

شركة الشعيبة للمياه والكهرباء

Shuaibah Water & Electricity Company

C. R.: 4030163258

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TO WHOM IT MAY CONCERN

Subject: Appreciation Letter, Fluitec

Shuaibah Independent Water & Power Plant approached Fluitec in November 2013, looking for a solution to a problem of lubricating oil deposits seen in a bearing of Steam Turbine 20, a Siemens unit, seen and photographed during a shutdown on 26 September 2013. We were most concerned about the possible negative impact of this deposit on our reliability and uptime, and about possible high costs associated with this, and were looking for a really effective solution.

Fluitec, together with ISCOSA-Siemens, proposed the use of the selective varnish removal technology, uniquely able to remove soft soluble contaminants from oil online, called Electrophysical Separation Process, or ESP.

After Fluitec provided clear and detailed technical explanations regarding this technology, Fluitec's ESP336 unit was started on 6 January 2014 on our Steam Turbine 20. The ESP 336 was installed online, in kidney loop, while our turbine was running. Starting, operating and maintaining our ESP336 has proved most straightforward and trouble-free.

Upon startup, the lubricating oil Steam Turbine 20 was in a worrying condition, with a MPC delta E value of 37, signifying a high risk of deposits, and a very high particle count of 23/20/13 (ISO4406), very much above acceptable cleanliness.

By the use of our Fluitec ESP336, the MPC value of the oil has been reduced to very low levels and is maintained at these very low levels, as low as MPC delta E of 6. Particle count has also dropped sharply and is now stabilized at a good level, currently at 17/16/12.

We have also use this Fluitec ESP336 to keep our Steam Turbines 10 and 30 contamination-free, and it is also keeping MPC delta E and ISO4406 particle count at very good levels in those 2 other steam turbines. As such, our Fluitec ESP336 unit is proving to be a most profitable investment.

Fluitec is also being most proactive and innovative, in bringing to Shuaibah IWPP's attention new technologies and solutions, to extend the life of our turbine oils and avoid costly oil changes and shutdowns, and also to keep our Fire Resistant Phosphate Ester Hydraulic Fluids free of contaminants, to keep them in top conditions for decades.

We very much look forward to continuing to work with Fluitec into the future, and have no reservation in recommending Fluitec as a top contributor in the field of turbine fluids health.

Yours faithfully,

Hairul Nizam, Technical Director (Asset Management)
Shuaibah Water & Electricity Company, Shuaibah-IWPP
Jeddah, Saudi Arabia.