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हजीरा मै फ्लेयर गैस की पुन: प्राप्ति की योजना
Flare Gas Recovery Project at Hazira

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Executive Summary

Hazira Plant is designed to handle 40.6 MMSCMD of sour gas and 8652 MT of sour condensate. At present 42 MMSCMD of gas and about 9200 MT of condensate is being treated in different process units.

It has been reported that in the normal operating conditions an average of 30000 SCMD of gas goes to flare. The main source of this gas is gases passing from pressure safety valves(PSVs), flare control valves, compressor seal gases and purge gases from different units.

To recover and utilize the flare gas, Hazira Plant prepared a scheme and the same was referred to IOGPT for review with following scope of work.

- Purge gas reduction, if possible
- Flare gas recovery scheme in view of H2S presence in flare gas
- Safety aspect of the recovery system
- Cost estimate and financial analysis

During no active flare condition, certain amount of purge gas is required to be purged continuously through flare network to prevent air entry into the system by keeping positive pressure inside the network. Several purge point have been provided at each unit flare header end point to maintain this requirement.

Keeping the above in view, the flare system network has been reviewed to estimate the required purge gas quantity. The total flare network has been simulated with PIPESIM software and study

reveals that 2880 SCMD of purge gas is sufficient to provide required velocity(0.05 ft/sec) in the flare stack. The reported flare gas quantity of 30000 SCMD suggests that the present purge quantity of flare sub headers is higher than required. M/s EIL based on some safety criteria has provided the continuous purge quantities in excess of system requirements at different unit end. It will be appropriate to consult the M/s EIL before stopping the continuous purge at different unit ends.

Flare gas recovery systems recover hydrocarbon gases from the flare header and route the gas to consumers. The recovered flare gas is sour in nature hence it is proposed to sweeten the gas before putting it into the low-pressure consumer header.

Flare gas recovery scheme proposed by the Hazira Plant has been reviewed and modified. The scheme consists of a non-oil injected screw compressor, a heat exchanger, discharge and suction drum, absorber column, flash drum and a pump.

Flare gas recovery system is economically not viable at the current gas price of Rs 2074. However the scheme becomes viable at the gas price of above Rs.2800.

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