

New ABB - Arc Furnace Reactor Cooling System

Nucor - Birmingham purchased a new 3 Phase Current Limiting Reactor for their Arc Furnace application. The existing cooling unit supplied with this new reactor was a 250kW OFWF system that the OEM supplier (ABB) typically furnishes with this model reactor. Trantech was asked to study this application for alternative cooling methods based on:

1. The ability to reduce extended downtime situations for maintaining the cooling system.
2. Lack of continuous or treated water supplies to the reactor.
3. Ability to maintain cooling capacities in situations of higher than rated usage of the reactor.

Based on the electrical rating of the transformer, the heat dissipation was calculated and verified while changing the cooling system model from a forced water cool application to a forced air cooled application. Trantech's thermal cooling model was used to ensure the design specification of the manufacturer and that the new coolers would match the requirements of the operating conditions at this Nucor Steel site.

A concept cooling system was presented to the customer and after approval we began working with construction engineering groups, the transformer OEM and Southern Power Systems on the integration of this new cooling system as part of the overall transformer installation project.

From concept to final installation Trantech was involved and assisted with many aspects of the project such as electrical wiring details, fluid mechanics, on-site installation and final system testing.

Trantech supplied all cooling system components, designs, ratings, work instructions and on-site support as part of our commitment to our customers that is world class and backed by 80 years of experience.

