

CASE HISTORY



**POWER GENERATION:
ELECTRIC VIBRATOR INSTALLATION**
Correct Vibrator Makes Woodchips Flow Like Water



Electric Vibrator Mounted to Railcar Solves Unloading Problem

INTRODUCTION

This job story details the benefits of selecting the correct rotary electric vibrator to prompt and then maintain the flow of stubborn bulk materials, in this case woodchips, from railroad hopper cars. In this case, unloading a complete train was taking up to seven hours, relying on gravity and manual poking and prodding because the woodchips would bridge and rat-hole above the railcar's gates. When the train schedule was delayed, lack of woodchip fuel reduced production of electricity.

PROBLEM IN MORE DETAIL

Five days a week, a 21-car train delivers over three million pounds of match-book-sized woodchips used for fuel at a power generating station in New England. Concerns for personnel safety and wasted labor costs, as well as the need to meet the scheduled unloading time of two hours (rather than the existing seven hours,) mandated that a better system be found. The generating station had tried using a variety of portable pneumatic and hydraulic vibrators; however, these produced unacceptable drawbacks including a noise level that was objectionable to neighbors, railcar damage due to poor vibrator mount accessibility, and concerns for the safety of personnel handling portable vibrators in sub-zero weather.

SOLUTION

AIRMATIC Application Specialists surveyed the situation and recommended MARTIN® Rotary Electric Vibrators to promote the flow of this difficult fibrous material. They are usually applied to bins, hoppers, and silos, among other places. In situations where clinging, bridging, or rat-holing of material occurs, the introduction of a correctly-sized, securely-mounted rotary electric vibrator can help recover lost material, accelerate process flow, increase efficiency and improve safety. AIRMATIC Application Specialists suggested a MARTIN® 1800 RPM, 10,000 Force-Pound Vibrator be permanently mounted beneath each railcar to act as a woodchip "pump". To confirm effectiveness, the Vibrators were periodically stopped and when they were, the flow stopped as well – completely. With the Vibrators on the railcars, the entire train was unloaded in less than the two hour "design" goal, which not only means production of electricity was maintained, but also community relations improved as both vibrator noise and length of noise exposure was significantly reduced.

CONCLUSION

As this case study shows, installing and properly mounting a rotary electric vibrator with the correct force and frequency not only solved the immediate problem of plugged railcars which caused unloading delays, but also decreased maintenance costs, reduced the risk of lost-time-injury, significantly cut labor costs and increased productivity.

For more information on Rotary Electric Vibrators and other products and services provided by AIRMATIC INC, [click here](#).

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