RECAUSTICIZING SYSTEMS

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The recausticizing plant is part of the Kraft pulping process.
The main purpose of the pulp line is to remove the lignin from the fibers and produce a pulp of good properties of brightness and strength.
The Kraft process is known to be energy intensive and a large consumer of chemicals. The main purpose of a Kraft pulp mill is to produce pulp at a given brightness while minimizing energy costs, utilities and chemicals used.
Three main reactions take place in the recausticizing department. First, the causticizing reaction that occurs in two steps: the lime reacts first with water ("slaking") to form calcium hydroxide Ca(OH)$_2$, which in turn reacts with sodium hydroxide:  \[ \text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 \] (exothermic reaction) \[ \text{Ca(OH)}_2 + \text{Na}_2\text{CO}_3 \leftrightarrow \text{CaCO}_3 + 2\text{NaOH} \] (equilibrium reaction) Then, the calcium carbonate is converted to lime in the lime kiln:  \[ \text{CaCO}_3 + \text{Heat} \rightarrow \text{CaO} + \text{CO}_2 \] (combustion of the lime mud)
RECAUSTICIZING PLANT

Complete range of equipment for recausticizing system are white liquor clarifier, green liquor clarifier, dregs washer, dregs mixer, lime slaker-classifier, causticizer, recausticizer, lime mud washers and lime mud filter.
Recausticization Reactions

\[ \text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2 \]
\[ \text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 \]
\[ \text{Ca(OH)}_2 + \text{Na}_2\text{CO}_3 \rightarrow 2\text{NaOH} + \text{CaCO}_3 \]

Recausticizing

[Diagram showing the process of recausticizing]
Recausticizing Plant
QUESTIONS?
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