



Plant Safety Enhanced by Eliminating Dust & Spillage

PROBLEM SUMMARY

A coal-fired power plant in the eastern US had an aging reclaim tunnel system in need of replacement. The system consisted of two parallel conveyors with seven vibratory feeders, two of which were out of use due to their location under the stockpile. Belt loading was inconsistent and off-center loaded, resulting in spilled material, associated cleanup costs, and a lower feed rate to the plant. Maintenance costs on the vibratory feeders were escalating, and parts were unavailable as these feeders had become obsolete. The two out-of-use feeders had been cannibalized for parts.

BENETECH SOLUTION

Benetech designed and installed new belt feeders and hoppers, delivering a full turnkey project, including installation and commissioning. The belt feeders featured a motorized head pulley to conserve available space in the reclaim tunnel, along with Benetech's MaxZone® System along each belt line. The new hoppers were equipped with eight Benetech Clean Sweep nozzles each, ensuring proper material flow and preventing plugging during wet and cold operations. All equipment was constructed from stainless steel for better corrosion resistance and longer life.

Benetech also provided Simple Slide conveyor idlers, installed on 12-inch centers throughout the load zone for proper belt support, minimal belt wear on the back cover, and ease of maintenance with their slide-out design for roll changes.

The project spanned multiple years and was executed during planned outages to minimize impact on plant operations. During the first outage, one feeder was replaced, and one of the inactive feeders was removed to demonstrate proof of concept for using belt feeders instead of vibratory feeders. Results were immediate, prompting the plant to proceed with the remainder of the program. The second and third feeders were installed in the subsequent



IT PAYS TO IMPLEMENT BENETECH SOLUTIONS

- Improved employee safety through reduced safety hazards associated with fugitive dust and material spillage
- Enhanced operational efficiency, ensuring a consistent and reliable feed rate to the plant
- Reduced future downtime costs by minimizing delays caused by hopper plugging
- Cost and time savings from simplified maintenance and reduced cleanup requirements
- Increased equipment lifespan with stainless steel construction and advanced design features

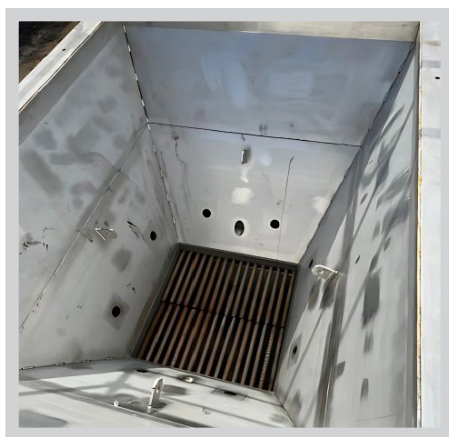
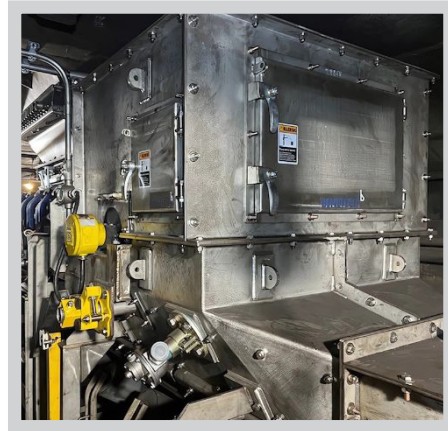
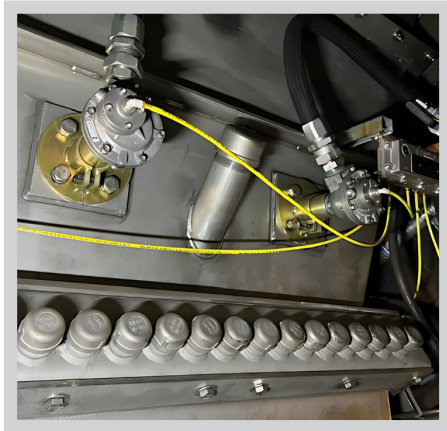
year, and the fourth and fifth feeders were installed during a third outage, during which the remaining unused feeder was also removed. For each outage, the stockpile was pushed off the top of the tunnel, old equipment was removed through openings in the tunnel roof, and new equipment was installed in reverse order.

Benetech products included, but were not limited to:

- 1. MaxZone® Load Zone System** — A belt enclosure system with easy-to-access, externally adjusted skirtboards; internal wear liners; dust curtains designed to disrupt air flow streams and prevent dust escaping the enclosure; and rubber skirting to prevent dust leakage along the sides of the conveyor.
- 2. Clean Sweep** — A pneumatic cleaning system using a synchronized series of nozzles that emit high-pressure, high-volume, 360-degree bursts of compressed air to lift and sweep stalled material back into the flow stream.
- 3. Simple Slide Idlers** — Roller frames that quickly slide into place without the need to remove adjacent idlers, resulting in excellent serviceability and improved safety.

SUCCESSFUL RESULTS

The project provided the plant with significantly improved belt loading, resulting in a more consistent and reliable feed to the plant, along with reduced cleanup requirements due to vastly lower material spillage and reduced dust generation. Delays caused by plugging of the hoppers were minimized, improving the uptime of the reclaim conveyor system. By implementing Benetech's turnkey solution, the plant achieved significant operational, financial, and safety improvements.



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