Energy Management

How does a condensing economizer decrease operating cost of our laundry facility?

A. L. Portland, Maine

A laundry service is critical to hospital operations. In order to maintain a consistent and adequate supply of sanitary linens sufficient for the comfort and safety of patients. In correlation, operating costs of a laundry facility, maintaining a heated water supply; natural gas and electricity prices, and environmental regulatory mandates are of heightened concern for hospital administrators who look toward implementing cost-effective and compliant solutions. The boiler room can provide that solution.

But steam generated steam remains an efficient method of heat transfer for most process applications, and the green technologies available today help recover heat (and in certain cases water) that may be lost in the steam generation process. Major savings can be realized by hospitals by utilizing and increasing the efficiency of the existing system to recover both sensible and latent heat for reallocation to another process application, for example, heating water applied to the hospital's internal laundry facility.

An innovative boiler latent heat recovery technology is a condensing economizer. By installing a condensing economizer, hospitals can improve overall heat recovery and increase steam system efficiency by up to 10 percent. A simple method for reviewing the possible savings is by calculating 10 percent of your annual fuel bill, which potentially could be subtracted from the bottom line operating costs for the facility. If this figure is significant, a full quotation should be initiated, reviewing all aspects of the existing steam system and where the heat can be added to a water stream.

Increased efficiency is achieved as a result of the working through an economizer on its way to the boiler, thereby recovering energy from the flue gas that would otherwise be lost. By preheating the boiler feed water with energy harnessed from the exhaust stack gases, economizers offer the potential to reclaim large amounts of heat and return it to a colder water stream.

What is key to a condensing economizer is the temperature range in which the system is operated. A large savings increase occurs when the flue gas temperature is decreased to below 135 degrees Fahrenheit and the moisture in the flue gas is condensed, but this is generally most effective when burning natural gas or other lean fuels.

A condensing economizer operates in a colder environment than a traditional economizer. A condenser where the tubes and flue gases may be under 200 degrees Fahrenheit, and it is possible to recover both sensible and latent heat from the flue gas. When the flue gas temperature is lowered into the condensing range (approximately 135 degrees Fahrenheit), the water vapor in the flue gas (usually 30 to 15 percent of the exhaust mass) is condensed back into a liquid. The heat that comes from the condensation adds significantly to the total energy recovery and translates directly to higher dollars saved.

Condensing economizers require site-specific engineering and design and a thorough understanding of the effect they will have on the existing steam system and water chemistry. A hospital interested in upgrading its boiler system with a condensing economizer should first determine its boiler capacity, average steam production, combustion efficiency, stack gas temperature, annual hours of operation and annual fuel consumption.

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Television

What is the difference between consumer-grade and healthcare-grade TVs?

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With television no longer being exclusive to the domestic home and a larger focus being placed on the patient experience and satisfaction, many healthcare facilities are able to provide a much more “home-like” experience. TV’s have evolved rapidly, making it very attractive to incorporate this technology into a large-scale facility but with cost variances often favoring the consumer, it would be easy for consumers to be swayed to purchase a consumer set, over a healthcare-grade set. Hospital-grade televisions are designed with specific features that consumer TVs cannot offer, making them safer for the patient and easier for staff to use. Conventional consumer sets are not designed for healthcare use hence, televisions are engineered and constructed with a different end user in mind. Manufacturers design healthcare-grade HD TV sets specifically for use in the hospital setting and to withstand heavy wear and tear and long operating hours. Designed for Patient Safety

Facility managers tend to focus on providing a patient experience, with limited disturbance to others in the facility. One common concern is the noise levels generated by televisions in patient rooms. Other technologies, such as ceiling ventilation, are designed to reduce noise levels and make the patient experience as comfortable as possible.

Designed for Patient Satisfaction

Clinicians want their patients to have a comforting experience, and patient satisfaction is of utmost importance to many hospitals. Healthcare television aid in creating a more “home-like” atmosphere and experience as well as making a much more efficient workflow for clinicians. USB cloning technology, volume-limit controls, auto-sensing input sources and a one-touch speaker function all make for an enjoyable patient experience, with limited disturbance to others in the patient’s room. Auto-sensing input sources and dedicated input channels ensure that multiple sources of content from a variety of technologies to be displayed quickly and easily. In addition, from front panel controls is a convenient clinician button, preventing menu settings from being changed accidentally.

In addition to the healthcare-grade televisions, interactive on-demand education systems are becoming integral solutions to improve patient satisfaction because of their ability to increase clinical efficiencies, provide automated service recovery, and allow the patient to become involved in the recovery process. In most cases, the televisions serve as the medium for the delivery of the educational content.

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» Submission Deadline is October 15, 2010. Go to www.practicegreenhealth.org/tools/webinars to download a webinar submission form. Contact education@practicegreenhealth.org or info@ggc.org for more information.

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