



# AMMONIA PLANT EXPERIENCES COST SAVINGS WITH ROSEMOUNT CONDITIONING ORIFICE PLATE TECHNOLOGY

## Customer

Ammonia plant in the Midwest United States

## Application

Inlet water pipe for steam producing process

## Challenge

An ammonia plant required a better solution for taking measurements in the inlet water pipe that runs to the economizer (the process that uses waste heat from the plant to produce steam). The piping design creates dynamic flow conditions causing inaccurate measurement at the existing Differential Pressure (DP) measurement point.

The 3-in. diameter inlet water pipe runs approximately 20 ft. above ground level for about 50 ft. to the existing DP flow meter. After the existing DP measurement point, the water feed pipe makes a 90-degree turn that extends 50 ft. to the top of the economizer. The measurement point meets all the requirements of a DP flow application but the dynamic condition of the flow (swirling flow) caused inaccurate measurement.

## Results

- Reduced material, labor, and procurement costs
- Reduced straight run piping required for measurement
- Provided accurate measurement in dynamic flow conditions



*Rosemount 1595 Conditioning Orifice Plate*

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## Solution

The customer wanted to retrofit the existing DP primary element and not have to redesign the current piping layout. Emerson supplied the Rosemount™ 1595 Conditioning Orifice Plate which is designed for applications with limited pipe run, only requiring two pipe diameters from an upstream flow disturbance such as double elbows, valves, and reducers. This unique design achieves an accuracy of  $\pm 0.5$  percent, making it the best performing DP primary element.

The Rosemount Conditioning Orifice Plate provided an accurate measurement and eliminated the dynamic flow conditions that had previously hindered the measurement point. The company estimated savings of \$11,000 by reducing material, labor, engineering hours, and procurement costs.

For more information, visit  
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