KAISER PERMANENTE EAST DENVER MEDICAL OFFICES – CASE STUDY

WHO: Kaiser Permanente was founded in 1948 and is recognized as one of America's leading health care providers serving 12.2 million members in 8 states and District of Columbia. The East Denver Medical Office (KP-EDMO) was built in 1977 and is operated by Kaiser Permanente Colorado which was founded in 1969 and now serves over 540,000 members in three service areas. The KP-EDMO facility provides primary care, specialty care, vision, and imaging services with a laboratory, pharmacy and other amenities.

THE PROBLEM: The Energy Star, LEED facility contained medical equipment experiencing frequent failures resulting in higher operating costs. The Kaiser Permanente staff also was experiencing chiller problems and was anticipating replacing the chiller. In conjunction with the equipment problems, KP-EDMO was initiating a sustainability program by deploying solar pv parking structures and converting their lighting to LED fixtures which was aggravating the power quality problem in the facility. Accentz, Inc. was contacted in early 2014 to help Kaiser Permanente solve these problems and to achieve reduced energy consumption. MPTS technology was deployed to address the problems.

THE TEST: A four-month test and performance verification program was conducted by Kaiser Permanente internally with one MPTS unit installed on the HVAC-chiller which was the largest energy consuming piece of equipment. The equipment often experienced internal surges and spikes impacting facility electronics, computers and other electronics.

THE RESULTS: The MPTS technology proved itself by reducing the HVAC-chiller's energy consumption by 59%, THD harmonics by 75%, and improved the efficiency (power factor) 29% on average during the test period. The MPTS unit was connected in the electrical network before the HVAC-chiller to increase energy efficiency by providing clean power, recycling wasted electrical power, and decreasing the electrical demand and consumption. Management realized decreases in current (19%) and KVA (21%), maintaining stable voltage for connected equipment thereby protecting their investment in expensive medical and electrical equipment. The team realized reduced cost of operations from reduced service, repair, replacement and maintenance costs, and reducing total electrical demand, consumption and CO2 emissions. Plus the chiller is still operational and did not require replacement. The sustainability savings resulting from using this technology during the test period was equivalent to a decrease of 78,213 pounds of coal burned in a power plant, and equal to a reduction of 160,532 pounds of CO2 greenhouse emissions. Management purchased the test unit. They then purchased three more MPTS units that were installed in a separate Denver facility. Several proposals are pending funding. Corporate management has also approved deployment of MPTS units in other Kaiser locations nationwide.

TransPower Company: Based in Aurora, CO, introduced the patented MPTS technology in North America in 2011 and received UL certification in 2013. MPTS uses dynamic impedance matching and synchronous processing through solid state electronic switching, providing dynamic, accurate and precise corrections based on Jacobi's Law (1840) optimizing each phase in the electrical current to attain maximum efficiency. When MPTS is installed in electrical networks, the results include clean electrical power, fewer failures, reduced maintenance, lower electrical demand, and less downtime.

21ST CENTURY POWER SAVINGS SOLUTION = CASH FLOW OPPORTUNITIES

MPTS, Power Management Controls System

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MPTS Unit Installed by Accentz
on the HVAC – Chiller
June to September, 2014

Benefits from MPTS

MPTS Lowers Operating Costs

- **Decrease** Current and KVA significantly
  - Avoids Overload conditions and hot spots in panels and equipment
  - Decreases I^2R losses, KVAr, Harmonics
  - Releases electrical capacity, decreases the load on panels and transformers, creates capacity for additional loads
- **Maintains** stability of voltage for connected equipment
- **Protects** investment in expensive electrical and mechanical equipment
- **Reduce** service, repair, replacement, and maintenance costs
- **Reduce** total cost of operating mechanical and electrical equipment
- **Reduce** total electrical power demand and consumption
- **Reduce** C02 Emissions

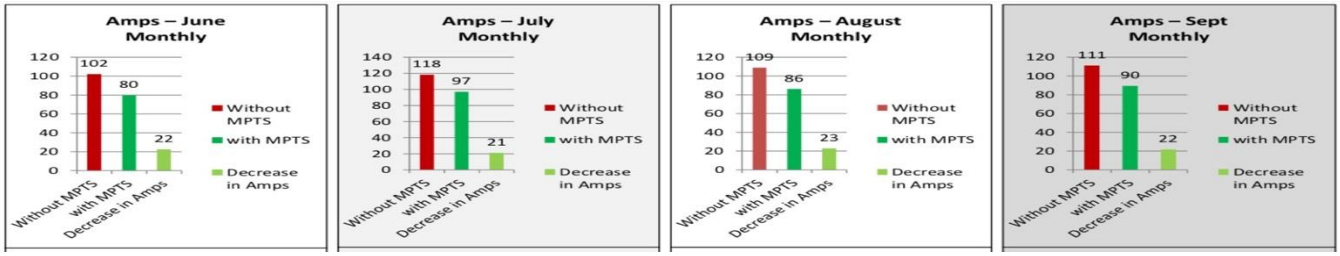
Significant Reduction in CO2 Emissions

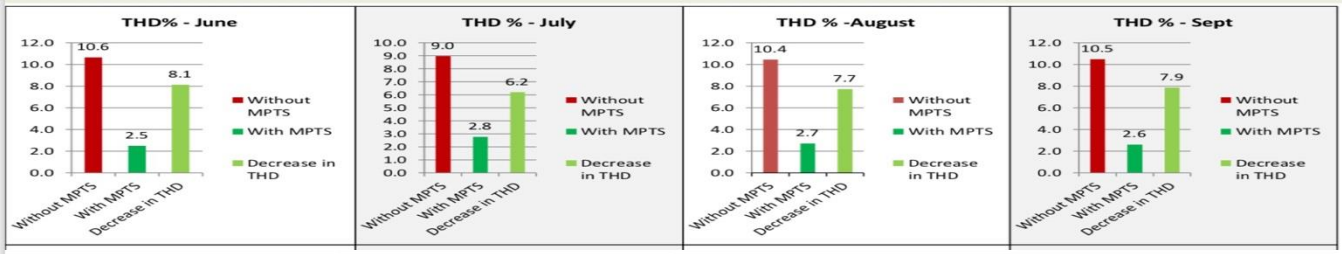
Significant dollars savings from the benefits of MPTS

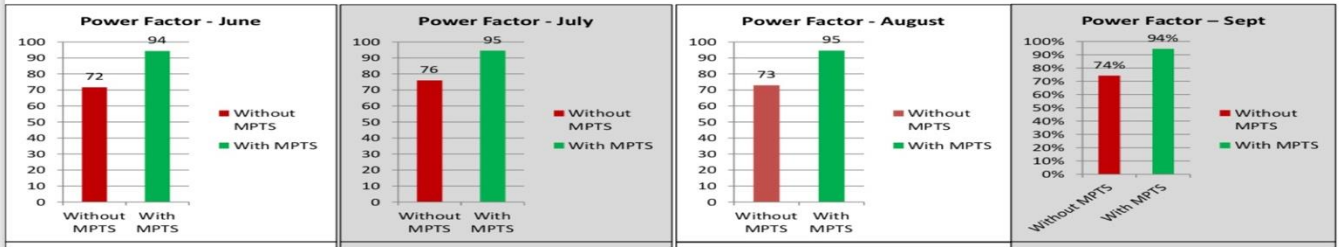
MAXIMUM POWER TRANSFER SOLUTION - MPTS

Reduction in Power Generation and Carbon Emission

Power Quality Improvement and Energy Efficiency During Test Period







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