

Utility Saves ~\$300K in Fuel Costs Annually by Using Cycle Isolation Monitoring Software

Overview

For some time, Santee Cooper has been proactive in tracking cycle isolation issues; performing regular walkdowns and measuring temperatures downstream of valves. GSE TrueNorth was able to enhance Santee Cooper's cycle isolation program by providing a method to prioritize the identified leakage, enabling them to make cost-effective maintenance decisions.

Customer: Santee Cooper
Plant Type: Coal-fired
Solution: TSM Enterprise CIM



Challenge

As with many utilities who track cycle isolation, Santee Cooper could not estimate the actual impact of an identified leaking valve. This problem resulted in misplacement of limited maintenance resources since their decisions were based on incomplete information. Santee Cooper needed a method to estimate the valve leakage flows and heatrate affect.

If the right information could be provided and considered with the fuel costs, the leaking valves could be ranked from worst to least impact and a return on investment for valve maintenance established.

Solution

Santee Cooper selected Cross Unit 1 for implementation of GSE TrueNorth's TSM Enterprise CIM software to be used at the Cross Unit 1, a 1,000° F/1,000° F 2,400 psig reheat coal unit rated at 605 MWe gross plant.

TSM Enterprise CIM, a cycle isolation monitoring tool compliments the existing program at Santee Cooper by estimating the impact on plant cycle performance. TSM Enterprise CIM automatically prioritizes the leaking valves to assist in justification for repair or replacement.

Santee Cooper performs walkdowns at Cross 1, taking downstream temperature measurements at specific locations, in order to obtain consistent results using the TSM Enterprise CIM calculations.

Each measurement is recorded using TSM Enterprise CIM then convenient forms are provided to track valve conditions information and maintenance history. Graphing capabilities are used to trend value temperature and heatrate import.

Results

Using the TSM Enterprise CIM software, Santee Cooper has identified, prioritized and repaired several leaking drain valves on Cross 1 worth approximately 147 Btu/kW-hr (worth well over \$300,000 annually depending on fuel costs). In addition, they have recently implemented this tool at the remaining three Cross Station units with similar results.

Establishing a valve monitoring program for tracking leakage in power plants on a regular basis is rewarding. Using TSM Enterprise CIM in conjunction with the site's cycle isolation program enables significant cost savings from repair and replacement of high-energy valves. Knowing which valves to fix is crucial when resources are limited.

Finding leaking valves in a timely manner with the right tool leads to cost effective maintenance decisions — critical in today's power industry.

GSE TrueNorth is committed to providing the best tools and experience available with the goal of improving the plant's bottom line whether it is lower fuel costs or increased power output.

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