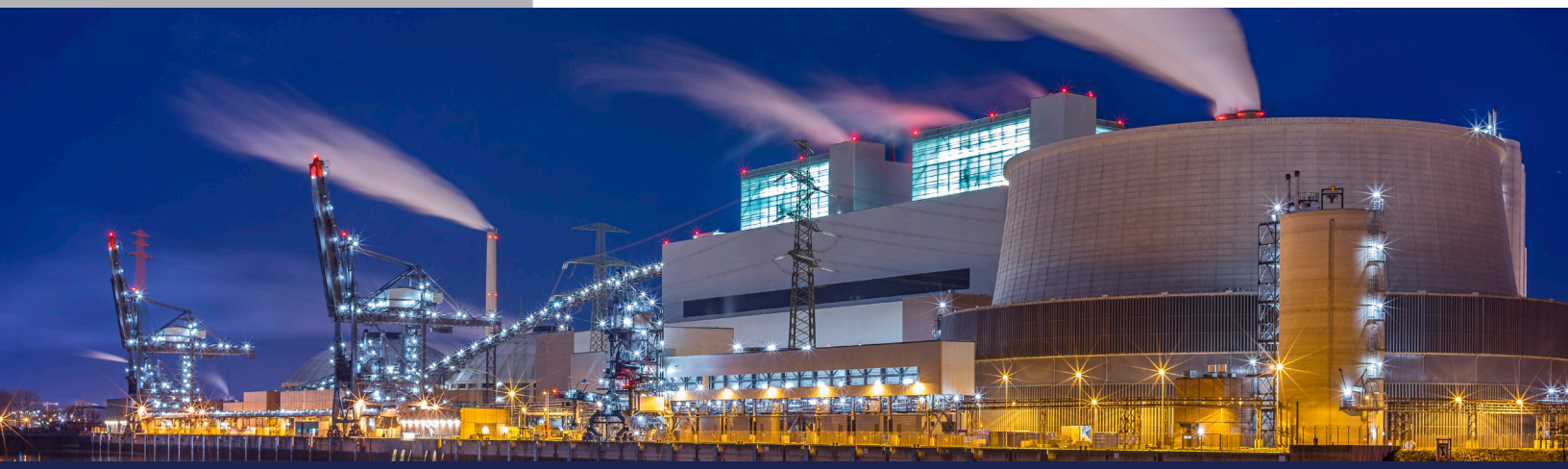

POWER PLANT ACHIEVES RELIABLE BOILER DRUM LEVEL CONTROL WITH GUIDED WAVE RADAR TECHNOLOGY

Customer

American gas plant with natural gas combined with cycle gas

Application

Boiler drum level control at a combined cycle power plant

Challenge

During the winter months, sub-freezing temperatures are common in this region which creates challenges for the company's drum level measurement instrumentation. The primary level measurement on the boiler drums were differential pressure transmitters with impulse tubing (wet legs). During winter months frozen wet legs caused errors in the indicated drum levels resulting in unit trips. To alleviate the problem, the impulse tubes were insulated and heat traced but the impulse tubes continued to freeze.

Solution

As a result, the gas site systems engineer decided to investigate alternative technologies to improve the reliability of the boiler drum level instrumentation. With support from Emerson experts, they installed Rosemount™ 5300 Guided Wave Radar with Dynamic Vapor Compensation (DVC) along with a Rosemount Bypass chamber. With process design conditions exceeding 2300 psi and 650°F (343°C), the Rosemount 5300 with DVC provided fully compensated level measurements, independent of pressure and temperature, resulting in accurate and reliable level readings during all start-up and shutdown conditions, regardless of the weather.

Results

- Reduced maintenance with no calibration required
- Increased accuracy with more rapid drum level readings
- Elimination of unwarranted trips due to cold ambient conditions

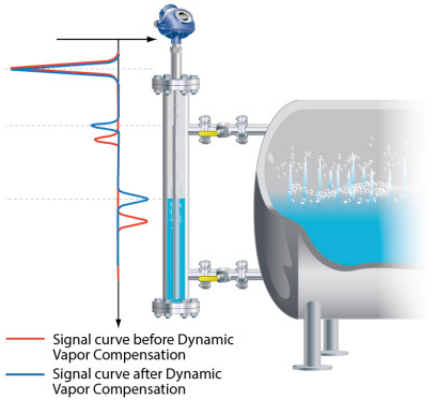

Image 1. *Illustration showing how Dynamic Vapor Compensation works.*

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POWER PLANT ACHIEVES RELIABLE BOILER DRUM LEVEL CONTROL WITH GUIDED WAVE RADAR TECHNOLOGY

Solution

The plant used a two out of three-voting system with three redundant radar installations. Since installation, the Rosemount 5300 with Dynamic Vapor Compensation has proved to be very reliable. The radar levels cannot deviate from each other by more than 2.5" (6.35cm) without causing the boiler to trip. Since installation, they have all tracked reliably and within the manufacturer's specification. Emerson technicians performed on-site startup of the radars and provided formal training for the site operators to ensure confidence in the new product.

Resources

Rosemount 5300 Guided Wave Radar
Emerson.com/Rosemount5300

For more information,visit
Emerson.com/Rosemount5300

00830-0200-4160 Rev AB

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