



What if...

Anderson Area Medical Center was able to better manage energy costs by leveraging low off-peak electricity prices?



#### THE SITUATION

#### How do you control rising energy costs and increase the reliability of the facility's infrastructure?

Anderson Area Medical Center (AAMC), a part of the AnMed Health system, is a licensed and fully accredited 533-bed facility located on a 16-acre campus near downtown Anderson, South Carolina. AAMC offers a wide range of general and specialized diagnostic, surgical and treatment services and also operates one of the state's two Level II emergency and trauma care units. The medical center, which has a medical staff consisting of more than 400 physicians, serves the residents of four counties in western South Carolina and four in northeast Georgia.

AAMC uses large fossil-fuel boilers to produce steam used for heating, water heating, cooking, sterilization and waste-management purposes. Duke Energy recently had assisted a local university with the installation of an electric boiler system that was generating a 14-15 month simple payback. With rising gas costs, Duke Energy realized that other customers who needed constant steam usage could benefit from reduced energy costs and increased reliability.

Because of Duke Energy's good working relationship with AnMed Health, we felt certain they would benefit by installing an electric boiler. With rising natural gas costs and with existing gas prices expected to remain high for the foreseeable future, the medical center needed a way to hedge against unpredictable energy prices. If hospital officials installed an electric boiler

to augment their existing fossil-fuel boiler, they would have the option to choose which boiler to use based on energy prices. The customer would have more control over managing rising energy costs.

#### THE PROBLEM

#### How do you reduce costs?

AAMC used a fossil-fuel boiler to meet its steam needs, and the facility needed more stable prices. Duke Energy personnel asked hospital officials to share their natural gas consumption and cost records. After receiving this data, our experienced staff performed a high-level simple payback analysis. After examining available floor space options and previous consumption data at the medical center, Duke Energy knew its innovative solution of adding a 12 kV, 5.6 megawatt, 17.4 foot tall by 5.5 foot diameter electrode steam boiler would make good economic sense.

#### THE SOLUTION

#### Cutting-edge solutions that leave your budget intact

Electric boilers provide an option for keeping fuel costs as low as possible, have no on-site emissions and are relatively simple to install. Duke Energy's optional time-of-use rate categorizes off-peak hours as all weekend hours plus Monday through Friday from 1 p.m. to 6 a.m. in the winter and 9 p.m. to 1 p.m. in the summer. With Duke Energy's stable low-cost electricity prices and with off-peak and hourly-pricing products an additional option, AAMC could minimize its energy expenses. An electric boiler would augment the fossil-fuel boiler the hospital already had. The fossil-fuel boiler could be used during peak hours and the electric boiler during off-peak hours.

AAMC officials were familiar with electric resistance boilers but not the electrode boiler technology and were unsure of the attractive electric solution. After hearing our recommendations, members of the medical center's facilities team were excited and wanted advice from their outside engineering firm. The firm's advice — move forward as the technology and application will work. Duke Energy collaborated with the firm to install the recommended 5.6 megawatt electric steam boiler. This additional boiler enabled the medical center to better manage high natural gas prices and leverage Duke Energy's low off-peak electricity prices.

#### THE DETAILS

#### Duke Energy electric rate options, technology, common sense

Duke Energy's Boiler Services offer win-win solutions for customers who need solutions. We have the

- required knowledge and understanding of fossil-fuel boiler operations and efficiencies.
- experience and expertise to evaluate true BTU costs.
- established relationships with key vendors experienced with electrode boiler applications built on "trust" and "respect."

With its proven track record, Duke Energy can advise on design, assist in installation, furnish comprehensive maintenance contracts and provide financing options that make high-technology energy systems feasible for





## Anderson Area Medical Center saves \$170,000 per year with a 24-month simple payback.

its customers. Duke Energy drew on its expertise of hybrid boiler systems to provide Anderson Area Medical Center with the right mix of technology and common sense.

Later, we explained the savings opportunities using Duke Energy's Hourly Pricing (HP) Rate. The HP Rate provides hourly variable market-priced energy so customers can adjust operations to take advantage of lower energy prices during winter on-peak hours.

"We are pleased we have been able to work with Anderson Area Medical Center's facilities team to develop an innovative solution that reduces the hospital's exposure to fluctuating natural gas prices," said Sandra Meyer, Duke Energy's group vice president for Customer Service, Sales and Marketing. "Electric boilers provide our large customers with an exciting new option to keep their fuel costs as low as possible, have no site emissions and are relatively simple to install. In addition, Duke Energy's stable overall power rates and our off-peak and hourly-pricing products provide industrial and commercial customers with great options to minimize their electricity expenses."

### THE RESULTS

#### Managing energy and prices more effectively

Anderson Area Medical Center experienced additional benefits from Duke Energy's Boiler Services.

- **Reliability:** Adding an electric boiler provides the medical center with redundancy that improves reliability in its utilities.
- **Optionality:** Having an electric option gives leverage when negotiating future gas prices.
- **Improved Quality of Steam:** The electric boiler produces a better quality of steam and eliminates the need for moisture separators in the lines.
- **Lower Maintenance Costs:** The maintenance costs are far less with an electric boiler.
- **Quiet:** The electric boiler is very quiet making for a much more conducive work environment in the boiler house.
- **Ease of Operation:** The electric boiler is easy to control.

AAMC already has installed a second 5.6 megawatt electric boiler.

### Quick Study

**Anderson Area Medical Center** needed to better manage high natural gas prices and leverage Duke Energy's low off-peak electricity prices.

**Concerns:** Rising natural gas costs, the uncertainty of future gas costs and maintenance issues.

**Solution:** Duke Energy's Boiler Services. We have the required knowledge and understanding of fossil-fuel boiler operations and efficiencies. We have knowledge about electrode boilers and have established relationships with key vendors experienced with electrode boiler applications.

**Why it works:** "The electric boiler gives us a built-in hedge against unpredictable and high natural gas prices while continuing to reliably meet the medical center's steam needs. We expect to pay for the boiler and its installation within two and a half years with the money we will save in natural gas costs." — Monroe Brown, Energy Manager for Anderson Area Medical Center

**Results:** Anderson Area Medical Center is projected to save \$170,000 per year with a 24-month simple payback.

### Anderson Area Medical Center at a Glance

Anderson Area Medical Center, one of the largest hospitals in the state, offers a wide range of services, including open-heart surgery, comprehensive cancer care, family-centered birthing and post-partum care and state-of-the-art radiological and imaging services, as well as general and specialized surgical and endoscopic procedures. The medical center is one of four hospitals in the AnMed Health network.



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