voestalpine Nortrak

voestalpine Nortrak is North America's leading designer, manufacturer and supplier of special trackwork materials. The company is a division of voestalpine VAE who is global market leader in technology for railways, metros and subways. The group includes 8 manufacturing facilities in North America and 28 plants located worldwide.

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voestalpine Nortrak's foundry facility in Decatur, Illinois, produces both ductile iron and manganese steel castings for use in railroad/trackwork. The company's aim for the Decatur foundry is to double the production capacity for the manganese steel castings.
Nortrak asked Gemco to perform an Engineering Review as well as a Concept Engineering for the capacity expansion, taking into account that any plans/design for the capacity expansion should be carried out in such a way that minimum interference occurs in the ongoing foundry operations. Projected maximum size of the castings will be of a casting weight of roughly 4,800 lbs. (2175 kg) and casting length of roughly 288 inches (7,3 m). After review of the existing foundry layout and evaluation of the current realistic maximum capacity for large manganese alloy casting, the design of a required foundry lay-out and determination of the required -additional- equipment, were established. Achieving optimum health-, safety- and environmental conditions are prerequisites in the project. The expansion project encompasses foundry logistics and process improvements as well as process changes.

A major process change is the introduction of a different sand system. Gemco will convert (turnkey delivery and installation) the existing Olivine sand system into a Silica Chromite No Bake sand system with Furane binder. The system includes a chromite separation plant, sand cooler and trim cooler/heaters. The new chromite sand system solves the issue of non- or decreased availability of USA olivine sand, plus the use of chromite sand improves the surface quality of the castings.

Nortrak decided to advance the Decatur expansion in 2 phases. Realization of Phase 1 of the project, and currently under way, consists of the conversion of the sand system and make-shift increase of the production by 35% while taking into account the near future objective of doubling the capacity.