

Investigation of Condenser Units Tube Failures

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Condenser units play a vital role in thermal, nuclear, and other power plants where steam drives turbines. Essentially functioning as large heat exchangers, condensers enhance power plant efficiency by increasing the pressure drop between the boiler and the turbine outlet. This process also allows for the recovery and reuse of condensed water, significantly reducing the need for a continuous supply of fresh water.

The tubes inside condensers are subjected to harsh operating conditions, including mechanical, thermal, and chemical stresses. These stresses can lead to various types of damage and wear over time.

In this contribution, two examples of tube failure will be presented: in one case, the crack originates on the inner side of the tube, while in the other, it starts on the outer side.