

FSAPE Optimizes Peaking Power Plant

Drastically Extends Fluid Life & Eliminates Unit-Trips and Fail-to-Starts

The stakes are high for peaking power plants; when called upon they have a limited number of hours to begin producing electricity for the grid. Unit trip or fail-to-start conditions result in contractual fines, necessitate purchasing power to fulfill obligations, forced & unscheduled outages and lost profit. A combined cycle peaking plant (2 GCT on 1 ST) experiencing multiple trips related to electrohydraulic control (EHC) servo valve failure turned to Hy-Pro for help.

The Problem

A variety of contaminants including water, acid, particulate, gels and dissolved metals coupled with low resistivity were fouling the valves, causing expensive trips & fail to starts and encouraging the maintenance team to consider flushing the system, disposing of and replacing the expensive phosphate ester hydraulic fluid.



The Solution

Hy-Pro suggested that a Total Systems Cleanliness approach be adopted in order to address each of the contaminants, stop the unit trips & fail to starts and prevent the impending premature fluid replacement. An FSAPE2 offline acid remediation and particulate filtration skid with a TMRN2 reservoir headspace dehydrator was installed on the reservoir. A desiccant breather was also added to the reservoir and the pump discharge filter element was upgraded to high efficiency microglass.



The Results

Within four months, contaminants and resistivity were brought within specifications eliminating the necessity for fluid replacement. Gels were removed from the system. Servo valve fouling was decreased to the point where the plant was no longer experiencing trips or fail to starts.

Test	Before	Target	After
ISO Cleanliness Codes	18/16/13	≤ 16/14/10	12/10/5
Water Content	1388 ppm	300-500 ppm	350 ppm
Acid Number	1.18	≤ 0.05	0.02
Resistivity	Too low to measure	≥ 5.0 G ohm-cm	29.84 G ohm-cm

Since Implementing Hy-Pro

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Unit Trips or Fail-to-Starts

+26

Years Expected Fluid Life

\$5,165,280

Expected Savings over Fluid Life

