Enhanced Discharge of ANG storage for vehicle use

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Abstract:

Discharging the ANG storage tank from 3.5 MPa to a depletion pressure results in temperature fall within the ANG vessel. The fall of storage pressure was from a rapid to slow rate along with constant rate of gas removal while the temperature was falling drastically with depressurization as a result of heat of desorption and partly due to pressure drop. In the present study the characteristics of ANG storage system during discharge has been studied. When gas was discharged at discharge rate 1, 5, 10 l/min, a much drop in bed temperature occurred. Bed Preheating was investigated as a solution to enhance the discharge process and to avoid much amount of gas retained (not desorbed). Improvement in the amount desorbed and capacity was recorded as a result.

Key words: ANG; adsorptive natural gas, CNG; compressed natural gas, NGV; natural gas vehicle