

50% Energy Reduction in Disc Filter Dilution Pump

Problem:

300 HP pump was very inefficient and too large for disc filter dilution even with a minimum size impeller. Large amount of energy was wasted in control valve (30 to 45% open).

Solution:

A spare 150 HP pump from reject cleaners was able to meet the dilution requirements after impeller upgrade to 335 mm from 320 mm.

Energy Savings:

- 50% Reduction, 120 HP or 900 Mwhr/y
- \$65,000 per year or
- Equivalent to 125 homes off the grid

Cost and Payback:

- ~ \$25,000, Payback: ~5 months

Involvement:

Energy Team	Idea and persistence
Engineering	Piping changes
Mechanical	Impeller change
E&I	Logic change
Operation:	Lockout and commissioning

Total Energy Savings in Pumping:

Pump Optimized	17
Energy Savings	10,150 Mwhr yearly
Savings \$\$	\$750,000 yearly
Total Cost	\$185,000
Overall payback	~ 3 months

Contact:

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