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BOILER TIPS

Whether you have a new, old or even a temporary rental boiler, proper maintenance and water treatment will optimize its operation.

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BOILER FOR RENT



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More than 160,000 industrial and commercial boilers are installed in the United States to produce steam and hot water for industries such as food, paper, chemical, refining, power and metals. Yet whether it is for an unplanned or planned maintenance outage, increased capacity requirements or because of an unforeseen project delay or act of nature, the demand for rental boilers will exist. When the need arises, there are many aspects of renting a boiler that users must consider and address. By understanding the rental process and following a few common sense guidelines, it is possible to select a rental boiler that is both cost effective and technically successful.

Understanding the rental process and following proper guidelines will minimize the risk associated with boiler rental.

Upfront planning is the most important step when renting boiler equipment. The first requirement is determining the total capacity and operating characteristics of the boiler system you will need. These items include the steam pressure design and operating pressure, temperature, fuel, electrical and emission requirements. To

meet capacity demands, often times multiple boilers can be arranged in parallel to any desired level. This may involve renting one or multiple mobile steam plants or trailer-mounted boilers.

If time is an issue and the required equipment delivery date is quickly approaching, consider mobile equipment instead of skid-mounted equipment. Mobile equipment is less costly to rent due to fast delivery. Also, a special foundation or footing may not be needed to support the equipment. For instance, trailer-mounted boilers (with capacities up to 120,000 lb/hr) are the most economical to rent when compared to skid-mounted boilers, as they avoid the need for new foundations, crane handling and special rigging.

The location also must be carefully evaluated to be sure it can handle the requirements of boiler equipment. The location must be accessible for the delivery and setting of heavy equipment, and it must be able to support the bearing load of a trailer-mounted truck and a boiler. The site also must have ready access to the building or process steam main and allow for easy connection to fuel, water and electrical power supplies. The connections must be verified that they are of sufficient sizes to meet the needs of the rental equipment. Early determination of proper sizing will save valuable time when the equipment arrives.

Carefully Evaluate Suppliers

Once the maximum potential steam requirements are determined and an ideal location for the equipment has been selected, it is time to evaluate a supplier. Though not always feasible, the best way to evaluate a rental company is to visit its facility. Observing work in progress at the company's facility can provide good insight into the quality of the equipment and level of service the company is accustomed to providing. However, if you are unable to conduct a site visit, then asking questions will quickly help you to decide which company you feel most comfortable relying upon to meet your unique needs and requirements.

Whether a boiler is shipped by air, trailer, rail or sea, it is important that you plan in advance for its arrival. This 70,000 lb/hr trailer-mounted boiler is being loaded onto an Antonov AN124-100 aircraft for delivery.

Boilers

One item to consider during the evaluation process includes knowing if the company is a full-time, dedicated rental company with the experience, equipment and capabilities you require. Be cautious with firms that claim to be full-time and offer below market level pricing. These firms may offer a better price, but equipment age, reliability, startup, support, code compliance and conformance to emissions regulations are a few areas you might experience problems with in the future.

Next, pay special consideration to where the company's equipment is located. Always ask if the rental company has multiple storage locations. This aids in minimizing transportation costs and travel time. In addition, inquire about the location of technical representatives and startup technicians. Most established rental companies have trained representatives in all major industrial areas. They are familiar with the rental company's equipment and procedures and can save time should problems arise.

When it comes to evaluating a supplier's proposal, a number of issues need to be addressed to make certain that what you need aligns with what you are going to be charged for. The proposal should include normal factors such as a clearly defined rental rate, payment terms, change-of-scope clauses, liability coverage, transportation costs and a warranty statement. A well-written proposal also should address the anticipated term on the rental unit, freight costs, time-and-travel charges for technicians, and it should specify appropriate responsibility for installation and removal costs. It also should be clear that any additional costs such as for repairs resulting from normal use should be the responsibility of the rental company. Moreover, repairs that result from poor maintenance or improper operation will be billed back to the company.

In addition to a concise proposal, reputable rental companies will be able to provide a complete set of drawings and equipment specifications. Detailed equipment specifications include items such as the total capacity and operating characteristics of the boiler, water treatment needs and requirements, emissions requirements,



Mobile boiler rooms are enclosed-van units that include all the necessary auxiliary equipment for reliable steam production.

weather protection, performance testing and ASME code requirements.

Once a rental company is selected, the rental agreement signed, and the delivery and startup schedule is determined, the user must be certain that the site is ready for delivery and well-trained boiler operators have been selected to operate the equipment safely. The next step is to arrange for any necessary operating permits required from regulatory agencies. This includes any special permits that may be required in those areas where emission limits are strictly controlled. For locations that must comply with stringent NO_x regulations, be sure to inquire about low NO_x technology options such as selective catalytic reduction (SCR) systems that can be installed and shipped with the boiler to make certain environmental compliance is achieved.

Once the Rental Boiler Is on Site

To ensure continuous, trouble-free performance, a number of regular checks and maintenance tasks must be performed during normal operation of the equipment. It is important that a log sheet be kept on site for the recording of every routine check and maintenance item completed.

Daily checks include an examination of all safety devices, followed by an inspection of the low-water cutoff during every shift. The entire system also should be checked for leaks, including the fuel supply system. Any irregularities must be corrected immediately. It is important

to check the flame pattern of the burner to make sure the combustion devices are working efficiently.

To maintain continuous proper boiler performance, feedwater treatment and correct blowdown techniques must be performed. Makeup and boiler water quality should be checked at every shift, and boiler water treatment chemicals must be used. Failure to maintain proper water chemistry is a major cause of damage to rental boilers and the single biggest rehabilitation expense. Make sure the rental company provides sample coolers on their equipment to facilitate the water chemistry. Also, get your water treatment company on board right away to include the rental boiler in their normal services.

When the rental boiler is no longer needed, it is important to ensure proper return of equipment. Taking certain steps can help ensure the safe return of a unit to the rental company's facility. It is the responsibility of the user to have plant or local boiler shop personnel disconnect the equipment after use, which includes draining and flushing all boiler lines with clean water to help minimize any chance of corrosion. This also applies to valves, gauges, controls and piping that are susceptible to freezing when exposed to freezing conditions during transit. Next, the stack, non-return valves and safety valves are to be removed and securely stored in their proper place for shipment. Lastly, perform a complete check of the boiler condition, and check the boiler tubes for buildup, noting any condition issues. When the final

Believed to be the world's largest mobile boiler, the 120,000 lb/hr trailer-mounted boiler avoids the need for new foundations, crane handling and special rigging.

inspection is complete, all items should be properly documented, recorded and sent to the rental company after the equipment has been shipped back.

Even if all these guidelines are considered, it is still possible for things to go wrong. Most often, problems can be traced to:

- Inadequate planning and budget allotment.
- Non-engineering installation.
- Lack of qualified operators.
- Poor water treatment.
- Lack of proper maintenance.

By exercising a little caution when evaluating the supplier, the equipment and the proposal, you can avoid most potential problems. As long as you plan in advance, budget accordingly, verify connection sizes and permitting issues, properly train operators, frequently monitor



the feedwater quality and take responsibility in maintaining the equipment once it is installed, you can be confident that the risks associated with renting equipment will be minimized and that your project will be a success. **PH**

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