

One Hamilton Road
Windsor Locks, CT 06096-1010
Phone: (860) 654-4706
Email: edward.mchugh@collins.com
www.collinsaerospace.com



Edward F. McHugh
Vice President and Counsel

July 28, 2020

Via Electronic Mail

Linda Kildahl
Rulemaking Lead
Air Quality Program
Washington State Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503

Re: Public Comments on Chapter 173-443 WAC Rule Proposal

Dear Ms. Kildahl:

This comment letter is being submitted on behalf of Collins Aerospace in response to the notice of proposed rulemaking for hydrofluorocarbons (HFCs) under Chapter 173-443 of the Washington Administrative Code. We appreciate the opportunity to submit comments on the proposed rules under consideration by the Department of Ecology (Ecology) and ask for your consideration of the points raised below. We further note our support for the similar comments and proposed changes submitted now and previously on March 16, 2020 by The Boeing Company (Boeing) as part of the informal rulemaking process.

I. Background

Collins Aerospace is dedicated to developing solutions for the global aerospace and defense industry. Created in 2018 by uniting UTC Aerospace Systems and Rockwell Collins, the company now has a global presence with approximately 75,000 employees at nearly 300 locations. Our sites in Washington, supporting approximately 1,100 employees, include Everett, Spokane, Federal Way, Bothell and Kirkland. We continue to enhance our investment in these sites and the communities in which we operate.

Our business in Washington is not limited to production at our manufacturing sites. The Collins Aerospace supply chain has deep roots in Washington with more than 400 suppliers and approximately \$386 million in expenditures across them.

In addition, Boeing is one of Collins Aerospace's main customers. Currently, Collins Aerospace is under contract with Boeing on a number of platforms including the Boeing 737, 777 and 787. In the context of



those contracts, we supply airplane equipment that uses R-134a including supplemental cooling units (SCU), cargo refrigeration units (CRU), air “chillers” and beverage “chillers” for both commercial and military airplanes. Selection of particular HFCs for use in our equipment is driven by customer-specified mechanical, electrical and safety requirements and incorporated into our customer contracts.

We direct ship SCUs and CRUs into Washington where they are integrated into the AFT section (contains the SCU) and the mid-body (contains the CRU) sections of aircraft. In addition, we ship both SCUs and CRUs to other states where our products are installed on parts that themselves get shipped into Washington for further assembly.

Air and beverage “chillers” are also direct shipped to Boeing in Washington. Work performed inside Washington on these units includes installation and only minor troubleshooting and repairs. Similar to the CRUs and SCUs, Collins Aerospace also ships air and beverage “chillers” to other states where the equipment is incorporated into parts that are finally assembled in Washington.

Collins Aerospace is committed to protecting the environment and the health and safety of individuals across the globe and we take this commitment seriously. As a global company, we recognize our unique responsibility to partner with the regulators and the communities where we live and work to, among other things, minimize our environmental footprint. To this end, all of our sites are held accountable for meeting sustainability goals for greenhouse gases, water, hazardous/recycled waste and solvent air emissions based on 5-year plans.

II. Proposed Rule

Collins Aerospace has carefully reviewed WAC 173-443 and the proposed rules and does not believe that they were intended to apply to the type of specialized aircraft equipment described above. First, HFC emissions would not be expected to occur during installation, testing, or repair of our equipment in Washington, which is performed by highly skilled and trained mechanics. In addition, Collins Aerospace equipment inside the airplane cabin would not result in HFC emissions under normal operating conditions.

Second, the Collins Aerospace equipment is not introduced into Washington commerce in the sense of other “one-size-fits-all” products that might appear on the shelves of Washington stores or might be sold to a comparatively broad range of commercial customers. It is shipped into Washington where it is installed and tested on commercial and military airplanes. The planes are then sold and transported to airline customers outside Washington for use in federally regulated airspace. Many of these large planes are dedicated to international flights that never cross Washington airspace.

Third, any interpretation of the proposed rules which would require the phase-out of R-134a in our equipment would have significant adverse impacts for the supply of aerospace equipment both inside and outside of Washington. While Collins Aerospace is evaluating substitutes for the R-134a in its equipment, that substitution cannot occur for a period of at least several years. Any such substitution would constitute a design change that would necessitate a long review and approval process, and FAA approval as well as re-certification. Substitution would further be complicated by the fact that Collins Aerospace has in place long term customer contracts with customers across the globe that prevent us from making unilateral substitutions.

Moreover, Collins Aerospace is not currently aware of a ready substitute that would meet the applicable performance and safety criteria in this equipment. Both the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the United States Department of Transportation (DOT) consider HFC-134a to be non-flammable - a key characteristic for use in safe air transportation. In contrast, HFO-1234yf, developed as an alternative to HFC-134a, is not only designated as slightly flammable, but it releases strong, toxic acids when released to the atmosphere or when burned. It would take up to 10 years to be able to develop, test, implement and get approvals to substitute the R-134a in our equipment, and likely longer due to the many constraints resulting from the ongoing COVID-19 pandemic. Mandating a phase-out of R-134a in our aerospace products could result in a supply disruption for both commercial and military applications.

III. Requested Changes

In order to effectuate the presumed intent of the proposed regulations, Collins Aerospace respectfully requests that Ecology consider adopting the changes described below and shown more specifically in redline form in the proposed regulatory text in **Attachment A**.

A. We Request that Ecology Add a Definition of “Stationary” to the Proposed Rules.

The definition of “refrigeration equipment”¹ in the proposed language for WAC 173-443 clarifies Ecology’s intent to regulate HFC-containing equipment at stationary sources. However, because the undefined term “stationary device” is used in that definition instead of “stationary source,” as defined in WAC 173-400-030(91),² the rule could be misinterpreted. Accordingly, we recommend adding the definition of “stationary” set forth below to the proposed rules to both address this ambiguity in the definition of “refrigeration equipment” and clarify the meaning of “stationary” by adding that term in the placed described below in Section III.B. Ecology’s proposed definition of “refrigeration equipment” when coupled with an additional definition of “stationary” would ensure clarity, consistent application, and regulatory certainty.

We note that the Washington Legislature, in passing HB 1112, stated its intent to regulate HFCs in a manner similar to regulations that have been or will be adopted in other states. Making this proposed change implements that legislative intent because it is consistent with the final refrigeration equipment rule in the California code³ that uses the term “stationary device,” along with the following definition of “stationary”:

“Stationary” means the system is (i) installed in a building, structure, or facility; (ii) attached to a foundation, or if not attached, will reside at the same location for more than twelve consecutive months; or (iii) located intermittently at the same facility for at least two consecutive years and operates at that facility a total of at least 90 days each year.

¹ “Refrigeration equipment” means any stationary device that is designed to contain and use refrigerant gas, including but not limited to retail or commercial refrigeration equipment, household refrigeration equipment, and cold storage warehouses.

² Stationary source means any building, structure, facility, or installation which emits or may emit any air contaminant. This term does not include emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined in Section 216(11) of the federal Clean Air Act (42 U.S.C., 7550(11)).

³ California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4

Therefore, Collins Aerospace asks Ecology to add the above definition of “stationary” to the final rule.

B. The Word “Stationary” Should Be Added to the Definitions of “Centrifugal Chiller,” “Commercial Refrigeration Equipment,” “Positive Displacement Chiller,” and “Stand-Alone Unit.”

The unique and complex nature of the equipment described above manufactured by Collins Aerospace does not readily allow for classification under the specific end uses identified under Ecology’s program. Accordingly, Collins Aerospace does not believe that the proposed regulations as currently written are applicable to its products. However, this equipment could be misconstrued as falling under certain categories of end uses due to its complexity, resulting in some regulatory uncertainty. To effectuate Ecology’s intent to limit the regulations to “stationary” sources and eliminate any ambiguity, we ask that the term “stationary” be added to the definitions of “centrifugal chiller,” “commercial refrigeration equipment,” “positive displacement chiller,” and “stand-alone unit” as shown in **Attachment A**.

C. Ecology Should Add a Reference to “Chiller-Type Refrigeration Equipment” in the Definition of “Refrigeration Equipment”

In addition to adding “stationary” as a defined term, Collins Aerospace recommends adding the words “chiller-type refrigeration equipment” to the list of examples in Ecology’s proposed definition of “refrigeration equipment.” Adding “chiller-type refrigeration equipment” to the list of examples clarifies that certain items of refrigeration equipment manufactured by Collins Aerospace that are referred to as chillers (though not meeting Ecology’s regulatory definition of “chiller”) are contemplated by the definition of “refrigeration equipment,” and deliberately excluded because they are not “stationary.” Although the draft rules indicate that “refrigeration equipment” is “not limited to” the enumerated items, Collins Aerospace is concerned that the definition could be misconstrued without our proposed clarification.

Therefore, Collins Aerospace asks Ecology to add “chiller-type refrigeration equipment” to the examples listed in the definition of “refrigeration equipment.”

D. Ecology Should Consider Inserting Language Clarifying that Aircraft Components are Outside the Scope of Ecology’s Proposed Rule

The changes described in Sections III.A-III.C above might be unnecessary if a broad statement was included in Section 173-443-020 (Applicability) of the proposed rule stating that the rules are not applicable to aircraft components. Such language would provide a greater measure of regulatory certainty compared with relying exclusively on the recommendations in Sections III.A-III.C, and would be appropriate in light of Ecology’s intent to limit its regulation to stationary sources. Moreover, such a statement in the Applicability section would allow for future changes to these rules without concern for unintentionally broad consequences on the aerospace industry. We note that Ecology has already proposed language that would suffice for these purposes in the labeling requirements of WAC 173-443-070(9), stating “[t]he requirements of this section do not apply to aircraft and aircraft components subject to certification requirements of the Federal Aviation Administration.”



Accordingly, Collins Aerospace respectfully requests that Ecology consider including similar language in the Applicability section of WAC 173-443-020, as follows:

“WAC 173-443-020 Applicability. (1) The requirements of this chapter apply to any person who offers for sale, leases, rents, in- stalls, or otherwise causes to enter into Washington commerce any product or equipment that contains, uses, or will use HFCs or other substitutes for an end-use listed in WAC 173-443-040.

(2) Labeling requirements.

...

(3) The requirements of this chapter do not apply to aircraft and aircraft components subject to certification requirements of the Federal Aviation Administration.”

Again, this change is consistent with the legislative intent to regulate HFCs in a manner similar to regulations that have been or will be adopted in other states. One U.S. Climate Alliance (USCA) member, the State of Colorado, proposed an HFC rule in 2020 that also excludes aircraft and other mobile sources.⁴ Another USCA member, Maryland, noted that “Maryland and other USCA States are not proposing regulation for the mobile sources at this time.”⁵

There are important legal and public policy reasons for a broad exclusion for aircraft. The HFCs used in aerospace systems (e.g., in galleys, cabins, and cargo areas) are critical to meeting strict Federal Aviation Administration (FAA) certification standards for flight safety. This is why Oregon House Bill 4024 in 2020 defined “substitute” to exclude parts subject to FAA certification requirements, in addition to a specific exemption for aircraft fire extinguishing systems. While the aerospace industry is evaluating non-HFC solutions, none have been identified to date. As discussed above, the development/certification process for chemical substitutions for aerospace purposes can take up to a decade, with an anticipated range of more than 5 years in this case - a period of time that is likely to be even longer in light of the ongoing COVID-19 pandemic.

IV. Conclusion

Collins Aerospace appreciates the opportunity to participate in this important rulemaking process and looks forward to working with Ecology. In submitting these comments, Collins Aerospace reserves the right to supplement, amend or otherwise submit additional comments to Ecology on any issues related to this rulemaking. Should you have any questions or concerns about our comments, please do not hesitate to contact Kristen Sherman at (860) 541-0101 or Kristen.Sherman@RTX.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Edward F. McHugh".

Edward F. McHugh

⁴ See Colorado Air Quality Control Commission Economic Impact Analysis for Part B.I. Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses (HFC Rule), dated Feb. 20, 2020.

⁵ See Maryland fact sheet on New Regulations under new Chapter COMAR 26.11.33, dated Dec. 2, 2019, available at https://mde.maryland.gov/programs/workwithmde/Documents/AQCAC_HFC12162019.pdf, at 11.