

# Gas-Fired Power Plant Cuts Prolonged Shutdowns, Saves \$105K USD Yearly with Fisher™ DFA Desuperheater

## RESULTS

- Reduced maintenance frequency from 4-5 times to 2 times annually, improving operational efficiency
- Improved downstream steam temperature control with a desuperheater specialized for extreme thermal cycling
- Optimized daily start-stop operation following the switch to a modular design

## APPLICATION

High-pressure turbine and reheater section

## CUSTOMER

The customer is a Taiwan-based combined cycle gas-fired power plant that began operating in March 2002.

## CHALLENGE

The extreme thermal cycling and daily start-stop operation were damaging the integrity of the existing desuperheater (DSH). Moreover, inaccurate steam temperature control was causing water to drip from the spray nozzle and flow to the downstream pipeline, forcing the plant to shut down for maintenance as often as 4 to 5 times a year. This maintenance routine was prolonged by the need to dismantle the non-modular assembly and locate the spray nozzle.

## SOLUTION

Emerson's industry team and Taiwan partner conducted a site visit followed by a detailed analysis of the current process. Upon identifying the issue, customized options based on the customer's requirements and budget were presented.

A custom-built configuration of the Fisher DFA desuperheater with Micro-Flat trim was selected as the most suitable solution for improved steam temperature control. It combined the appropriate nozzle and Micro-Flat trim to meet the low flow requirement, a liner to protect the DSH from thermal cycling load and daily start-stop application, and a modular design to simplify the cleaning and maintenance of nozzles. Such a solution improved plant efficiency and productivity, helping the customer save \$105,000 USD annually on maintenance costs.

The customer expressed satisfaction with the Fisher DFA desuperheater's performance, stating they now manage to have accurate downstream temperature control and are not faced with the issues of water leakage and spray nozzle blow-out. They have asked for four additional desuperheater application valve replacements.

This success story gained Emerson a future opportunity to displace other non-Fisher control valves and spare parts at the site.



*The Fisher DFA desuperheater with Micro-Flat trim in a combined cycle power plant offers improved operational efficiency and thermal control.*



*Fisher DFA desuperheater with Micro-Flat trim*

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