

Purpose

Advise owners and operators of Universal Pressure (UP) boilers about problems associated with the operation of their boilers with known tube leaks.

Background

B&W has always recommended that no boiler should be operated with a known tube leak. During the early development and operation of forced circulation boilers, B&W instituted a design criteria to assure that the fluid circulation to a heat-absorbing furnace wall circuit is adequate, so that even if a tube is leaking, the fluid leaving that circuit would not overheat the non-heat-absorbing pressure parts downstream. These downstream pressure parts include outlet headers and riser tubes. This criteria does **not**, however, prevent damage to adjacent heat-absorbing tubes in

the furnace wall circuit which may be robbed of flow if the unit is operated with a known tube leak. This criteria, commonly known as the "tolerable leakage rate," was set at 3% of full load steam flow. This flow was selected on the basis that such a large tube leak would certainly be detectable by the operator, and the unit would then be **promptly** removed from service.

Problem

The "tolerable leakage rate" was openly discussed as a design safety margin, but over the years, many people have misunderstood it to be an "allowable leakage rate." This misunderstanding has led some operators to run boilers for a long period of time with known tube leaks, thinking that they were not incurring any risk of further damage. Extensive overheating and erosion damage has occurred on some units

that were operated with a known tube leak and the leakage rate was less than 3% of full load steam flow.

Recommendations

THERE IS NO ALLOWABLE LEAKAGE RATE. Any tube leak should be considered an unacceptable operating condition, and the boiler should be removed from service promptly. This recommendation applies to any type of boiler.

Support

If you have any questions concerning this Technical Service Bulletin or if you require additional information, please contact your nearest Babcock & Wilcox District Service Office.

delivering
proven results

www.babcock.com

Babcock & Wilcox Power Generation Group, Inc.

20 S. Van Buren Avenue
Barberton, Ohio 44203 USA
Phone: 330.753.4511
Fax: 330.860.1886

Babcock & Wilcox Power Generation Group, Inc. is a subsidiary of The Babcock & Wilcox Company (B&W). Established in 1867, B&W is a world leader in providing steam generating and emissions control equipment, nuclear operations and components, and defense program management services.

The information contained herein is provided for general information purposes only and is not intended nor to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.

For more information, or a complete listing of our sales and service offices, call 1-800-BABCOCK (222-2625), send an e-mail to info@babcock.com, or access our Web site at www.babcock.com.

© 1998 Babcock & Wilcox Power Generation Group, Inc.
All rights reserved.

March 1998



babcock & wilcox power generation group