

# The Cold Facts

Winter 2005



*Smith's Dairy  
Headquarters in Orrville, Ohio*

## Smith's Dairy Products Company Selects RSC For Plant Expansion

**W**e are delighted to announce that Smith's Dairy has selected RSC to construct an addition to its facility at their corporate offices. Smith's Dairy is headquartered in Orrville, Ohio, with production facilities in Ohio and Indiana. The company has provided customers with a full line of quality dairy products since 1909 and also manufactures Ruggles® premium ice cream and Moovers® line of ultra-pasteurized single serve milks.

The project, to be completed later this year, has been designed to complement Smith's growing business. It will increase

storage capacity, material handling, dock access and provide additional parking. The total plant expansion includes approximately 30,000 square feet of refrigerated space plus the parking and access work. RSC's on-site project manager, Tracy Roshong, will oversee the construction activities.

RSC has had the pleasure of working closely with Smith's Dairy for many years and we'd like to express our appreciation to the company for its continued confidence in us. For more information about Smith Dairy, log on to their website at [www.smithdairy.com](http://www.smithdairy.com).

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## What's Happening At The RSC-GC.com Website?

If you haven't been there yet, we invite you to visit the new RSC website ([www.rsc-gc.com](http://www.rsc-gc.com)). You'll see that the new site offers many features and a great deal of information about RSC. We've also included a download page that offers a refrigerant pressure temperature chart and a huge conversion formula table.

We could really use your help with the download page. Is there any information you'd like us to make available? Your ideas are welcome and appreciated.

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## Production Of Some Refrigerants Is Slowing

What is the impact of the reduced manufacturing of refrigerants like R-22? It's higher prices and increased attention by the EPA! A recent study confirms that end-users in the U.S. are venting or losing greater amounts of these refrigerants than is acceptable by law. Consequently, the EPA has increased its investigative activities regarding mishandling of these systems. The result is substantial fines and higher levels of diligence by the authorities. Industry trade journals are now reporting incidents of fines, some amounting to thousands of dollars!

What should you do? In the near term, if you have R-22 or other CFC or HFC refrigerants in use, please ensure they're handled properly. Long term, you'll need to consider replacement refrigerants or systems.

For more information or help making a longer term decision, please contact your RSC representative.



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# Variable Frequency Drives: The Facts and The Myths

**V**ariable Frequency Drives (VFDs) are touted by the manufacturers as significant energy savers for the refrigeration industry. While there are many good applications for their use, if your reason for selecting them is energy savings, you should read on further to get the real facts.

- **VFDs on compressors.** Most modern compressors have some form of capacity control, which automatically unloads the motor when the compressor is operating at less than 100%. Compressor unloading, combined with the high cost of the VFDs for larger motors, makes the compressor application a choice that needs to be evaluated. It may or may not be a good value.
- **VFDs on condenser fan motors.** Condenser fan motors are one of the best applications for VFDs. It is not necessary to install a VFD on each fan motor, however. For example: In a system with 3-10 hp motors, an efficient method would be to install the VFD on one motor and allow the control system to start with the VFD-equipped motor, and when it gets to 100%, the second motor is started and the VFD motor lowered to 10%. As head pressure rises, the VFD-equipped motor speed is increased until it is again at 100%. The next fan is started and the VFD again lowered to 10%. The reverse procedure is used as head pressure falls. With the method described, cycling of non-VFD-controlled motors are minimized and condenser fan CFM is optimized for minimum energy usage and maximum efficiency.
- **VFDs on condenser pump motors.** These are good applications and should be applied like the condenser fan motors noted above.
- **VFDs on evaporator fans.** Using VFDs on evaporators presents some problems. Operating fans at slow speed will cause the coil to frost up faster than usual, thereby increasing defrost frequency and cost. Since there are many evaporator fans in most installations and the motors are small, payback for VFDs on evaporators will be lengthy.

A better solution for energy conservation is evaporator staging, where there are multiple valve stations for a room, or turning off the fans when cooling is not required.

- **Some VFD cautions.** Motors cannot be operated at slow speeds for extended time periods, as the motor will overheat. The problem is that the internal cooling fan is not supplying the cooling air for the motor as required. Some motor manufactures don't want the motors to be operated at speeds less than 50%.

Also, when retrofitting an existing motor to VFD operation, check to see if it is VFD-rated and the VFD-rated motor is insulated for the higher voltage spikes that are typical for this application. If the motor is not VFD-rated there may be a chance of premature failure.

Before you make any decisions about VFDs and your plant, please contact us. We'll provide information that helps you make an informed decision.

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