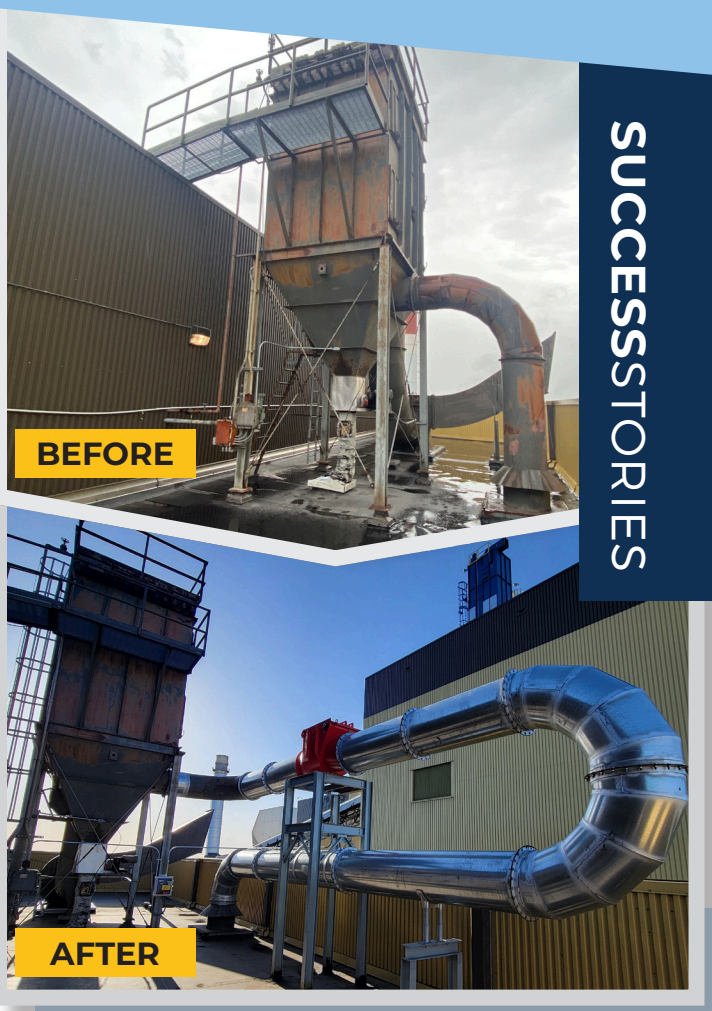
COAL

BENETECH®

NFPA-Compliant Dust Collection Retrofit at Coal Plant

SUCCESSSTORIES



PROBLEM SUMMARY

A coal-fired power plant faced serious safety concerns following a silo explosion that occurred several years prior. The incident exposed a critical weakness in the plant's dust collection system, specifically, the lack of explosion isolation equipment to prevent flame propagation through the ductwork. In the event of another explosion, the absence of an inlet explosion isolation valve could allow a flame front to travel through the ducts into silos or buildings, causing catastrophic damage and endangering personnel. In response, the plant's insurance provider mandated the installation of a compliant inlet isolation valve system in accordance with National Fire Protection Association (NFPA) regulations.

BENETECH SOLUTION

Benetech delivered a turnkey solution to address both the immediate compliance issue and long-term safety of the plant. An inlet explosion isolation valve designed to halt the propagation of flame fronts through the ductwork was engineered and installed. To ensure full system effectiveness, Benetech engineered custom ductwork modifications that met the necessary distances and geometry constraints required for the isolation valve's proper function.

Recognizing that changes to the duct system could affect airflow performance, Benetech also conducted a detailed assessment of the added ductwork losses. The engineering team verified that the airflow velocities remained above the NFPA-required 4,000 feet per minute (FPM), maintaining both regulatory compliance and dust control efficiency.

IT PAYS TO IMPLEMENT BENETECH SOLUTIONS

- Regulatory Compliance Achieved: System now meets NFPA standards.
- Improved Safety Profile: Reduced the plant's risk profile through engineered isolation.
- Significantly Reduced Maintenance Time and Cost: Preventative design minimizes damage risk and future unplanned downtime.
- Repeat Business: Successful implementation led to a follow-up project, demonstrating customer satisfaction.

SUCCESSFUL RESULTS

The project was a success on multiple fronts, thanks to the technical expertise and problem-solving approach of the Benetech team. The plant achieved a significantly improved safety and full compliance with NFPA standards, effectively mitigating the spread of future explosions through the ductwork. The installation of the explosion isolation valve provided crucial protection for both personnel and infrastructure, restoring confidence among plant employees and leadership. Recognizing the quality of work and professionalism delivered, the plant tasked Benetech with a second isolation valve project, demonstrating both customer trust and project success.