

Eddy Current Testing on Refrigeration Chillers and Steam Condensers



Eddy current tube testing has been used for decades to detect and quantify service related damage in industrial chillers and condensers. Maintenance of strainers and filters limits chiller-tube erosion caused by sand or other small particles moving at high velocities. Erosion and tube pitting decreases overall heat-transfer effectiveness intern decreasing efficiency. If uncorrected, these conditions can lead to plugged tubes or tube failure.

It is an industry standard to inspect chilled-water and condenser-water piping systems annually for evidence of corrosion and erosion. Most manufacturers recommend eddy-current inspection of heat-exchanger tubes, including an electromagnetic procedure for evaluating tube-wall thickness, every three-five years.

In recent years new Eddy Current Array (ECA) technology is available to better assess damage found. ECA can discriminate between the various complex geometries inside chiller and condenser tubing to allow accurate detection, sizing and characterization of small-volume longitudinal and circumferential cracking.

