



NIKOLAIDIS TH. BROS SA

STEEL TUBES INDUSTRY

VAT Nr EL094056775 - THESSALONIKI - GREECE

Thessaloniki 25/10/2012

Dear Dr. Satsios,

With the present letter we would like to acquaint the following, regarding the Power Quality Optimization & Electrical Energy Saving Project realized in the electrical installations of the STEEL PIPE COMPANY "NIKOLAIDES BROS SA", by your company SEMAN SA based on your know-how.

The project concerned the power quality optimization with the reduction of the current-voltage harmonics, the improvement of Electrical Motors' and Power Transformers' efficiency and also the minimization of reactive currents in the inner of the plant's electrical installation, as well. For achieving the above targets Anti-resonance Harmonic Filters with electronic regulators that adjust their characteristics according the special needs of each electrical load, were installed on the electrical loads of the factory.

After the project implementation, which was completed in September 2012, the checking of the average reduction of the electrical loads feeding subpanels total currents at the electrical installations had been performed, through instant measurements taken place – by the presence of representatives of both sides – with and without the power quality optimization & electrical energy saving systems into operation. Specifically these measurements, with and without the power quality optimization & electrical energy saving systems into operation, were performed instantly, so as there will be no change in the loading of the electrical loads. From the above measurements the electrical energy saving finally achieved was much higher than the initial guaranteed of 12,5%.

Indirect, but very important benefits of the project realized by SEMAN SA inside the electrical

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ΠΡΟΒΑΝΤΩΝΤΗΣ ΔΙΑΧΕΙΡΙΣΗΣ

FACT EN ISO 14001:2004

Ap/Reviz: 174/01/2011



EN ISO 9001:2000

No 0101191





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installations of our factory were the following:

1. Optimization of local power factors with regard to the harmonic content and the reactive content, too.
2. Reduction of current – voltage harmonics, so as not to pollute anymore the electrical installations of the factory, the damages caused by them and consequently the maintenance cost of the factory be notably reduced
3. Electrical motors power factor improvement, because of the minimization of the counterclockwise electromagnetic torques caused by harmonics.
4. Power transformers' power factor improvement with copper and iron losses reduction.
5. Minimization of the reactive currents, which run the power distribution cables of the electrical loads leading to significant reduction in thermal losses.
6. Reduction of the maintenance cost of our electrical installation equipment's.

In conclusion, we would like to acquaint to you that we consider the specific project, implemented by your company and based on your know-how inside our electrical installations, totally successful, as it contributed to better operation, lower maintenance cost and to significant money saving on PPC (Public Power Corporation) invoices.

Best regards on behalf of

STEEL PIPE COMPANY "NIKOLAÏDES BROS SA"

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