



Variable Frequency Drives

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FMI Energy Conference

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Applications

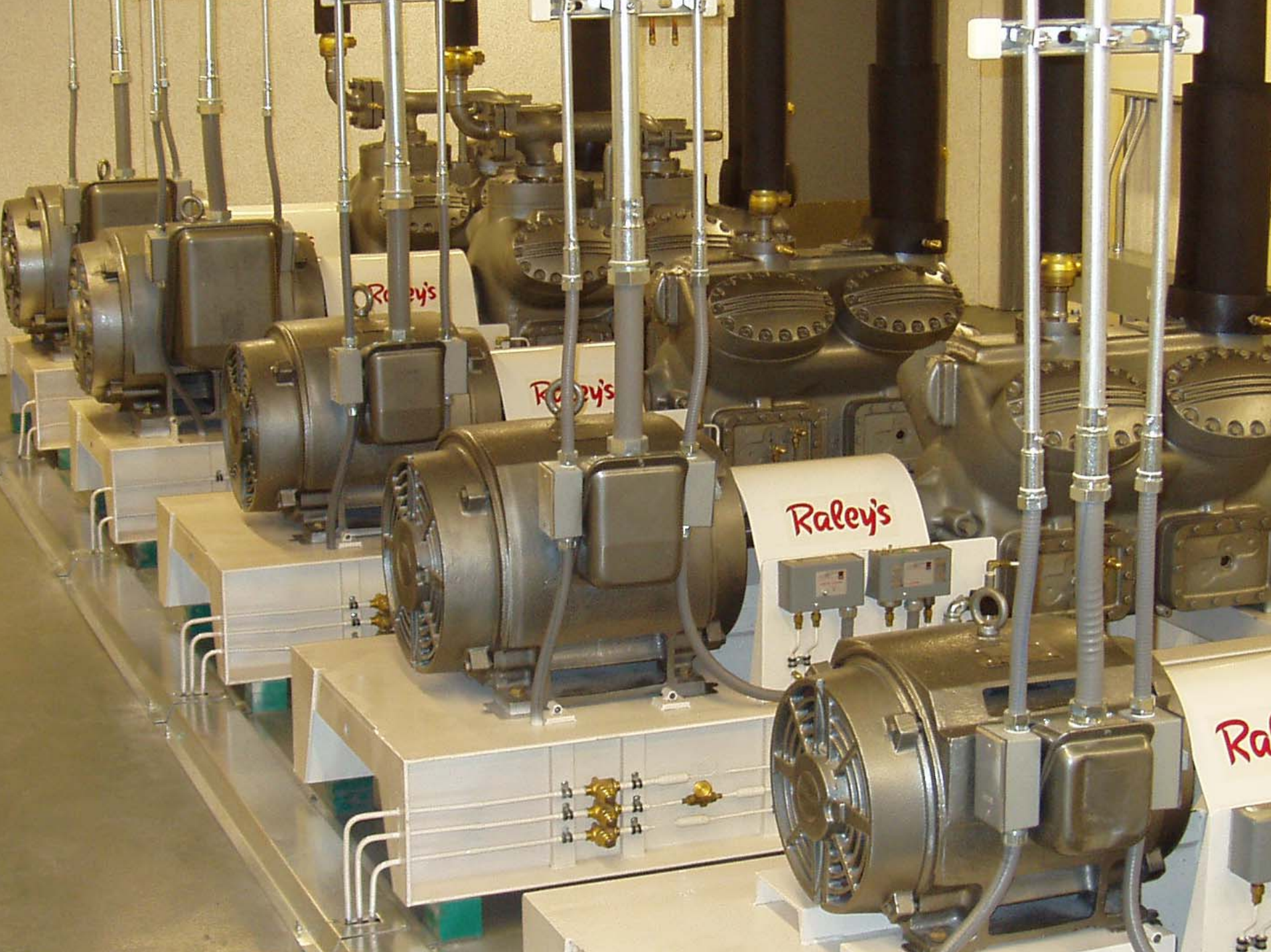
- Main Air Handlers
- Exhaust Hoods (Melink)
- Condenser Fans
- Compressors

The Basics

- Change Frequency from 60 cycles
- Change output voltage
- Change speed of motor.

Raley's Compressor Test

- Added VFD's to all six compressors
- Existing store with a full year of history
- No other major changes to the refrigeration system
- Purpose was to solve starting problem and to save energy.



Raley's

Raley's

Raley's

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The Results

- Solved our starting problem
- Reduced energy by about 2%
- Reduced cycling
- Stabilized suction pressure

Store #443

- HT1 16
- Unl 0
- HT2 61
- Unl 0
- MT1 99
- Unl 0
- MT2 93
- Unl 0

Store #410

- HT1 70
- Unl 818
- HT2 155
- Unl 0
- MT1 53
- Unl 490
- MT2 150
- Unl 4

Store #443

- LT1 12
- Unl 0
- LT2 23
- Unl 0

Store #410

- LT1 49
- Unl 755
- LT2 83
- Unl 0

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[Line Graph](#)

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Resource Use - Raley's

Total Company - Site Specific - Electric [kwh] (Raley's #443)

Wednesday, August 01, 2007 thru Thursday, July 31, 2008 vs. Prior Year

Month	Current	Prior	Change
August	225,833.10	228,794.29	-1.29%
September	215,782.48	214,496.90	0.60%
October	216,495.18	211,868.71	2.18%
November	209,859.95	210,786.29	-0.44%
December	206,563.63	212,077.90	-2.60%
January	206,428.62	208,603.11	-1.04%
February	190,684.36	187,696.65	1.59%
March	199,103.41	210,932.52	-5.61%
April	206,673.98	202,556.43	2.03%
May	214,004.58	214,876.33	-0.41%
June	213,168.75	212,927.36	0.11%
July	216,540.28	225,946.51	-4.16%
Totals:	2,521,138.30	2,541,562.99	-0.80%

Note:
Data Source: NORMALIZED DATA. Last updated 8/11/2008:14:11
-Excludes LATE and MISC Data.

What we learned

- Could not justify compressor drives on a retro fit job
- We could justify on new installation, as the cost is off set by not buying an MCC
- We will continue to use on all fan applications.
- Do not install bypass contactors