

VIBRA SCREW CASE HISTORY



C-215

Southern TMP plant assures chip flow with Bin Activators

Customer

Boise Southern Company, DeRidder, Louisiana. Major producer of thermomechanical pulp (TMP) for newsprint.

Problem

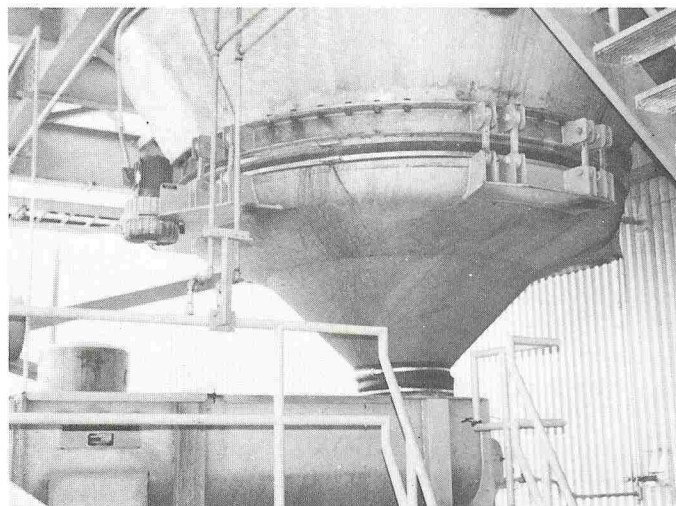
At its Louisiana TMP plant, Boise Southern Company makes its own wood chips from Southern pine with a particle size of $\frac{5}{8}$ inch. Bulk density of the chips is 20 to 25 lbs. per cu. ft., and moisture content is about 50%. The chips are sent by conveyor from the chipper in the wood yard, through screens, then to storage. They are stored in a 16 ft. diameter by 28½ ft. high carbon steel welded bin, which is tapered to a 12 ft. diameter bottom. The chips are conveyed pneumatically to the top of the bin where a cyclone separates the air from the chips. The process calls for chips to feed in a constant flow from the bin to a metering conveyor, then to a chip washer. From there they go through a series of screw conveyors to feed the company's refiners. After the thermomechanical pulp has been made, it is sent out to the news machines. Full production of this process calls for 450 tons per day of TMP pulp. Since wood chips, especially when they have a high moisture content, interlock, bridge or rathole, a method is needed to eliminate unacceptable flow stoppages.

Solution

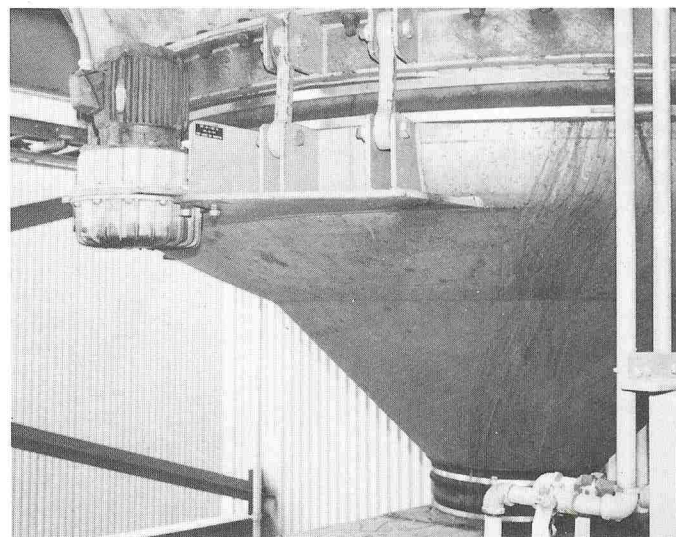
Vibra Screw Bin Activator, 12 ft. diameter, carbon steel construction, preassembled mounting ring. On the basis of successful previous experience, the company installed a Vibra Screw Bin Activator under the storage silo by means of a preassembled mounting ring. The Bin Activator is a vibrated bin discharger consisting of a relatively flat dished head and baffle. These flat support surfaces carry the overhead load without resulting in the compression that occurs in a conical bottom. The Bin Activator employs controlled vibration by horizontal thrusts from its powerful gyrator, which vibrates the Bin Activator and the material in the bin, but not the bin itself. Directly above the outlet, a special integral baffle, exclusively designed by Vibra Screw, relieves headload and transmits vibratory thrusts high up into the bin to eliminate bridging.

Results

A critical factor in achieving full production of pulp is a constant feed rate of wood chips into process. Thanks to the Bin Activator, the flow of wood chips has been successfully maintained since its installation. Power consumption is low and maintenance is minimal.



At Boise Southern, a critical factor in achieving full production of pulp is a constant feed rate of wood chips into process. Thanks to the Vibra Screw Bin Activator, the flow of wood chips has been successfully maintained since its installation.



The Bin Activator employs controlled vibration by horizontal thrusts from its powerful gyrator (left), which vibrates the Bin Activator and the material in the bin, but not the bin itself.