## **BLUE Q Certifications & Citations**

Cooling Systems Energy Efficiency Solution - Certifications, Citations, Notable Project Engagements

Blue Q has earned a litary of certifications and citations, some of which are shown below:

- A) Federal Thermal Science Research Center under A.R.I. criteria, COP increase of 11.88%, Dr. Stan Johnson @ University of Tennessee.
- B) National Institute of Standards and Technology (NIST) for the Department of Commerce, in BOILING HEAT TRANSFER, 73% increase in the ability to expel HEAT. Scientist Mark Kedzierski Report www.bfrl.nist.gov/pdf/NISTIR7132pdf.
- C) Tennessee Valley Authority (TVA) Federal Utility Co. field test showing a drop in (kWh) by 25% and a drop in (kW) demand by 11%. Mr. John Willingham, Energy Services Supervisor.
- D) Southwest Research Institute FALEX-TEST. Increase from 610 lb. base line to 1,581 lb. after the addition of Blue Q.
- E) ASHRAE eNewsletter, 11-24-2005, cited researcher, Mark Kedzierski, at the National Institute of Standards and Technology for documenting outstanding and promising results from Blue Q test.
- F) Fort McPherson Army Base in Georgia, July 2005, using ASHRAE Guideline-14, Siemens developed testing and evaluation protocol for Carrier (reciprocating with 4 compressors) and Trane (rotary with two screw compressors) chillers. Increased chiller efficiency (kW/ton) on the Carrier by 16%, depending on temperature and loading; on the Trane by 30%, depending on temperature and loading. Final test results cross-checked by CH2MILL, national engineering firm. (Dr. Alex Lekov @ Lawrence Berkley National Laboratory and Dr. Rob MacMillan @ Siemens Building Technologies in Houston, TX; Dr. Rick Parks mechanical and thermal engineer/consultant)
- G) Siemens Building Technologies installed Blue Q in two 210-ton Carrier air-cooled chillers at Siemens Westinghouse Houston Service Center, August 2005. Improved efficiency by 14% with a 1.1-year payback and a saving of \$32,231/year. (Dr. Rob MacMillan @ Siemens Building Technologies in Houston, TX; Dr. Rick Parks mechanical and thermal engineer/consultant)
- H) Siemens Building Technologies installed Blue Q in five 700-ton McQuay water-cooled centrifugal chillers at Siemens plant in Charlotte, NC, June 2003. Two of the units were shutdown, as they were no longer needed due to increased in capacity by 56%. (Dr. Rob MacMillan @ Siemens Building Technologies in Houston, TX; Bill Character Plant Chief Engineer @ Siemens Plant, Dr. Rick Parks mechanical and thermal engineer/consultant)
- I) Siemens Building Technologies monitored and evaluated five air-cooled units at Dallas County Probation and Tax Offices that were treated with Blue Q in June 2005. Energy reduction of over 18% and demand reduction of 13.5% with potential annual savings of \$925/year. (Dr. Rob MacMillan @ Siemens Building Technologies in Houston, TX)
- J) Lincoln Property Company in Dallas, TX, April 2003. In a high-rise office building a 600-ton centrifugal chiller, which was installed in 1983, was treated with Blue Q. Increased efficiency by 18.6%. (Blum Consulting Engineer, Rex Raiza with Raiza Engineering Software)