

VIBRA SCREW CASE HISTORY



C-245

Vibra Screw Equipment Helps Make Possible Efficient Nickel Alloy Dust Recovery

Customer

Huntington Alloys, Inc., Huntington, W. Virginia, a subsidiary of Inco Limited.

Problem

The Huntington plant has two bag houses which accumulate nickel alloy dust. This valuable scrap is -325 mesh and has a bulk density of 60 lbs. per cu. ft. Its metal content is 60% or more, and for the past year, it has been pelletized at a nearby plant and then shipped to an Inco plant in Canada for smelting. The dust cannot be directly recharged back into an electric arc furnace because it is light and would be just blown back out into the air. In-house pelletizing was desirable, but its feasibility depended on the ability to provide dependable, consistent feed of the nickel alloy dust to a pelletizer. Inaccurate feed of material at either extreme produces huge, soft chunks the size of a softball, or a slurry of little pellets which stick together in clumps. The goal: 1/2 in. rock-hard pellets, which can only be obtained with correct water content and consistent feed.

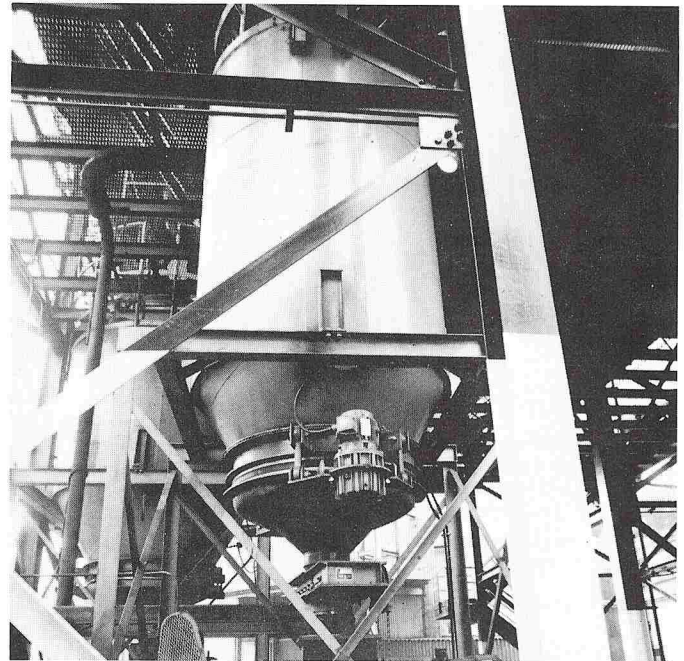
Solution

2 Vibra Screw Bin Activators, 6 ft. and 4 ft. diameters, carbon steel construction, preassembled mounting rings. 2 Vibra Screw HD-2 Feeders, 4-in. flight screws and tubes, carbon steel construction.

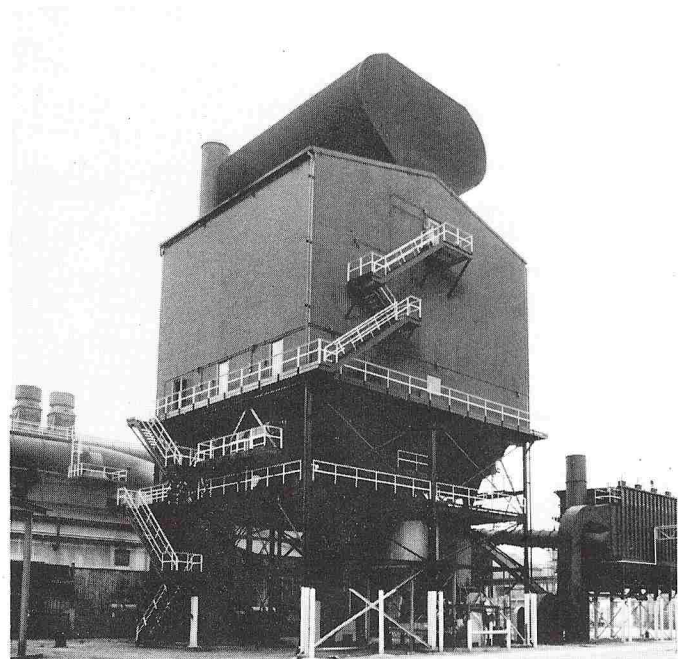
Mars Mineral Corporation of Valencia, Pa. was commissioned to provide a pelletizing system for the Huntington plant. The system consists of two steel storage bins, two Bin Activators flexibly mounted to the bottom of the bins, two Heavy Duty Feeders, and a Mars drum pelletizer. The storage bins, 10 ft. and 6 ft. diameter respectively, accumulate dust from the bag houses. As the bins fill up, the Bin Activators, employing controlled vibration of the Activator itself, plus that of an internal baffle, provide a steady flow of material to the Heavy Duty Feeders. Uniform and accurate feeding is assured by two factors: 1) dependable flow from the Bin Activators, and 2) controlled vibration of the rotating screw of the feeders. Effective operation of the drum pelletizer is dependent on the Bin Activators and Heavy Duty Feeders which supply it with nickel alloy dust.

Results

In-house recovery of valuable metals is now standard operating procedure at Huntington Alloys. Additional benefits are improved housekeeping and handling of nickel alloy dust, and independence resulting from no longer needing to rely on an outside agency.



2 Vibra Screw Bin Activators and HD-2 Screw Feeders provide a uniform and accurate flow of nickel alloy dust.



Huntington Alloys is able to pelletize their nickel alloy dust in-house, using Vibra Screw Bin Activators and HD-2 Screw Feeders.