Subject: Specifying Hydrochlorofluorocarbon (HCFC) Refrigerants in DoD Criteria

Applicability: Information

1. Current EPA studies and reports indicate that the availability of HCFC refrigerants beyond equipment phase-out dates will be more than enough to service and maintain HCFC related equipment throughout their entire service life. Due to the widely expected availability of these refrigerants, the cost of procuring such refrigerants is expected to remain relatively constant and therefore should not place any significant financial consequences on installations. Until further evidence is discovered to contradict the EPA’s findings UFGS criteria that address air-conditioning and refrigeration equipment will continue to allow HCFC refrigerants until their applicable phase-out dates (e.g., 1-Jan-2010 for R-22 and 1-Jan-2020 for R-123).

2. Unified Facilities Guide Specifications (UFGS) that address air-conditioning and refrigeration equipment, (e.g., liquid chillers, unitary heat pumps, unitary air-conditioners, packaged thru-the-wall air-conditioners, etc.) currently allow the procurement of equipment that uses hydrochlorofluorocarbon (HCFC) refrigerants. Note that the most common of these refrigerants used today in the air-conditioning and refrigerant market place are R-22 and R-123. The issue facing the UFGS criteria is the fact that these HCFC refrigerants are under an imminent phase-out schedule. By the year 2030, the production and distribution of all new HCFC refrigerants will be stopped completely.

3. The current HCFC refrigerant phase-out schedule was established by the United States Environmental Protection Agency (EPA) in an effort to minimize damage to the earth’s ozone layer.

4. EPA’s current phase-out schedule includes various milestones for reducing HCFC consumption between now and the year 2030. The following is a summary of the most impacting dates to current UFGS criteria.

   a. 01-Jan-2010. The production and import of new equipment using R-22 will be stopped.

   b. 01-Jan-2020. The production and import of new R-22 refrigerant for serving of existing equipment will be stopped.
c. 01-Jan-2020. The production and import of new equipment using R-123 will be stopped.

d. 01-Jan-2030. The production and import of new R-123 refrigerant for serving of existing equipment will be stopped.

5. Current UFGS criteria do not specifically call-out allowable refrigerants, but instead references refrigerants in terms of their Ozone Depletion Potential (ODP) factor. The ODP factor is a normalized indicator, based upon a value of 1.0 for R-11, of the ability of refrigerants to destroy stratosphere ozone molecules. Allowable refrigerants, per current UFGS criteria, are any refrigerants with an ODP of 0.05 or less.

6. The decision of when to modify current UFGS criteria to eliminate the procurement of equipment using HCFC refrigerants is being based upon the projected availability of new and recycled/recovered HCFC refrigerants. Note that the equipment life of air-conditioning and refrigerant equipment that use HCFC refrigerants can typically be estimated to be between 15 to 20 years. It is important that new and/or recycled/recovered HCFC refrigerants are readily available during this time frame in order for that equipment to be adequately serviced and maintained throughout its entire serviceable life.

7. For additional information on the future availability of HCFC refrigerants, please reference the EPA report titled “The U.S. Phase-out of HCFCs: Projected Servicing Needs in the U.S. Air-Conditioning and Refrigeration Sector”. The document can be viewed from the following hyperlink:


8. As stated in the EPA report, further collaboration with the air-conditioning and refrigeration community is needed to gain consensus on future servicing needs and to solidify efforts to maximize HCFC supplies.

9. Point of contact for this bulletin is Gary Bauer, CECW-CE-D, and 202-761-0505. Special thanks to Sandy Wood, CEHNC, for his input and editorial support.

DONALD L. BASHAM, P.E.
Chief, Engineering and Construction Division
Directorate of Civil Works