

THE CUTTING EDGE

This project was a gas!

Coal gasification is a process that produces synthetic natural gas used for heating and making energy, fertilizers like ammonium sulfate and anhydrous ammonia and other various chemicals used in industry with far fewer emissions than traditional processing methods. Over time, the corrosive nature of some of these products will have damaging effects to the structural steel on the plants they are produced in. One such plant operated by the Dakota Gasification Company in North Dakota that had been in continuous operation since 1995 was in a state of disrepair, and needed to be retrofitted with new corrosive resistant steel.

Grunau Metals was selected to fabricate and deliver a new centrifuge deck and compaction deck within a planned 1 month shut down of the facility. Timelines were very tight considering a shutdown like this happens only once every decade, and it was only one of several major facility and safety upgrades happening at the same time. The massive stainless steel beams needed for the retrofit weren't something you can find at a local supplier, so Grunau Metals literally scoured the earth looking for material and ended up finding it in Switzerland. When all was said and done, the material order contained the largest 6 beams the manufacturer had ever produced and the total material order weighed in at a whopping 150 tons.

But locating the material was only half the challenge — because the decks were going into a corrosive environment, there could be no cross-contamination from carbon steel to the new stainless steel beams. The team at Grunau Metals stepped up to the challenge by segregating an entire existing bay just for working with the stainless material. Stainless floor laminated tables were used to fit up and assemble stairs, railings and floor components. Even heavy machinery used to handle the large metal beams were fitted with stainless steel protective measures to minimize any chance of cross-contamination. On top of all these measures all parts were passified to remove any lingering carbon residue and contamination.

On a visit to the Grunau Metals facility, Dakota Gasification engineers were pleased with their inspection of the fabrication processes and the measures of material protection that were taken. The 8,616 square feet of production deck steel was fabricated, delivered and installed with out issue. During a follow up with plant managers, Grunau Metals discovered that the fabrication processes utilized on the front end to ensure negligible cross-contamination, produced a finished product that is outperforming that of previous fabricators.



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