

Improving Boiler Reliability and Availability

Ranaware Yashwant

ABSTRACT

Boilers can have efficient long life or they become useless and uneconomical to operate. How well the equipment operated and maintained, the fuel being fired, and the type of service experienced, all determine the life of the equipment and the need for carrying out major Reliability And Availability extension programs. To determine the extent of work necessary for regaining new boiler life, the actual performance and reliability of the equipment must be assessed; the existing mechanical condition of boiler components defined; and the history of problems-causes for unreliability and performance deterioration should be known.

This paper deals with the various techniques used to evaluate the condition of the boilers, boiler components and thereby provides guidance for carrying out Reliability And Availability extension programs. The power plant boilers and industrial boilers are designed conservatively with lot of safety factor in the design stage. By carefully assessing the present condition of the boiler with the help of various NDT methods and metallurgical studies, the boiler can be operated even after 25 years. These studies can help in planning for the replacements of the boiler components in phased manner.

Some of these techniques, data have been developed by Babcock & Wilcox, USA. Thermax Babcock & Wilcox Limited uses these patented techniques for remaining life assessment studies, carried out over last 15 years worldwide.