

BASO[®] Valves

Program Description

This strategy to reduce ambient ozone levels within the non-attainment Area (NAA) involves modifying Colorado Air Quality Control Commission Regulation No. 7 (Reg. 7) by requiring that new heater treaters, dehydrator reboilers, and process heaters at Exploration and Production (E&P) sites located within the NAA be equipped with BASO[®] valves.

Heater treaters, dehydrator reboilers, and process heaters at E&P sites fueled by natural gas have pilot flames, which can be blown out by strong wind gusts. When this happens, natural gas is emitted to the atmosphere until the pilot is relit. BASO[®] valves function by shutting off the gas flow when the pilot flame is extinguished. BASO[®] valves are snap-action valves activated by a thermocouple that senses the pilot flame temperature. These valves are particularly effective at E&P sites since these sites are typically remote and unmanned. They can be used at all gas-fired heaters.

Air Quality/Health and Welfare Benefits

Potential natural gas emission reductions are dependent on how often the pilot flames go out and for what length of time. One example is that natural gas emissions would decrease by 203 thousand cubic feet (Mcf) per year if a BASO[®] valve were installed on a 1,000 barrel per day heater-treater that experiences a flameout period of 10 days annually.¹

While health benefits are not quantified here, it is understood that reducing direct emissions of VOCs will reduce air toxics and other criteria pollutants. This will reduce the incidence of human health impacts caused by pulmonary, cardiovascular, respiratory, and nervous system disease. Because ozone damages crops, forests, and other natural plant life, all would benefit if emissions are reduced. This strategy would also reduce emissions of methane and other greenhouse gases, which contribute to climate change.

Program Costs

Each BASO[®] valve costs less than \$100, and has operating and maintenance costs of less than \$100 per year. Payback depends on how often the pilot flames go out and for what length of time. Typically payback occurs in less than 1 year.¹

Implementation/Administration

To be determined.

¹ US EPA, *PRO Fact Sheet No. 611: Install BASO[®] Valves*