by Phil Sprague

Ozone laundry systems save water, energy and chemicals

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There is a new energy efficient alternative to conventional laundry systems; it is referred to as the Ozone Laundry System. This is a new technology of creating ozone with high technology equipment and injecting the ozone gas directly into the laundry wash cycle. Ozone is a compound in which three atoms of oxygen are combined to form the molecule O_3, which is a strong, naturally occurring oxidizing and disinfecting agent.

How ozone works

The ozone laundry system works by drawing outside ambient air into a compressor and creating concentrated "ozone" through a highly technical process of electrifying oxygen. To implement the washing process, the ozone gas is injected into the water supply line that feeds into the washer extractors. This ozone injection purifies and disinfects the wash water and decomposes fat, oil and grease in a very efficient manner. Typically, the ozone system is not recommended for use on synthetic fabrics. Therefore, a separate washer may be required in the laundry with traditional washing capabilities.

Save on space and water

On-premise laundries in hotels typically have a separate water heating system because laundry systems require a minimum of 140°F water, and in some cases 160°F. In most cases, the ozone system completely eliminates the need for domestic hot water in the wash wheel. This can be extremely cost effective for the hotel, especially during new construction, since space does not need to be allocated for laundry water heating equipment. There is, however, added capital cost for the system itself, which takes up a minimum amount of space in the laundry. Additionally, after factoring in potential sewer credit, the on-premise ozone laundry system can save 20% - 40% for domestic water use on average, and reduce the natural gas used to make domestic hot water by up to 80%. The ozone system can also reduce the use of chemicals by as much as 30%.

Pictured below: This Diamond Mini ozone laundry system by PuroTek is designed for limited service hotels with little food and beverage or heavily soiled linen.

Other benefits of ozone laundry systems

The primary benefits of an ozone laundry system are as follows:

- Ozone is safe and not dangerous at laundry usage concentrations.
- Ozone has oxidizing power 50% higher than chlorine, so it is very effective at sterilization.
- Ozone acts 3,000 times faster than chlorine as a bactericide and is also a very effective viricide.
- Ozone does not need high water temperatures to clean insoluble soils because it reacts chemically, oxidizing them into soluble solids that wash away.

As suggested by some vendors, there are additional side benefits to an ozone system, including:

- Longer lasting linens
- Better disinfection
- Less and cleaner waste water
- Less odors
- Reduced labor cost
- Reduced wash time

This new technology is becoming more accepted in the hotel industry and is being used by some very reputable hotels. Companies selling and servicing ozone systems are also relatively new; therefore, discretion should be used when evaluating proposals from any vendors recommending ozone laundries. Three nationally prominent companies that have had success with ozone laundries are PuroTek Corporation, IndustrOzone Technologies, and Green Suites® International. Information on these systems can easily be accessed on the Internet.

Given the new nature of this evolving technology, the most important factor when choosing a supplier of an ozone laundry system is to determine whether the company has a good track record with reputable customers. Also, try and ascertain if the company will be in business for many years to come and can supply unusual repair parts and ongoing scheduled maintenance service for the system. A hotelier must weigh these benefits when choosing whether it is prudent to make a relatively large capital investment in an ozone laundry system.

Investment analysis

The economics of an ozone laundry investment indicate that larger laundry operations are more cost effective than smaller ones, though many vendors do offer specially designed ozone systems geared towards smaller size on-premise laundries. The return on investment will vary from area to area throughout the country. Keep in mind that the cost of sewer, water and natural gas in a hotel's area has a direct effect on its return on investment. Since the recent cost of natural gas has been increasing rapidly, there will likely be a favorable economic return on an investment in the ozone laundry process. And, don't forget that reduced chemical costs should also be factored into the cost-benefit equation, as the ozone system will significantly reduce the amount of chemicals used.

Frequently, suppliers of ozone systems offer financing that can help generate positive cash flow for a property. In short, the monthly savings generated by an ozone system can be greater than the monthly payment, if structured properly. And, as always, be sure to contact the hotel's gas utility to determine if there are any special rebates available for installing an ozone system. ✧

(Phil Sprague is a member of the AHLA Executive Engineers Committee and president of PSA Hotel Energy Consultants. Based in Minneapolis, PSA Hotel Energy Consultants assists lodging companies and individual properties to develop effective, cost-saving energy strategies by auditing and assessing all energy consuming devices and appliances, and delivering comprehensive, customized recommendations in an actionable format. They can be reached at 952-472-6900.)