

TOTAL SYSTEM RESPONSIBILITY: TIME IS MONEY: A CASE HISTORY

Leading Packaging Manufacturer Needs to Unload a Railcar in Less than One Shift

In 2005, paper manufacturers became eligible for the Alternative Fuel Tax credit for their re-use of bio-mass to fuel their plants.

One of the world's largest producers of folding cartons and coated boxboard packaging has earned a reputation for their emphasis in sustainability.



USS designed the entire system from railcar unloading to storage to wet mix tank.

Their commitment to sustainability and an opportunity to earn a significant tax credit led them to further rely on energy output provided by the bio-mass by-product in their plants

Black Liquor is a by-product of the manufacturing process which is used to fuel the on-site power plant that creates as much as 66% of the electric energy used by the mill.

To prepare the black liquor for the power plant, salt-cake needed to be

hauled in by rail, transferred to a storage silo, and metered into a wet mix tank.

The company selected United States Systems to design and manufacture the complete salt cake conveying, storage, and mixing system. Project objectives necessitated an efficient system with the ability to unload an entire railcar in less than one operator shift.

US Systems met the design challenges by engineering a continuous flow airlock system to meet project specifications.

A concern expressed by the salt cake supplier was that moisture from the 200° F liquid in the mix tank would rise through the rotary valve and make it's way into the silo cone. Moist salt cake will not flow properly.

USS engineered the system to minimize the migration of moisture into the spout by utilizing a slide gate to isolate and seal the moisture from the airlock. However, when the gate is open and the salt cake is being added to the wet tank, moisture might still migrate upward.

To solve that potential problem, engineers at US Systems devised a way to purge the zone below the airlock with compressed air while the gate is open. The compressed air causes a net downflow of air and minimizes the moisture migration upward into the spout.



Two Blowers run continuously for maximum throughput.

The uniquely engineered solution proved successful and they are now unloading up to 6,000 lbs/hr of salt cake to the wet mix tank.

US Systems technicians provided the startup assistance to get the salt cake moving quickly and trained personnel in operation and safety.



Operators use USS urethane sleeves to quickly hook hoses up to the railcar.

For information on how US Systems can solve your bulk handling problems call 1-888-281-2454 or visit UnitedStatesSystems.com