



July 2021

To SEMAN Group and TIG:

Wabtec would like to congratulate you on your successful completion of the Scientific Energy Management and Savings project at our SanCasT facility located in Coshocton, Ohio. This letter presents our views and conclusions on this project.

The objective of this project was to improve the overall power quality and reduce the energy consumption at Wabtec's SanCasT facility. SEMAN performed a detailed engineering study to identify power quality problems in the electric grid and determine locations where customized interventions should be installed. These interventions were specialized detuned harmonic filters. Improved efficiency was achieved by reducing the current and voltage harmonics of the electric grid, improving the efficiency of the motors and transformers by stabilizing the voltage at the nominal level of 480V, and minimizing the reactive currents in the grid. All the interventions were installed at the low voltage of 480V.

Wabtec and SEMAN verified the energy savings by conducting electric measurements regarding the feeding rms currents of the loads. From the measurements, it was ascertained that reductions in the above currents took place, the voltage levels were improved and stabilized at the nominal level of 480V, and the current and voltage harmonics were reduced. The results of the measurements verified the guaranteed savings of 9.6%.

After three months of operation, a second method of verification was used to determine the energy savings. This method was a predictive mathematical model that correlated energy consumption to the production data and was iterated according to the international standards requirements. This model predicted what the energy consumption would have been without the SEMAN interventions, for the period which the SEMAN interventions were installed. By comparing the predicted energy to the actual value for that period, a 9.66% reduction in energy consumption

was verified. Both SEMAN and Wabtec data analysts verified the accuracy of the mathematical model by performing the necessary statistical tests of model evaluation according to international standards.

In conclusion, Wabtec considers the Power Quality Improvement and Energy Savings project a success. It improved the power quality and energy efficiency of our facility which resulted in savings on our electricity bill.

On behalf of Wabtec,



Michael Fetsko

President – Freight & Industrial Components

*This reference letter is not an endorsement of the SEMAN Group and TIG. It outlines Wabtec's experience with one facility where specialized detuned harmonic filters were installed.*

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