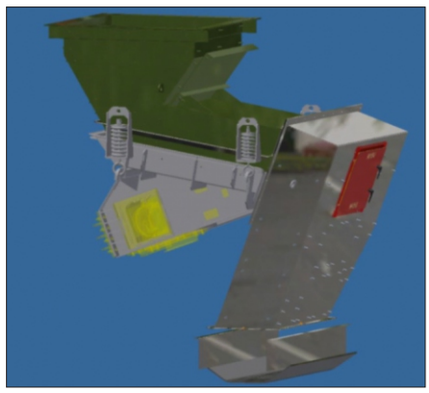
ASGCO® Engineering Design, Point Cloud Scanning Technology, Chute Fabrication, Syntron Feeders and Product Installation Provide Complete Turnkey Service at This Eastern Coal Fired Power Plant.

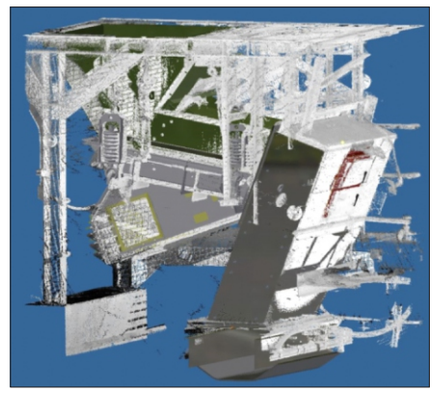
Industry:	Coal Fired Power Plant
Application:	Underground Inclined Coal Handling Conveyors
Products & Services:	ASGCO® Complete Turnkey Services, Point Cloud Laser Scanning, Syntron XPMF-200 Feeder, Fabricated Chute/Hopper, Safe-Guard® Inspection Door and Nitronic SX Wear Liners
Objective:	The older existing feeder was clogging and not producing enough product flow to supply the operation. The objective was to restore and control the material flow from an above ground surge to the underground conveyor belt that feeds the power plant.

Challenge:

The conveyor descended down an incline into a narrow underground tunnel making movement difficult. The existing heavy feeders and knife gate needed to be removed but getting over the obstructions (such as existing equipment, detouring around piping and railings) was extremely challenging. In addition, five to six layers of stainless steel liners in the surge pile that feeds into the hopper had to be trimmed and cut in order to fit the new hopper against the ceiling. The need for accuracy in the design and prefabrication of the feeder system and chutes to fit the existing structures was extremely important to meet the plant's capacity flow of 300 TPH of 2" minus coal.



3D AutoDesk Model developed by Engineering.



3D Model overlaid into ASGCO® Point Cloud Scan.

After installation of new feeder, chute and hopper.

Recommendations/Solution:

ASGCO® engineers would provide an onsite Point Cloud Scanning survey to provide accurate measurements of the facade and structures. A 3D model would then be developed of the hopper, chute and vibratory feeder system and then overlaid into the Cloud Point Scan to check for interferences. On this project an XPMF-200 Syntron Direct Drive Electromechanical Feeder with VFD Controller in a Nema 4/12 enclosure, would be designed and installed to replace an older existing feeder and meet the capacity needed. Also a Remote Control Box with manual potentiometer and start/stop buttons in a Nema 7/9 enclosure would be provided for remote mounting. ASGCO®'s Fabrication shop would then fabricate the new hopper and chute and line it with Nitronic SX™ wear liners to create a surface that would work harden and have a low coefficient of friction. A Safe-Guard® Conveyor Chute Inspection Door installed on the chute would offer safe inspection and clean out.

Results:

ASGCO®'s installation crew of four (4) people, was able to remove the old feeder and knife gate and install the new Syntron Vibratory Feeder and fabricated chute and hopper. The customer is now experiencing the desired rate of material flow to supply their operation and they no longer have to stop operations due to blockages.

Existing corroded chute and knife gate.

Before installation of new system.

After installation of new system.

After installation of new system.