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Sustainability of Residue Gas Compression System

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Abstract: Sustainability of residue gas compression systems, which operate under various conditions in natural gas processing, is critical to ensure a continuous supply of gas. Energy provides an important material support for the national infrastructure and for the national defense. High ambient temperatures in tropical countries like Bangladesh during the summer can significantly reduce performance and efficiency of gas compression systems including unwanted shutdown, popping up of pressure safety valve, flaring up of process gas, damaging the environment including emergency shutdown of plant production. These issues incur loss of revenue if cooling system of engine is not designed accordingly. To maintain specific sales gas temperature is very important for any gas production facility. The purpose of this research is to system analysis of residue gas compression systems of MSTE plant (Sylhet, Bangladesh); analyze reasons for the shutdown of compressor packages for high engine temperature. High temperature feed water of radiator can significantly reduce performance of compression system, while radiator cannot maintain engine jacket water temperature. Retrofitting the cooling water supply system can ensure sustainability of natural gas production. Effectiveness of radiator can significantly improve by maintaining feed water temperature.

Keywords: Sustainability, Molecular Sieve Turbo Expander Plant, Residue Gas Compression System, Engine Cooling System, Feed Water System, Engine High Temperature