

# **Effective combination of on-site measurements and simulations for a reciprocating compressor system**

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Abstract :

The capacity of two parallel operating BORSIG compressors had to be increased. TNO TPD was ordered to investigate the dynamic effects on compressors and pipe work in of the increase in flow rate and possibly pulsation induced vibration forces. First on-site vibration measurements have been carried out to check the existing system. Recommendations, which were based on the measured vibration levels, have been given to improve the existing supporting. As a result of the pulsation and mechanical response study according the API standard 618, design approach 3, additional modifications were recommended. All the recommendations have been implemented and finally on-site vibration measurements showed that no additional corrective measures were necessary. The combination of on-site measurements and an API 618 study proved to be optimal for existing systems.