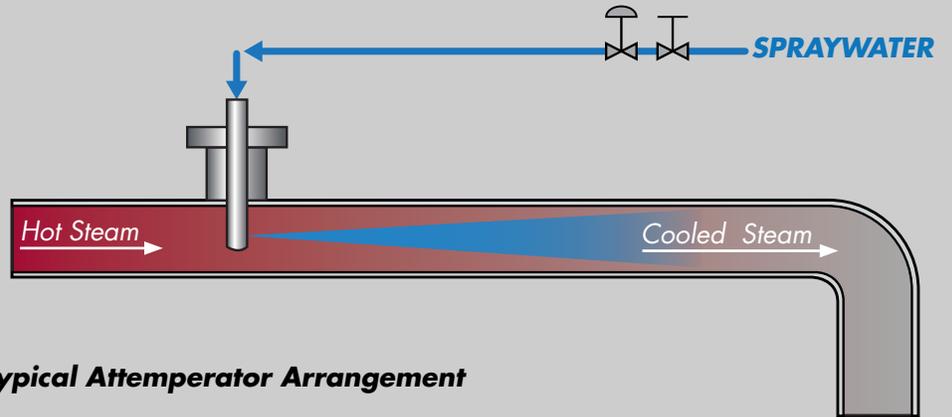


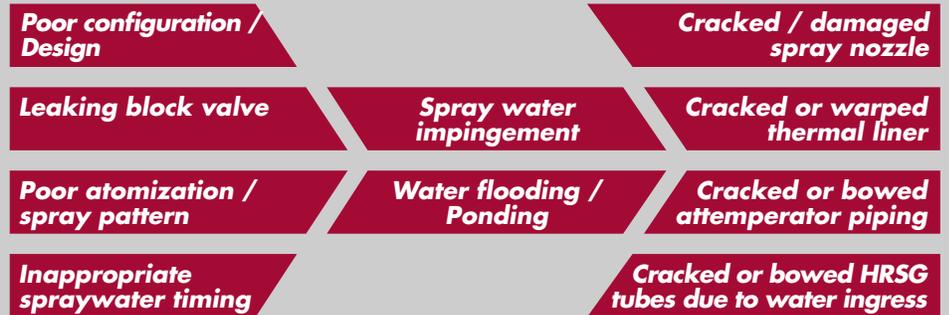
# ATTEMPERATOR ONLINE DAMAGE TRACKING APP



**Typical Attemperater Arrangement**

## THE PROBLEM

Attemperaters (aka desuperheaters), which reduce steam temperature using a water spray, are one of the most problematic components in combined cycle plants. There are a number of attemperater designs and configurations but all of them are potentially vulnerable to damage. If the causes of damage are not addressed early, then cracking and steam leaks can occur leading to costly repairs and replacements. The main challenge is that damage often goes undetected until it is too late because the damaging temperature transients are not detected by standard plant control instrumentation until it is too late.



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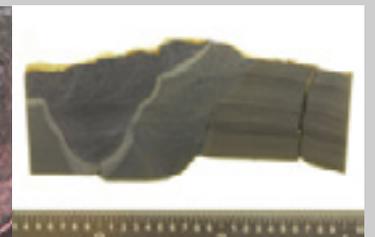
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Damaged Nozzle



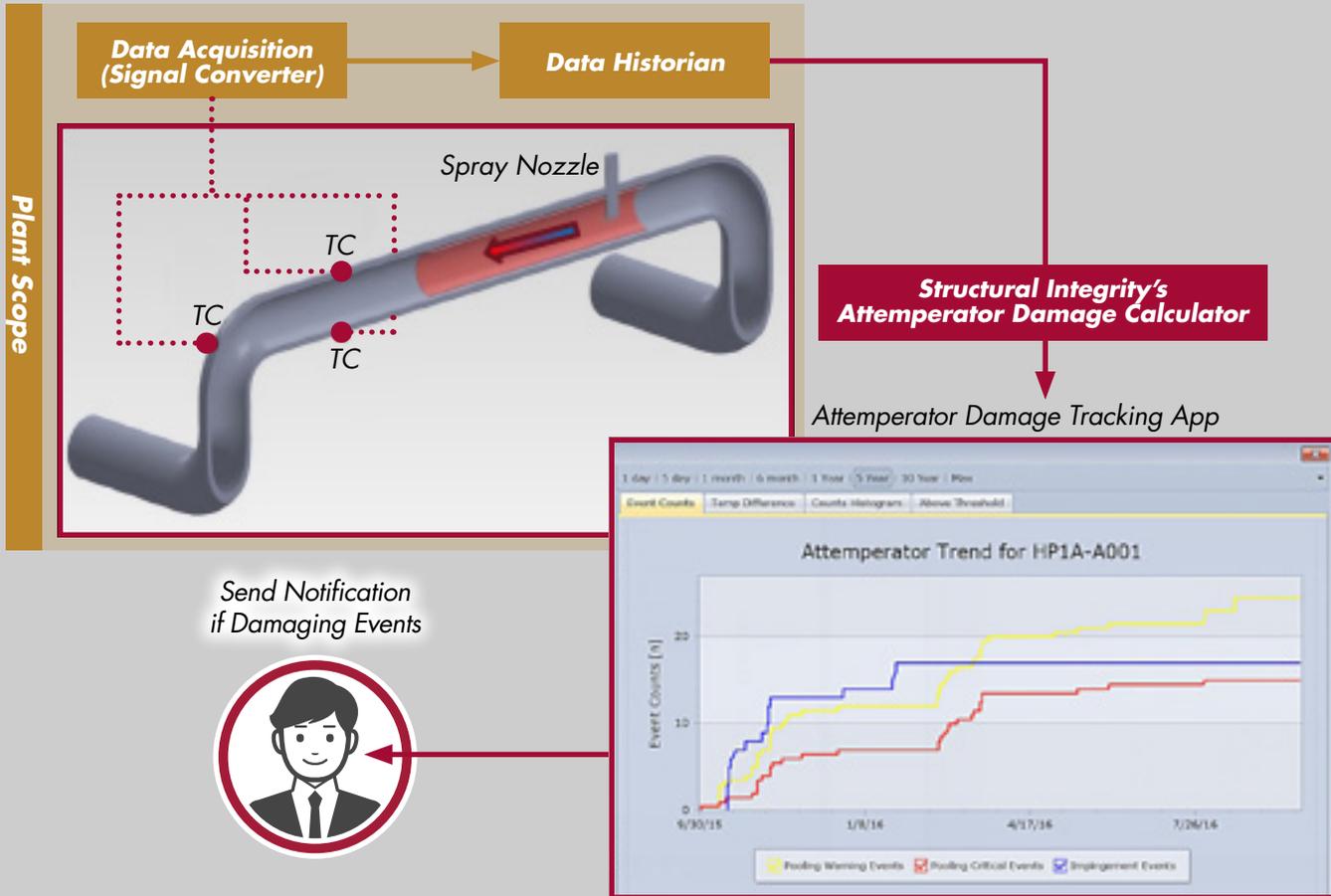
Cracked Liner



Failed downstream Weld/Elbow

## THE SOLUTION

Tracking of damaging temperature differentials with strategically placed thermocouples provides direct feedback on the magnitude of damage incurred from each water impingement or flooding/ponding event. The signals from the thermocouples are analyzed by Structural Integrity's attemperator damage tracking app to count the number and severity of impingement and flooding events, providing a trend of damage accumulation. Our software can be configured to provide email alerts when certain magnitude events occur, or based on trends in damage accumulation. This allows early detection of potentially damaging events so that appropriate mitigations (maintenance, logic updates, etc.) can be performed before costly repairs are required.



### PlantTrack Online

Online provides a suite of real-time damage tracking applications for common plant components: piping, headers, tubing, attemperators, etc. These applications interface to common DCS / Historian systems allowing for easy implementation, including analysis of historical data where that exists.

### PlantTrack Offline

Offline provides web-based graphical data management of design, configuration, inspections, failures, repairs, etc.

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