



Biomass powered power plant EPZ in Borssele go's for **“No Risk “**



EPZ power plant in Borssele

Ab de Kroot is maintenance engineer at the EPZ power plant in Borssele. This is not the well known nuclear power station but the coal/biomass powered power plant built at the same location. The amount of biomass has to be increased in the future and a correct dosing of the biomass is than even more important. “In 2008 we installed rotary valves playing a crucial role in the process. As a power station is a continuous operated business, we have made special agreements with our supplier TBMA about maintenance and availability of the spare parts.”



“We have sufficient capacity left to grow in the future with biomass”.

“Since 2002 we are burning biomass in the coal fired power plant in Borssele, nowadays this is 20% meaning 12 kg/second . The intention is to go up to 30% in the near future. The Biomass consist out of used wood and agrarian rest products like cacao shells and palm pulp. As wood dust burns easier than coal it can be somewhat more rough. In 2008 our installation was in use for several years and we had all kinds of problems on regular bases with wood dust as fuel. We also wanted to increase the amount of biomass which was not possible with our installation. Together with TBMA we analysed the problem. In 2009 we exchanged our six rotary valves for the TBMA blowing seals. Our experience learned that this exchange system works perfect with a lifetime of 8 months. We are now burning wood dust without any problem.”



Ab de Kroo is maintenance engineer at EPZ



Six Rotary valves

The material is arriving in bulk trucks 6 days a week and dumped in two cellars. From there the product is transported to a huge rotating sifter removing the oversized particles and then transported by means of an elevator to four large silos measuring 600 m³ each.

“The rotary valves are in fact the accelerator of the biomass installation “

Ab de Kroo; “If required for the production we can mix the content of the silo’s and store it in the intermediate bunkers measuring 250 m³ above the hammer mills.

In the hammer mills the pellets are reduced to a fibrous material . Normally the power plant is fed with powder coal which is considerably finer than wood dust. As wood dust burns easier than coal it can be somewhat more rough”

Each hammer mill has an intermediate bunker with underneath two rotary valves regulating the amount of biomass going to the burner. Totally we have 6 feeding lines each with its own roots blower blowing the product in to the burner. In the burner there is a slight under pressure sucking



TBMA HGR Valve

the product into the fire, therefore a flame flash back can not occur.

De Kroo; “ The rotary valves are in fact the accelerator of the biomass installation.

The nuclear power plant is delivering a constant output , the coal/biomass installation is taking care of the fluctuations in power demand”.



More Capacity

About the investment in new rotary valves De Kroo says; "In 2008 our installation was in use for several years and we had all kinds of problems on regular bases with wood dust as fuel. The product is relatively light and our rotary valves were producing a lot of air leakage and we therefore were not able to regulate our installation in a proper way. We also wanted to increase the amount of biomass

"TBMA proposed us a special designed blowing seal"

which was not possible with our installation.

In that year I met TBMA at the Solids fair in Antwerp. Together with TBMA we analysed the problem and looked for a solution to dose Wood dust with a bulk density of 250 Kg/m³ and a capacity of 2 kg/second. TBMA proposed us a special designed blowing seal which is besides air leak tight also wear resistant due to a special adapted coating.

During the maintenance intervals in 2008 and 2009 we exchanged our six rotary valves for the TBMA blowing seals in two steps and purchased also two spare valves. De Kroo; " The spare valves are used to exchange the valves preventative".



A set of two rotary valves underneath the hammer mills



100% Up-Time

Our experience learned that this exchange system works perfect with a lifetime of 8 months. De Kroo; “ Each time we exchange two valves with two spares. The exchanged valves are sent to TBMA for revision. Sometimes we feel revision is not really necessary yet, but we choose to let TBMA exchange the wear parts anyway. We do not want to take any risk in this. Reliability is priority.

We want to be 100% sure each exchanged valve will last for a minimal of 8 months without any intervention”.

“We are now burning wood dust without any problem”

Exchanging the valves is done by EPZ to be as flexible as possible. De Kroo is content about the changes “We are now burning wood dust without any problem. Following

the changing demand in power works smoothly. We have sufficient capacity left to grow in the future with biomass”.

Since that moment TBMA has delivered several biomass systems in biomass for companies like Electrabel, RWE , Juwi and many others. The rotary valves are executed with pressure tight and flame back flash protection.

**Published :
Solids processing
Januari 2011**