



21CR Project 611-20070

Variable Primary Flow Chilled Water Systems: Potential Benefits and Application Issues

Updated 20 April 2004

Objectives:

Assess the potential benefits and problems associated with the design of variable primary flow chilled water systems. Issues to be addressed include: energy savings potential, control, economics, plant selection and design.

What information/items will result from this project:

Comparison of constant and variable primary flow performance for a variety of chiller types, plant configurations, load profiles, and energy rate structures. Deliverables to include survey results and application guidelines derived from this study.

How are the results likely to be applied:

The results will be applied by consulting engineers when designing piping and pumping systems. Also the results will lead to changes in building and chiller control systems to reduce pumping energy (control engineers and contractors).

Research Subcontractor:

Pennsylvania State University (Principal Investigator: William Bahnfleth, Ph.D.)

Status:

Project was concluded in the second quarter of 2003 and a final report approved for release. The final report is available to download at no cost from the ARTI website.

Responsible 21CR Subcommittee: HVAC&R Energy Efficiency (formerly HVAC&R Energy Efficiency)