NALCO Water
An Ecolab Company

Southeastern Pulp Mill Increases Lime Mud Filter Capacity with a Dewatering Aid Program (ROI 66%)

The lime mud filter washing frequency was decreased from 3x per day to 1x per day.

Situation

A southeastern pulp mill, producing bleached board and market pulp, was experiencing downtime on the two lime mud precoat filters feeding the lime kilns. This downtime was associated with filter blinding. The filter had to be taken out of service and washed three times per day. Fresh lime had to be purchased to supplement the lack of reburned lime.

Program

A local Nalco Water sales engineer proposed a Nalco Water dewatering aid be trialed on one of the lime mud filters. If successful the program would then be carried over to the second lime mud filter. The dosage to the #1 mud filter was 0.25 ml per gallon of lime mud (123 ppm based on lime mud flow or 1.6 #/t of reburned lime). The product was fed to the suction side of the lime mud feed pump. Before the trial the mill was purchasing 62 tpd of fresh lime makeup.

Initial results were encouraging enough to start the second trial on lime kiln mud filter #2. For this the dosage was 0.24 ml per gallon of lime mud flow (118 ppm based on lime mud flow or 1.4 #/t of reburned lime).

During the trials the plant monitored the following: (1) green liquor flow, (2) feed end temperature of the kiln, (3) mud flow to the filter, (4) oil flow to the kiln, (5) lime production, (6) fresh lime makeup, and (7) mud solids off of the filter.

Results

Lime Kiln #1: The lime mud filter washing frequency was decreased from 3x per day to 1x per day. The purchased makeup lime was decreased from 62 tpd to 34 tpd. The % solids off the lime mud filter was increased from 69.1% to 72.3%. The overall lime quality was stabilized during the trial as a result of less frequent filter washing and more effective temperature control within the kiln.

Lime Kiln #2: The lime mud filter washing frequency was decreased from 3x per day to 1x per day. Again, lime quality was stabilized due to less temperature variations within the kiln due to more constant oil flow.

Conclusions

The increase in incremental production from less filter washing equated to the displacement of $1350 per day of purchased lime from both kilns. The decrease in moisture going to the lime kiln from the #1 lime mud filter translated to a savings $173 per day. This calculates to an incremental savings of $216,195 per year for an ROI of 66%.

Nalco Water, an Ecolab Company
1601 West Diehl Road Naperville, Illinois
60563-1198 ecolab.com/nalco-water