GE Power & Water
Water & Process Technologies

Case Study

GE EDR System Solves Wastewater Ash Pond Capacity Issue for Power Plant

KOSEP Plant

Challenge

Korean Southeast Power Company (KOSEP) uses ash ponds for their wastewater streams. In the past, the ponds were able to recycle the water back into the atmosphere through evaporation. Recently, the ash pond system has not been able to keep up with their wastewater volume causing the ponds to fill up. KOSEP needed a solution to clean up the water for reuse as make-up water for their desulphurization unit.

Solution

KOSEP worked with their EPC provider and GE to design a solution to their ash pond challenge. GE proposed using the GE Electrodialysis Reversal (EDR) system because of its ability to handle high suspended solids in the stream within a small footprint.

The pond water conductivity is about 7000 to 8000 µS/cm with high levels of suspended solids. To use the water for the desulphurization system, the chloride concentration level also needed to be lower than 500 ppm.

Results

The EDR reduced the conductivity and suspended solids while lowering the chloride concentration within the needed limit. This water can be used as make-up water to their desulphurization system. Figure 1 shows the process diagram and how the ash pond reuse is incorporated into the existing wastewater treatment system.

The ash pond water reuse system allowed KOSEP to reduce the cost of their water and wastewater, and it solved the issue of their ash pond capacity.

Ultimately the customer chose GE because they had experienced consistent performance with their existing EDR wastewater systems.

GE EDR System

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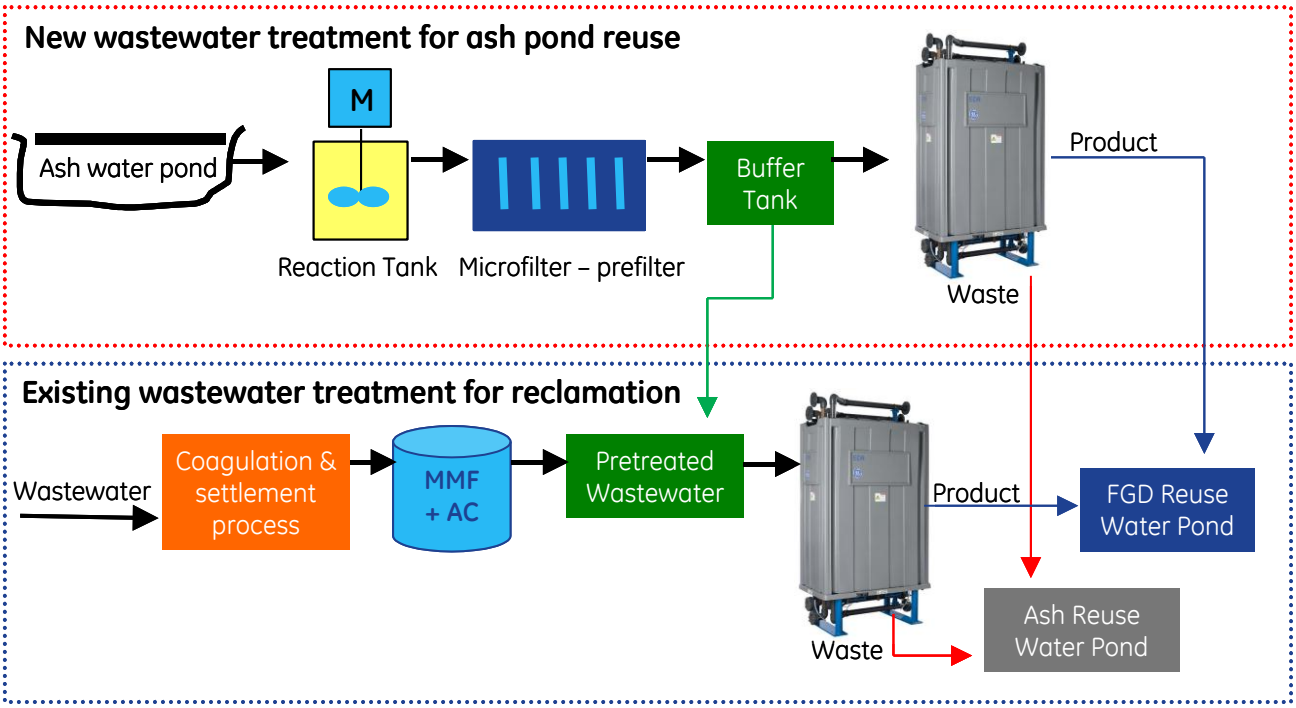
Figure 1: Ash pond process diagram



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