



Catch of the week



Frozen Cooling System Valve Found on a Hydro Power Turbine

Availability & Performance Center | April 2012

What did the SmartSignal software find?

On Saturday, March 3rd, the Proficy SmartSignal solution identified a potential issue with the cooling system for a hydro power turbine. Values for the cooling air temperature were expected to be around 20 degrees Celsius. Actual cooling air temperatures were seen as high as 35 degrees Celsius. At the same time, generator stator winding temperatures were expected to be around 35 degrees Celsius and were seen reaching 50 degrees Celsius. The Availability & Performance Center immediately sent a high priority notification to the client.

What was the underlying cause?

After investigation, the operators reported that this unit was experiencing frazil ice in the cooling system. The operators reported that there was a small 3" manual control valve that they believed became plugged with ice, choking off cooling flow to the hydro turbine.

What was the value to the client?

The client was very appreciative of the indication of the issue. This plant had an actual value alarm on low cooling water flow. However, this alarm was grouped with a set of additional alarms that were known to be false due to an instrumentation issue. The instrumentation issue and existing false alarms masked a new emerging condition. The Availability & Performance Center was able to help the client understand the issue and get the plant back on line. The Availability & Performance Center was also to provide verification that the maintenance action corrected the issue by verifying that stator and cooling temperatures returned to expected values, with subsequent reports.

Who found it? Jeff Ottow



Screenshot increases in actual stator and cooling air temperatures (blue) versus expected values (green).