



Ambient Water Treatment Consulting, Inc.

Water Treatment Monitoring
Cooling and Boiler Water Analyses
Water Treatment Bid Evaluations
Equipment Inspections
Pipe Analyses

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ULTRASONIC NON-DESTRUCTIVE PIPE TESTING

WHY ASSUME THE INTERNAL CONDITIONS OF CRITICAL PIPING? Is the Water Treatment Program Effective?



Estimating the remaining useful life of piping systems using ultrasonic measurements provides a non-destructive alternative to removing pipe sections. Removal of piping for destructive analysis is by far the most accurate indicator of system conditions and should be used to confirm ultrasonic test results. Ultrasonic testing is often used to locate areas in the piping system that should be investigated internally. Removal of piping may not be an option in many instances especially for large diameter piping or when examining piping as part of a due diligence process pending purchase or long term lease of a facility.

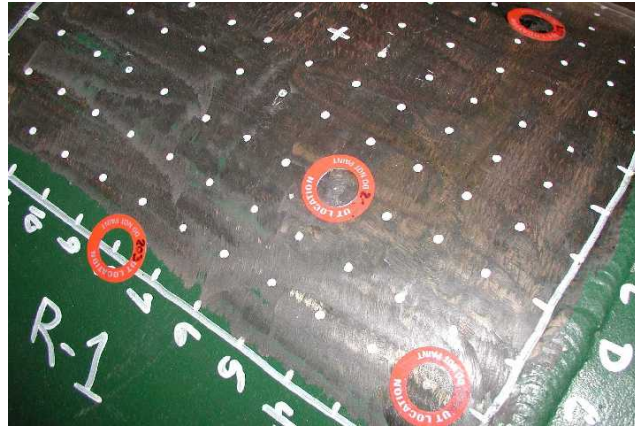
The water treatment professionals of **Ambient Water Treatment Consulting, Inc.** use the Panametrics Model 36DL-Plus hand-held thickness gage specifically designed for corroded metal applications. This unit provides the operator with a real-time video form display for immediate verification of critical measurements. Measurements are accurately acquired from painted or coated surfaces in the *Echo-to-Echo* mode. In *Fast-Scan* mode, the unit will identify 20 thickness readings per second. Typical pipe thickness surveys cover over 1000 readings. The 36DL-Plus can store 95,000 fully-documented thickness readings capable of being downloaded to a proprietary computer statistical and graphing program. In many cases, an entire piping system survey can be performed in one day.



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Solid Accuracy and Repeatability

A calibrated ultrasonic thickness gauge can resolve differences in the wall thickness of carbon-steel pipe down to 0.001 inch under controlled conditions. When testing templates are used to identify test sites for repeat measurements over time on in-service pipe that has experienced waterside corrosion (right), the precision of the ultrasonic thickness gauging method still approaches 0.002in±. The thickness data can be used to calculate near real-time corrosion rates.



Ultrasonic test templates (orange rings in the case of this condenser water piping) allow for repeat measurements of wall thickness at the same sites over time.

Ambient Water Treatment Consulting, Inc. can apply the information obtained from ultrasonic thickness gauging to create a plan to extend the life of the piping and to monitor corrosion conditions into the future.

Ambient Water Treatment Consulting, Inc. is a full-service consulting firm staffed with water treatment professionals who are dedicated to providing you with **unbiased, independent information** on the state of your critical heat-transfer equipment. **We do not sell treatment products.** We perform a variety of testing and inspection services that determine the effectiveness of your existing water treatment program.

Since 1998, we have provided essential services to some of the best-known property management firms in the country, as well as health care facilities, data centers, museums and industrial complexes.

For more information on this subject and for answers to all of your water treatment questions, please visit our website www.awtconsulting.com and/or contact us at:

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