

**ROYAL & SUNALLIANCE**  
ENGINEERING INSURANCE & LOSS  
CONTROL SERVICES

**MAST**  
RISK MANAGEMENT

## **BOILER LOGS CAN REDUCE ACCIDENTS**

Often overlooked in boiler operation is the establishment and enforcement of a procedure for keeping adequate boiler logs. The management of a facility, which has a boiler plant, bears the responsibility for implementing and maintaining this procedure.

Over a period of time, boiler operating logs help distinguish operating trends that can allow problems to be diagnosed, and boiler and/or fuel-burning system maintenance to be scheduled, before an emergency shutdown is necessary. For example, a steady rise in stack temperature, at the same boiler load, indicates dirty boiler firesides or waterside scale build-up. In either case remedial action can be taken before it is necessary to shut the unit down for cleaning.

### **COVERAGE**

There are two types of boiler logs: one for daily operations, the other for maintenance activities. These logs can be easily customized for the particular installation and its unique requirements. Using a computer or a word processor, it is a relatively simple matter to prepare a customized log form. Items may be added or deleted as needed for the specific installation.

Maintenance logs should include those items recommended in the boiler and burner manufacturer's operating instructions.

### **WHAT LOGS CAN TELL YOU**

Proper keeping and analysis of boiler logs help operators to focus on the two highest areas attributable for accidents in all categories of boilers: low water cut-offs, and operator error/poor maintenance, and therefore reduce boiler accidents. As low-water-cut-off problems account for 62 percent of the incidents, maintenance and testing of these devices could cause a dramatic reduction in boiler accidents.

(over)

## **SAMPLE LOGS**

A separate log sheet is required for each boiler in the facility. One option is having a log sheet that is good for one month (31 days), and provides for two sets of readings per day. It is recommended that completed logs be three-hole punched and filed in a loose-leaf notebook for future analysis. Management should establish a reasonable period of time for log retention, consistent with the life expectancy of the unit.

Make provisions on the sheets for recording weekly and monthly checks with the date of completion. A general comments section allows significant events, such as the date of the annual boiler inspection, to be recorded. Other events such as boiler malfunctions should also be noted.

The most important concern is to keep the log completely, accurately, and updated regularly. Too often, logs are kept with identical readings for an entire month or with gaps in the readings. Management must stress the need for complete, accurate logs, and must also explain the need for analysis and its benefits.

## **RESPONSIBILITY**

### Operator -

Responsible for taking boiler readings, assuring accuracy and initial analysis.

### Management -

Responsible for implementing log program and supervising its continuous completion. Also responsible for ensuring that an analysis program is carried out.

### Retention -

All persons involved must assure logs are retained in accordance with the facility policy.

### Analysis -

All involved persons must examine logs to determine trends and then act upon or recommend action in response to these trends. Repair or replacement of equipment, as indicated by these operation or maintenance log indications, must be performed as needed.

## **CONCLUSION**

A well thought-out operation and maintenance log program designed to address the requirements of the facility will reduce boiler accidents, downtime, and equipment loss. Such a program, properly carried out, will focus attention of both management and operating personnel on the often-overlooked boiler plant, thereby addressing small problems before they become large ones.