EPA's guidance on HVAC refrigerant supply and demand has some technicians scrambling for answers

Recently the Environmental Protection Agency (EPA) released a statement that reinforced some previous regulations pertaining to the availability of R-22 for 2012, stating: "While R-22 production will ultimately be phased out, in the interim, federal regulators have confirmed their intention to ensure adequate supplies of R-22 are available to service equipment currently in use."

This statement was made with the intention of decreasing the panic surrounding the required change from ozone-depleting refrigerants.

Apartment communities with air-conditioning equipment containing R-22 should have a strategy for maintaining that equipment. There are several questions that management companies are asking and, unfortunately, in some cases there is not a simple answer. Following are some of the most common ones:

Q: How does this affect my current equipment?

A: If your air-conditioning equipment is currently functioning properly, there is no requirement to change to another refrigerant. If the equipment breaks down, the decisions can range from repairing the equipment to replacing the entire system to one that contains a non-ozone depleting refrigerant such as R-410A.

Q: What about price?

A: You likely experienced sticker shock if you have tried to purchase a 30-pound jug of R-22 lately. In some U.S. markets, the price has risen from $180 at the end of last summer to more than $350 in early May. The price is expected to continue to rise based on continually decreasing supply (during the next few years) and sustained demand.

Q: What about "drop-in" refrigerants?

A: There is truly no such thing as a "drop in" for R-22. A genuine "drop in" would mean that if the system needs a little refrigerant added, a technician could just "top off" the refrigerant and be ready to go. Refrigerants should NEVER be mixed.

Q: I'm hearing about alternatives to R-22. What does this mean?

A: This would give an onsite maintenance department the option to keep the existing equipment operating but with a different refrigerant. There are several on the market available. They are sold with the identification of: MO-99, R-407, R-421, NU-22, etc.

Q: Why use an alternative?

A: Price. The price for R-22 will only continue to rise for the foreseeable future due to supply and demand. Alternatives are a much more financially stable option.

Q: Is an alternative refrigerant an option?

A: Maybe... with considerations...

Q: What considerations?

A: No R-22 alternative is as efficient or has the same capacity as R-22 when used in systems designed for R-22.

Any and all alternatives used in an R-22 system instantly void the manufacturer's warranty. This means that if a Dry-22 system is purchased and the technician charges the system with any alternative that costs less than R-22, there is no warranty to fall back on if the system fails. If there is no longer a warranty on the equipment, this also signifies that the alternative refrigerant may not give the desired results in that system.

Service requirements may differ for each alternative. In some cases, a complete oil change is required before the alternative refrigerant is installed; or the system may require a different servicing technique.

Different alternative refrigerants were manufactured with different considerations in mind. In other words, if a management company has properties in Arizona where the average temperature in the summer is much higher than in Tennessee, for example, the success of an alternative refrigerant may be better based on geographic location. Please consult refrigerant manufacturer documentation.

Q: Is an alternative refrigerant the only option?

A: No. The reason to consider using alternatives is to try to maintain the existing equipment at the lowest overall operating cost. Based on a community's given situation, it may be more cost-efficient in the long term to replace the equipment with one that uses ozone-friendly refrigerant.

Q: What makes refrigerant ozone-friendly?

A: The refrigerant does not contain chlorine. Chlorine has been proven to destroy the ozone layer which protects Earth from dangerous UV light.

Q: Why did the EPA pick R-410A to take the place of R-22 in new systems?

A: Truthfully, the EPA didn't select R-410A. The industry did. R-410A is a much more efficient refrigerant (meaning that it has the ability to move more heat) allowing manufacturers to have access to greater increases in energy-saving options (higher SEER ratings).

Q: I've heard that R-410A is going to be replaced soon anyway. Isn't it more damaging to the environment than R-22?

A: While no one can predict what will happen, R-410A is more than just a temporary solution. On the whole, R-410A is dramatically less damaging to the environment because using it in more systems decreases the need for fossil fuels to produce electricity. This is a greater decrease in hydrocarbon usage than R-22 usage. Additionally, R-410A is safe for the ozone layer.

Q: Can my maintenance technicians work on R-410A equipment?

A: Yes. If service technicians properly service R-22 equipment, there is only one change in service procedure. The change is that technicians will need to remove R-410A from its container as a liquid instead of a vapor, as is done with R-22. (Keep in mind that there may be the need for different gauges or other tools to be used.) The procedure is the same for all other service needs (install, repairs, charging, recovery, etc...).

Q: Is there anything I can do now at my community to respond to the situation?

A: Take advantage of training opportunities whenever possible. (NAA Education Institute's CAMT program at your local apartment association events, supplier training, etc.).

Ensure that maintenance technicians are using correct service techniques to keep the existing equipment running for as long as possible.

Acid test any recovered R-22. If the test comes up negative for acid, use techniques to recycle that refrigerant onsite—decreasing the need to purchase more.

Provide technicians with enough time to diagnose and repair refrigerant leaks during the first trip. It is common for technicians to take the shortcut of adding refrigerant to a system and not finding the cause of the shortage. Performing a proper leak check will extend the time spent on that service request. With the cost of R-22 exceeding $12 per pound in some markets, this time can provide a large savings.

Schedule an inclusive preventive maintenance program. Items to include might be cleaning coils annually, and balancing vents and filter changes, among other efforts.

This situation is one that will be around for a while. In my opinion, the more information that a management staff can obtain, the better its decision will be.

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