop-in replacements, but significant testing will be required for nVent to update and receive a UL listing. Pending no major issues, this work is expected to be complete by the end of 2024 and is summarized in Group 2. This group is in the midst of transitioning and will likely be ready before the deadline.

A select number of R-134a models present additional challenges due to lack of supplier availability, redesign requirements, testing and required Underwriters Laboratories certification. These challenges make it impossible for nVent to meet an earlier compliance deadline. These include three product families summarized in Group 3a. This is one of the product groups for which we are seeking a variance.

R-407C Units

The challenge in transitioning from R-407C to R-513A is that R-513A compressors require approximately 40% more volume than R-407C compressors. They also require redesign of the heat exchangers due to the lower vapor density of R-513A, as documented in the OTS study. There are no compressors available from nVent suppliers that support transition from R-407C to R-513A without major R&D efforts. This is because R-513A compressors are physically larger, requiring nVent to redesign structural components, copper piping, and increase the number of circuits in each evaporating and condensing coil for any units that switch to R-513A compressors. After redesign, these units will also require significant testing to ensure performance meets that of previous units, and to receive a Underwriters Laboratories (UL) listing. The nVent R&D team needed to work on this effort is fully supporting transitioning Group 1 and Group 2 products until the end of 2024.

[redacted]

[redacted]

The transition from R-407C to R-513A presents challenges for nVent as stated above, these challenges make it impossible to transition products in Group 3b to alternative refrigerant before January 1, 2027. This is one of the product groups for which we are seeking a variance.

Transition Timeline

As such, the transition process set forth in this variance application shows that nVent is unable to transition until January 1, 2027, for affected R-134a units and R-407C units. As noted above, items in Group 1 sold annually into California will be ready to transition by January 1, 2025, items in Group 2 are in the midst of a transition and are likely to be ready by January 1, 2025, and items in Group 3 are in need of a variance until January 1, 2027.

It is not possible for nVent to transition sooner, due to the limited amount of compressors available for select nVent's R-134a and R-407C units. The denial of a variance will mean severe economic hardship for nVent and potential disruptions in the use and availability of a wide range of electronic equipment in California, including in particular key renewable applications (*i.e.*, electric vehicle and battery energy storage).

nVent is mindful that California does not restrict the sale of units manufactured before the applicable compliance deadlines after such deadlines have passed, but nVent is not able to build up sufficient inventory to sustain its business and meet customer demand. The business risks of maintaining excessively high inventory make this approach infeasible from both practical and commercial standpoints.

F. Type of Variance Requested

nVent seeks a variance for reasons of impossibility – *i.e.*, nVent exercised best efforts but still was unable to comply with the regulatory requirements for reasons beyond its control despite exercising foresight to prevent the noncompliance.

G. If seeking an Impossibility variance, please provide clear and convincing evidence demonstrating how all of the following Impossibility variance criteria have been met:

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nVent faces comparable challenges for its R-134a products as compared to its R-407C products. Both require a variance, but for somewhat different reasons. See also the response to Question E.

1. A lower risk substitute is not currently or potentially available

Products Using R-134a seeking variance

nVent manufactures air conditioner products in Group 3a using R-134a for use in California, and a variance is being requested for these product families. Each model family represents a different form factor, capacity, and/or voltage option. Within each model family there are dozens of options and features including electric heat, microcontrollers, and advanced corrosion protection. nVent air conditioning units are generally mounted to an electrical enclosure which contains sensitive and critical electronic equipment that requires climate control. Units are used in a variety of applications and environments including telecommunications, solar energy, manufacturing, and food and beverage. Units are used indoors and range from 1000 Btu/hr to 8500 Btu/hr of cooling capacity.

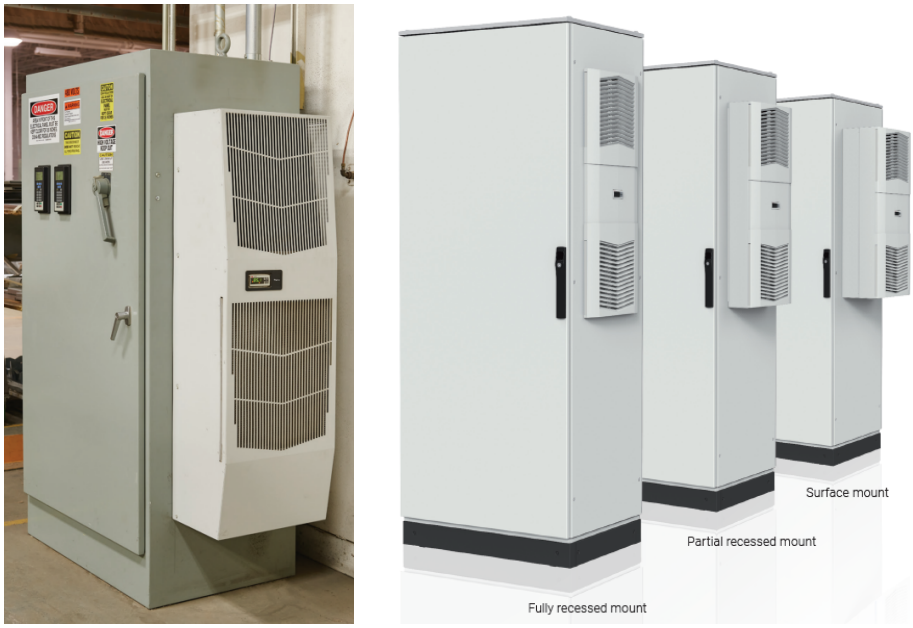

Figure 1: nVent R-134a Air Conditioning Units attached to electrical enclosures

All nVent air conditioning units are certified to Underwriters Laboratories (UL) standards. Underwriters Laboratories Listing is a market requirement for this equipment. Historically, products have been listed to UL 484, including all of nVent's current air conditioning product. However, that standard sunset on January 1, 2024, and was replaced with UL 60335. Units currently listed to UL 484 may remain so, but any design changes require that units are re-certified to the new UL 60335 standard. Component changes, such as compressors and refrigerants, constitute design changes and impact Group 2 and Group 3 products.

Conversion to the new Underwriters Laboratories standard requires a construction review and an extensive amount of testing, including confirmation of nameplate data, confirmation of safe operation under maximum conditions, and confirmation of safety mechanism in the event of abnormal operating conditions. In order for an air conditioning unit to receive Underwriters

Laboratories certification, the component compressor must have an appropriate Underwriters Laboratories recognition.

nVent's compressor suppliers for Group 3 products have developed compressors for use with R-513A that are compatible with nVent's existing R-134a product but these will not be available until October 2024. However, the use of the compressors in these model is challenging due to unit size constraints which requires significant redesign. Unit testing is extended due to [redacted] and current talent needed to complete the work are not available until the start of 2025 due to their focus on transitioning the remainder of nVent's air conditioning portfolio.

Products Using R-407C

nVent manufactures air conditioner products in Group 3b using R-407C for use in California, and a variance is being requested for these product families. Each model family represents a different form factor, capacity, and/or voltage option. Within each model family there are dozens of options and features including electric heat, microcontrollers, or advanced corrosion protection. nVent air conditioning units are generally mounted to an electrical enclosure which contains sensitive electronic equipment that requires climate control. Units are used in a variety of applications and environments including telecommunications, solar energy, manufacturing, and food and beverage. Units may be located either indoors or outdoors and provide from 4,000 to 60,000 Btu/hr of cooling capacity.

Unlike nVent's R-134a units, a low-GWP non-flammable available substitute refrigerant has not been developed for R-407C. Compressors that are currently available for lower-GWP substitutes that are rated A1, such as R-513A, are materially larger in size and power consumption than those available for R-407C and are not suitable as drop-in replacements in nVent's products.

Accordingly, nVent has been working with its supply base to design and select new compressors for use with R-513A in its currently R-407C products. This process is lengthy and involves significant engineering effort for unit redesign, internal qualification and reliability testing, and Underwriters Laboratories certification to UL 60335-2-40.

As indicated in Question L, nVent cannot complete this process to replace the use of R-407C before January 1, 2027.

Summary

Summary of R134a and 407C products and transitions can be found in the Gantt Chart attachment (enclosed but protected as Trade Secret) outlining nVent's transition, development, test and documentation plan. Note this is provided for illustrative purposes only, with final transition dates subject to change based on available engineering hours, component availability, testing results, and other factors.

2. An exemption will not increase the overall risk to human health or the environment.

R-134a and R-407C are A1 refrigerants and have been used safely by nVent and others for more than 20 years. The total volume of R-134a used annually in the state of California (CA) by nVent in need of a variance is approximately [redacted] The total volume of R-407C used annually by nVent in need of a variance is approximately [redacted] With GWPs of 1774 and 1430, respectively, nVent's use for this variance application represents approximately 4,100 **CO_2-equivalent tons on an total variance basis**.

The emissions calculation used is summarized below, and can also be found in section N:

- Lifetime Leak Rate + Total EOL = Total Lifetime Emittance
  - Unit Refrigerant Charge x Leak Rate x 10 = Lifetime Leak Rate over 10 years
  - Units Refrigerant Charge = Total End of Life (EOL) Emittance
- Total Lifetime Emittance x Units for CA per year = Total Emissions per Year
- Total Emissions per Year x GWP = Total CA CO_2 tons per year

Total emissions, as described more fully in Question I, below, are projected to be approximately 4,100 **CO_2-equivalent tons** over the term of the requested variance, all of which nVent will cover with carbon offsets to ensure a net zero outcome.

3. The Applicant has used best efforts to anticipate and address the impossibility and any potential noncompliance

As discussed throughout this variance application, nVent has worked to transition to low GWP substitutes for its products since California finalized its current HFC regulations. As noted above, Group 1 of nVent's products sold annually into California are ready to transition by January 1, 2025, Group 2 of nVent's products are in the midst of a transition and likely will be ready by January 1, 2025, and nVent's products in Group 3 are in need of a variance until January 1, 2027.

The nature of the technical challenges facing nVent in making such a transition are entirely distinct from other types of equipment in the "Other Air Conditioning" category, given that nVent's products provide cooling to sensitive electronic devices and other types of equipment, often within confined, closed spaces and subject to numerous size, performance, and safety restrictions.

Most other air conditioner equipment types can use currently available compressors with low GWP substitutes. But these commercially available compressors compatible with low-GWP refrigerants are designed for larger cooling loads such as residential air conditioners. These air conditioner units are intended to cool rooms and other occupiable spaces, as opposed to operating within the housing of smaller electronic devices.

As discussed throughout this application making any change in refrigerant a significant, complex, costly, and time-consuming endeavor, particularly considering the additional challenges in ensuring regulatory approval under the Environmental Protection Agency's Significant New Alternatives Program (SNAP) and certification under the latest applicable

Underwriters Laboratory standard. These are multi-year processes that are subject to any number of delays and other pitfalls and involve technical, commercial, and regulatory variables that are not entirely within the control of the manufacturer. nVent has made steady progress in its transition, but as noted above not every product line will be ready by the applicable compliance date.

Had it been possible for nVent to transition completely to low GWP substitutes prior to January 1, 2025, nVent most assuredly would have done so, both to ensure compliance with all applicable regulations in California regarding HFCs and to avoid the substantial risk to its business and to the manufacture and utilization of a wide range of electronic devices in California if nVent does not receive a variance.

H. [Omitted; Not seeking Force Majeure event variance]

I. Please attach supporting documentation for attributing noncompliance to Impossibility or a Force Majeure Event. Supporting documentation must be written in English. Please list the supporting documentation that is attached to this application.

See attached letter from Professor Peter B. Sunderland of the University of Maryland and attached report entitled *An Assessment of Alternative Refrigerant Options by OTS R&D Inc.*

The purpose of these attachments is to support nVent's decision to select R-513A as the only viable substitute for R-134a and R-407C in nVent's products, given the highly specialized conditions in which they must operate – i.e., cooling electronic equipment.

This does not preclude further consideration of A2Ls in the future; nor it is intended to bear on the suitability of A2Ls beyond the specific conditions facing nVent products.

J. Provide a description of all efforts made to timely fulfill the requirements of the section(s) from which a variance is being requested.

As described above in the responses to Question E and Question F, nVent has been working with its suppliers and other interested parties (such as research universities) on advancing technologies to make an A1 solution feasible for its products. This is significantly time-consuming work, given the niche market occupied by nVent. There are few other manufacturers in this space, and all are subject to the same technical and commercial limitations.

Many other similar manufacturers of industrial air conditioners are Europe-based. These competitors have primarily focused on solving the problem using A2L and A3 refrigerants for European markets – solutions that would not be acceptable to a United States customer base due to safety concerns. Additionally, these substitutes being implemented in Europe will not

be approved until SNAP 26 is finalized and EPA completes a follow-on SNAP 27 rulemaking for additional substitutes (final rule not expected until 2025 at the earliest). nVent and its customers consider reliance on substitutes not yet approved by the Environmental Protection Agency under SNAP to present an unacceptable level of regulatory risk.

nVent continues to work with its customers on new safety parameters for the adaptation of other lower GWP refrigerants, including A2Ls, in the cooling of sensitive electronic devices. But, as noted above, this is a challenging process and is not likely to yield marketable solutions for United States markets within the next three years, even with significant effort and investment by nVent. See attached letter and report, referenced above, for validation of this timeline.

K. Length of Variance Requested

nVent respectfully seeks a variance through January 1, 2027, for select R-134a units and through January 1, 2027, for select R-407C units. This accounts for Group 3 air conditioners installed per year in the state of California, with **a total emissions of 4,100 CO_2-equivalent tons over the variance period.**

L. Provide a compliance plan which describes in detail how, if a variance is granted, compliance will be achieved as expeditiously as possible including all of the following:

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See also Response to Question G.

This compliance plan commits a majority of nVent's laboratory capacity to compliance efforts, with remaining capacity dedicated to product maintenance and improvements as well as the development of new products, including those focusing on solving new applications for the battery energy storage market and other products focusing on green initiatives.

Products Using R-134a

nVent currently produces items in Group 3a for California that utilize R-134a with cooling capacities up to 8500 Btu/hr. These units use reciprocating and rotary style compressors which are supplied by two well-known global compressor suppliers. As described in the response to Question G, nVent will convert the majority of its R-134a products to R-513A. The remaining units in Group 3a must be transitioned to new compressor part numbers and qualified to UL 60335 after significant redesign is completed. *See* attached Gantt Chart for timing details.

nVent has prioritized completing the highest running models in order to minimize overall emissions.

Products Using R-407C

nVent currently produces Group 3b units for use in California that utilize R-407C with cooling capacities from 4,000 to 60,000 Btu/hr. nVent uses reciprocating and scroll style compressors which are supplied by three well-known global compressor suppliers. As described in the response to Question G, there is not an A1 drop-in replacement for R-407C. nVent will replace R-407C with R-513A, but significant design changes will be required due to the volumetric capacity limitations as discussed earlier. [redacted] nVent cannot complete conversion from R-407C to R-513A before December 2024 and due to high project risk is requesting variance until January 1, 2027.

M. Provide a description of the damage or harm that will result to the Applicant from immediate compliance with the regulatory requirements, including if compliance would result in an extraordinary economic hardship, such as closure of the entire facility or loss of a large portion or the revenue:

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[redacted]

N. If applying for an Impossibility variance please provide quantification of current Greenhouse Gas (GHG) emissions resulting from normal business-as-usual operations as it directly relates to the continued use of any substance in end-uses listed in Table 1, section 95374 (a); Table 2, section 95374 (b); Table 3, section 95374 (c); or Table 4, section 95374 (d). This includes quantification of the direct GHG emissions resulting from refrigerant leaks or HFC emissions and indirect GHG emissions resulting from energy use (where applicable), with all calculations, based on the average lifetime of the equipment or product that will continue to use prohibited substances. Applicant must include all calculations used to calculate GHG emissions estimates, including emission factors (i.e., charge size as defined in section 95373, leak rate as defined in 40 C.F.R. Part 82.152, and refrigerant used over the average lifetime of the equipment, system, or product).

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nVent has calculated the direct GHG emissions resulting from refrigerant leaks or HFC emissions and indirect GHG emissions resulting from energy use, with all calculations based on the average lifetime of the equipment or product that will continue to use HFCs. The calculations below include emission factors (*i.e.*, charge size as defined in section 95373, leak rate as defined in 40 C.F.R. Part 82.152, and refrigerant used over the average lifetime of the equipment, system, or product).

To calculate the total emissions, first a refrigerant leak rate calculation was performed.

Refrigerant Leak

Leak Rate = 2% annual according to 2015 Edition of the California's High Global Warming Potential Gases Emission Inventory - Emission Inventory Methodology and Technical Support Document (window air conditioner category deemed per CARB guidance as most similar to nVent units for purposes of determining leak rates).

Units have a 10-year life span.

Calculations:

- Lifetime Leak Rate + Total EOL = Total Lifetime Emittance
  - Unit Refrigerant Charge x Leak Rate x 10 = Lifetime Leak Rate over 10 years
  - Units Refrigerant Charge = Total End of Life (EOL) Emittance

[redacted]

[redacted]

[redacted]

[redacted]

Total Emissions per Year:

[redacted]

This has been rounded to 4,100 CO_2e over the variance period for use in this document.

O. Provide a description of any negative impacts to human health or the environment that may result from the granting of a variance.

nVent acknowledges the negative impacts to human health and environment of the emissions of HFCs and other greenhouse gases. With regard to nVent's products, nVent believes any such impacts can be minimized, if not completely avoided, by offsetting its emissions through the purchase of carbon offsets, as discussed more fully below in Question P.

P. Provide a mitigation plan that demonstrates how you will reduce excess GHG emissions to a level equal to or below what would have been emitted had you been in compliance and how you will mitigate any negative impacts to human health or the environment. You must include all calculations used to calculate GHG emission estimates including emission factors (i.e., charge size as defined in section 95373, leak rate as defined in 40 C.F.R. Part 82.152, and refrigerant used over the average lifetime of the equipment, system, or product). This may include an analysis of prohibited substances, efforts to reduce leaks or venting of prohibited substances, and options to recycle or destroy high-Global Warming Potential refrigerants.

nVent will purchase a quantity of carbon offsets equal to **4,100 CO_2-equivalent tons** for the variance period from a reputable offset provider upon granting of the variance within 90 days of being granted a variance.

Q. Provide a detailed explanation of efforts that may be implemented to curtail noncompliance in lieu of obtaining a variance

nVent does not believe there are adequate measures at its disposal to "curtail noncompliance" in lieu of obtaining a variance.

nVent will not be able to rely on inventory of equipment manufactured prior to January 1, 2025 for any meaningful amount of time, especially given the significant and growing demand for electrical infrastructure, fueled in part by the Inflation Reduction Act and other incentives and requirements in California.

R. By signing below, you (the Applicant) certify under penalty of perjury that you are a Responsible Official with full authority to submit the application and implement any provision of an Executive Order, and that all information provided is true and accurate to the best of your knowledge, after conducting due diligence. (Applications without this certification will be automatically denied.)

Avi Gholap

June 17, 2024

Application submitted via email to: HFCREDUCTION@ARB.CA.GOV