



CASE STUDY

ESP Upgrade project at Raw Mill ESP

Application

Raw Mill ESP in Cement Plant, Thailand with production capacity of 38,500 TPD

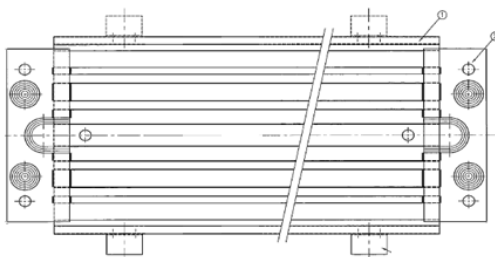
Problem

The Raw Mill ESP has been operated for more than 20 years. Some mechanical parts inside ESP have never been replaced since installation. Collecting plates are still old type which already obsolete from the market. Plant also plans to increase the current production around 16% from the present value. Moreover, customer expects to maintain emission limit at 50 mg/Nm³.

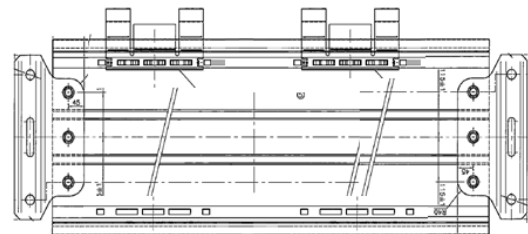
Solution

Tai & Chyun analyzed plant's data such as ESP original design against production increase, and then came up with the most economical ESP upgrade plan for improving ESP collecting efficiency to handle the increase in particulate emissions from production upgrade.

We were awarded to supply 2 fields of RDE and 4 fields of newly modified design of CP that is compatible with the old type with stronger interlock, together with two units of high frequency transformer (HFTR) installed at the ground level for 3rd and 4th field of ESP in order to improve the efficiency of high voltage output.



Old CP Design



New CP Design

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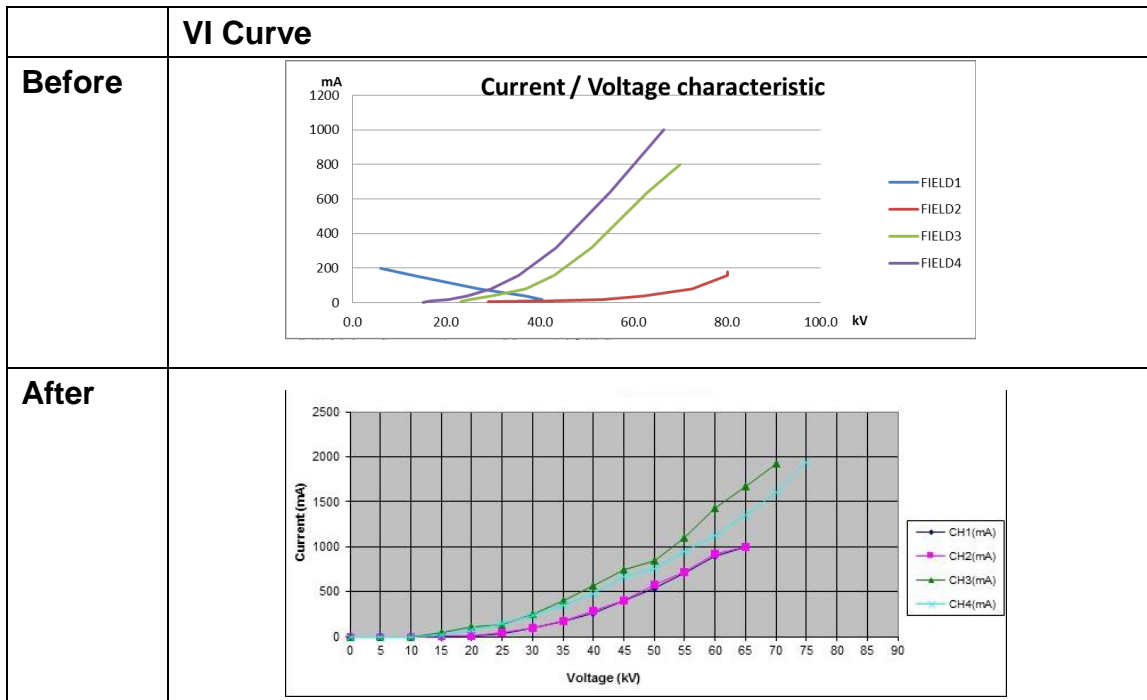
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Benefit

After upgrade, new RDE and CP together with HFTR can operate with better power input into the ESP at a higher voltage level, providing more kW into the ESP. VI curve before and after replacement is shown as below.



In addition, the emission result also showed the value below 35 mg/Nm³, successfully fulfilling customer's requirement. Moreover, HFTR can be placed on the ground according to the current location of transformers, reducing the installation difficulty and provide convenience to customer.



Installed HFTR in 3rd and 4th Field of ESP



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Installing HFTR



Installed HFTR



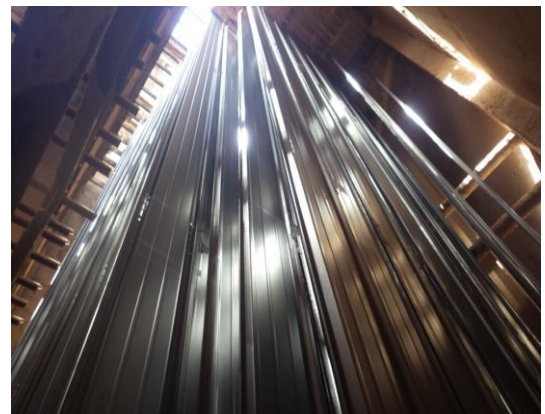
Installing Controller



Installed Controller



Installing CP



Installed CP