

INDOOR COMFORT

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NEWS

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Case Study

Advanced plastic cooling towers help ensure reliability of expanding hospital's HVAC system.

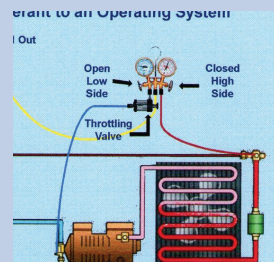
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Editorial Focus

What's new? What's been upgraded? Find out here as ICN takes a look at the latest releases in Heating Products.

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Technical Training

In Part 35 of his "Growing Green Technicians" series, contributing editor Jim Johnson takes a look at R-410A refrigeration systems

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CEC Adopts Nonresidential Building Energy Use Disclosure Program

Goal is to encourage energy conservation and upgrades.

By Ted Rieger,
Northern California Correspondent

The California Energy Commission (CEC) adopted regulations July 11 to implement a Nonresidential Building Energy Use Disclosure program as required under

legislation passed in 2007 (AB 1103, Saldana.) The regulations require an owner of a nonresidential building in California, in advance of the sale, lease, or financing of the building, to benchmark the building's energy use with the U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager system and to disclose statements



of the building's energy usage to potential buyers, lessees, and lenders. The long-term goal is to encourage energy conservation and upgrades in nonresidential buildings, by disclosing energy use data and features in order to add value to these buildings for prospective buyers and tenants.

In a presentation at the adoption hearing,

CEC staff project manager Justin Regnier explained, "Energy represents up to 30% of the total cost of operation of an office building. These are controllable costs that can be managed through efficiency improvements, unlike most other operational costs, such as mortgage or lease payments and taxes that tend to be fixed." Regnier noted that most

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New HVAC/R Training Courses Offered in PG&E Territory

The Institute of Heating and Air Conditioning Industries, Inc. (IHACI) and Pacific Gas and Electric (PG&E) will offer a series of free training courses beginning October 2012.

Training classes include the popular North American Technician Excellence (NATE) training series, which consists of eight evening classes. In addition, System Performance and Air Distribution modules will

also be offered. Each module consists of four evening classes.

Currently, IHACI cosponsors training with Southern California Gas Company, Southern California Edison and San Diego Gas and Electric.

For details about IHACI and PG&E training, see the advertisement on **Page 21**. Registration will be handled by IHACI. Seating is limited to 50 students and is on a first-come, first-served basis.

For additional information, please contact IHACI at (818) 551-1555.

Case Study



These Carrier open-drive reciprocating compressors were part of the Food 4 Less supermarket's refrigeration system that was converted from R-22 to R-407F by RSI of West Sacramento. (Photo by Ted Rieger)

With Broken Condenser Unit, Supermarket Sees Opportunity

By Ted Rieger, Northern California Correspondent

Following the unexpected and sudden failure of a condenser for the refrigeration system at a Food 4 Less supermarket in Woodland, Calif., Refrigeration Solutions, Inc. (RSI) provided a temporary replacement condenser and recharged and converted the system from R-22 to R-407F refrigerant, resulting in minimal downtime for the store's operation.

The refrigeration system served the store's entire cooling load for all refrigerated display cases, its backroom meat and produce cold storage units for inventory, and the store's HVAC system. The condenser went down at 2:30 am on a Thursday morning, and RSI was able to have the refrigeration system running and the store open for business again

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Daikin Engineer Named New ASHRAE President

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Be aware of the safety and liability issues when using flammable refrigerants.

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INDOOR COMFORT NEWS

The Importance of Knowing Statutory Laws on Public Works Projects

By Sam K. Abdulaziz & Kenneth S. Grossbart
Abdulaziz, Grossbart & Rudman

It is very important to not only comply with all of the terms and conditions of a contract, but also any statutory laws in place that may govern the project as well. This is particularly true on public works projects.

In the case of *G. Voskian Construction, Inc. v. Alhambra Unified School District*, the issue of change orders is once again at question. This particular project involved two separate contracts. The first contract was for improvements on a relocation project and the second contract was for a fire alarm contract on the same jobsite. Voskian was the general contractor on both

projects. Time was of the essence on these contracts because the District wanted the projects done before school resumed in the fall.

Both contracts indicated that modifications or changes could only be made if they were agreed to in writing between the contractor and the Assistant Superintendent or her designee. Because of the rush that the District was in to get the projects completed, the Assistant Superintendent indicated that Voskian should deal with the construction manager to finalize change orders. Rather than wait for the District to approve all of the change orders and hold up the job, the District would “bunch” the change orders together and process them at a later time.

Voskian discovered that the plans and specifications for the relocation project contained errors which required changes as well as a second contract to cover the work for the fire alarm system. New plans were prepared for the fire alarm system portion of the project and bids were received based on the plans. Voskian was the lowest bidder and entered into the second contract with the District.

After Voskian was awarded the bid for the fire alarm system, he realized that the plans were incorrect. The project actually needed more alarm devices, conduit and wiring than the plans had shown. Voskian submitted change orders for both of the contracts and proceeded to do the work based on oral assent from the construction manager.

The District refused to pay Voskian and he then filed a claim with the District per Government Code section 910 et seq. The District rejected the claim and litigation ensued. The trial court found in favor of Voskian. The District appealed and the Appellate Court

affirmed the trial court’s decision.

The Appellate Court indicated that although it was accurate that change orders for extra work must be in writing, the District did eventually approve the change orders on the first contract long after the work was completed so that was no longer at issue. The change orders were approved and therefore the District needed to pay Voskian for those change orders in the first contract.

As to the second contract, since Voskian’s initial bid was based on incorrect plans and specifications as supplied by the District, the Appellate Court found that Voskian was entitled to payment for the extra work. This decision was based on many prior court decisions wherein a rule regarding public works contracts have been set. The rule is that if a public works contractor is misled by incorrect plans and specifications that are issued by the public authority then that contractor is entitled to recover

for the extra work and/or expenses because of the extra work necessary for the misrepresentation in the plans and specifications.

We had previously written about another case, *Greg Opinski Construction, Inc. v. City of Oakdale*, wherein Opinski did not follow the contract with respect to change order procedures. Opinski ended up owing \$65,000 in liquidated damages because of delays even though he did the work on the change orders (which were not accepted). Voskian was lucky that the District eventually accepted the change orders on the first contract and had incorrect plans on the second contract or Voskian could have been in the same boat as Opinski.

We cannot reiterate enough how very important it is for all contractors to completely understand what the contract says, to know the statutory laws that affect projects, and to make sure that all change orders are in writing. In the same situation, you may not be as lucky as Voskian!

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Food4Less R-22 Changeover

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by Friday afternoon.

RSI president, owner and founder Sam Wilson noted that the store had been planning a refrigerant changeover for the system from R-22, given its price increase, reduced availability, and the planned production phase-out of R-22 by 2020. Wilson was able to access and connect a used Hussmann condenser unit, and noted, “With the failure of the evaporative condenser, the system lost its whole charge, so it was a good time to switch to a new, environmentally-friendly refrigerant, as there was no reason to go back to R-22.”

Wilson worked with Refrigeration Supplies Distributor (RSD) and its three nearby branches in Rancho Cordova, Roseville and Sacramento that supplied the refrigerant and the parts to convert the system. RSD helped select a replacement refrigerant suitable for the system. Tom Hardy of RSD said, “We looked at the refrigerant conversion charts and specifications, and R-407F provided similar performance capacities and efficiencies to R-22 across the range of low, medium and high temperature applications for which the store’s refrigeration system operates.”

R-407F is an HFC class of

refrigerant manufactured by Honeywell under the label of Genetron Performax LT as an R-22 replacement that is a blend of 30% R-32, 30% R-125, and 40% R-134a. It is a non-ozone depleting refrigerant and has a lower global warming potential (GWP) than R-22. The recommended lubricant to use with R-407F in the compressors and system is polyolester oil (POE), a synthetic oil.

Food 4 Less has a two-stage refrigeration system with six Carrier 5H line open-drive reciprocating compressors with a total system capacity of about 210 tons. Conversion required replacing all rubber/elastomer seals and O-rings in the refrigeration system’s valves using kits, such as Wolverine reseal kits, supplied by RSD. Rubber seals can shrink and leak if used with R-407F and POE oil. “Converting the compressors’ shaft seals was a big deal, and we had to replace and rebuild any valve section with an O-ring using a reseal kit, which is one of the major aspects of a refrigerant conversion,” Wilson said. Seal replacements are recommended for shaft seals on open drive compressors, older solenoid valves, heat reclaim valves, Schrader fittings, and sight glass gaskets.

RSI will install a new, more efficient Baltimore Air Coil (BAC) Trillium Series air/water con-

denser with a Dry-Coil Adiabatic Design that saves energy, reduces refrigerant charge and reduces operating costs. An on-demand adiabatic pre-cooler uses water only on the hottest days to maintain condensing temperatures better than typical air-cooled condensers. The BAC Trillium also uses high-efficiency electronically commutated (EC) motors and variable fan speed control. In addition to energy and cost savings, this high-efficiency condenser is expected to save the store an estimated 1 million gallons of water/year. “I think we will start seeing more of these condensers being installed in areas where water conservation is a big issue,” Wilson said.

RSI, based in West Sacramento, specializes in commercial and industrial refrigeration system installation and service and is the factory authorized distributor of Hussmann Refrigerated Display Cases and systems for Northern California. Wilson, who has 35 years of experience in the refrigeration industry, started RSI in 2005 and holds a C-38 refrigeration contractor’s license. The company’s clients include supermarket and grocery stores, food processing and packing facilities, and refrigerated warehousing operations. RSI is planning R-22 refrigerant conversions at other supermarkets in the region, including a change-out to R-407F at a store in Davis before the end of 2012.

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