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Battelle Number(s):

14028-B

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Available Technologies

Automated Centrifugal Chiller Diagnostician

SUMMARY

Researchers and engineers at PNNL have developed an automated, sophisticated, multi-level, real-time centrifugal chiller diagnostician with diagnostics available under partial load conditions. This diagnostician provides auto-analysis of system efficiency and diagnoses the most probable causes of centrifugal chiller operations caused by common failures. It provides a generic diagnostic tool applicable to most major brands of centrifugal chiller units.

ADVANTAGES

- * automated, real-time diagnostics in visual display that identifies most probably causes of inefficiencies centrifugal chiller operations
- * applicable to most major brands of centrifugal chiller units
- * wide range of information can be monitored and displayed providing information about most common failures
- * unique features include:
 - * applied a polynomial function generator to support partial load diagnostics rather than just full load diagnostics (industry standard)
 - * event analysis and counter
 - * event based data logging
 - * innovative TCP/IP data acquisition for string type data
 - * improved OPC communications
 - * advanced intuitive GUI
 - * diagnostic factory-engineered curve fit algorithms for a centrifugal chiller
 - * ability to interpret string data (text messages) for faults vice just numerical data



Technology Portfolio(s)

- » Building Efficiency
- » Energy Efficiency Solutions

Potential Industry Applications

- » Aerospace & Defense
- » Automotive & Transportation
- » Chemicals
- » Energy & Utilities
- » Oil & Gas

Matt J. Love
Pacific Northwest National Laboratory
(509) 375-2194
matthew.love@pnnl.gov
<http://availabletechnologies.pnnl.gov>



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