

HYBRID FLARE APPARATUS AND METHOD

ABSTRACT OF THE DISCLOSURE

A method of operating a flare assembly is provided. If it is determined that the injection of primary steam into the combustion zone is necessary to achieve smokeless operation, primary steam is injected through a steam injector assembly into the combustion zone. If it is determined that steam is not necessary, an alternative gas is discharged through the steam injector assembly into the combustion zone. In one embodiment, the alternative gas is heated. In another embodiment, if it is determined that steam is necessary, a maximum allowable flow rate of steam is calculated, and the flow rate of steam is modulated to achieve smokeless operation and avoid a flow rate of steam in excess of the maximum allowable flow rate of steam. A flare assembly is also provided.

Fig. 1