



An Energy Efficiency Workshop & Exposition

Palm Springs, California

Special Considerations for Energy Projects at Healthcare Facilities

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Overview/Agenda

- Special Operational Characteristics
- Unique Environmental Conditions
- Implementing Energy Projects
- Opportunities for Savings
- Successful Energy Projects
- Questions



Special Operational Characteristics

- 24 hour/365 days/year Facilities
- Multi-building Campus layout
- Multi-use Facilities: Office Buildings, Research facilities, “Traditional” Hospital facilities
- Overnight/Extended Stay facilities; Nursing Home Care



Unique Environmental Conditions

- Operating Areas - Air flow & Positive Pressure Requirements
- Equipment Cooling Needs
er MRI, Computers, etc.
- Medical Waste Handling & Disposal
- Patient Temperature/Humidity Requirements



Implementing Energy Projects

- Survey Requirements
 - ⇧ How/When to Take Measurements (Cannot get access to all places, all of the time)
- Approvals
 - ⇧ Multi-Decision Makers for Different Areas (Directors, Chiefs of Staff, Dept. Heads, Non Technical Stakeholders)



Implementing Energy Projects *Continued*

- Construction of Projects
 - ⇧ Critical operations
 - ⇧ After hour construction
 - ⇧ Patient/healthcare provider sensitivity
- Measurement & Verification
 - ⇧ Changes in use
 - ⇧ Coordination with other projects



Successful Energy Projects by Johnson Controls

- Dept. of Veterans Affairs Hospitals: Salt Lake City, San Francisco, Tucson
- Private Hospitals: Grady Health System, East Jefferson General Hospital, St. Joseph Medical Center-N.Y.
- University Hospitals: University of Wisconsin, Univ. of Texas Health



Department of Veteran's Affairs

- VA San Francisco - Replaced Boilers w/Thermal Fluid Heater Systems
- VA SLC - Replaced gas-fired incinerator w/Autoclave Technology
- VA Tucson - Replaced Traditional Steam Traps with new, "Orifice" Steam Traps



Opportunities for Savings

- Medical Waste Disposal
- Sterilizers
- Water & Irrigation
- Central Plants: Boilers & Chillers
- Other traditional opportunities: Lighting, Building Controls, HVAC improvements



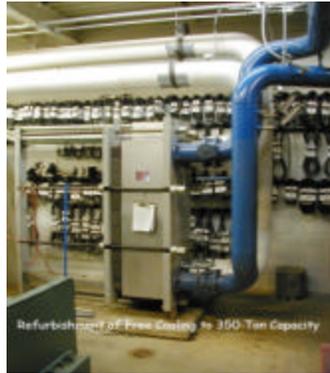
VA-SLC Rotoclave



New Biomedical Waste Sterilizer - Rotoclave



VA-SLC Flat Plate HX



Refurbishment of Free Cooling to 350-Ton Capacity

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VA-SLC Solar Recommission



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QUESTIONS ???