Figure 8. Process response to sinusoidal pressure disturbance at 50% load

5. CONCLUSIONS

A systematic method for assessing the disturbance rejection performance of different control structures for the ALSTOM gasifier using GRDG is presented in this paper. The analysis is based on the transfer function model identified from the simulated process operation data based on the nonlinear simulation programme. The OE method is used in identifying process models because it can lead to models with good long range prediction (simulation) performance and, hence, accurate transfer function models. It is shown that Scheme 4 is the most favoured control structure among the 4 control structures considered. Simulation results confirm this finding. Studies in this paper also indicate that using RGA analysis is not effective in control structure selection for this benchmark process. It would be possible to find even better control structures using GRDG analysis and this is under further investigation.

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