

# Case Study: WIRELESS Nucor Steel



## ON THE JOB:

**Blytheville, AR** - Nucor Steel Arkansas melts scrap steel for other Nucor steel-producing operations. Nucor Steel Arkansas is a part of Nucor's Sheet Mill Group which produces flat-rolled steel for appliances, pipes and tubes, construction, automotive and other industries. Cardinal Scale's wireless iCan system was the perfect fit for their weighing of raw and molten steel in their 800,000 lb capacity by 50 lb increment rail cart scales. The rail cart scales must remain mobile and Cardinal's model 788 programmable indicator is located at varying distances of up to several hundred feet from the location of the moving scale, so a wireless system was the best option.

The rail cart scales each have eight load cells and operate in extremely hot conditions in excess of 500° F. Each cart holds a ladle which contains in excess of 250,000 lbs of molten steel. The carts are transported across a rail system which makes it difficult to use a hardwired system, and with the excess heat there couldn't be any exposed cables due to the molten steel which spills on and around the cart.

The iCan junction box, converter, antenna, and transceiver box are housed in the rail cart within a cooled enclosure protected by two steel doors. The iCan system transmits information via RF to the 788 indicator, which is housed in an electrical control room on the second floor of the factory.

The customer utilizes the unique cell output calibration procedure within the iCan system. Without this feature for allowing corner adjustments to be completed by inputting the load cells' outputs, corner adjustments would be very difficult and impossible to adjust with the required test weight.

Once the information is gathered at the 788 indicator, this information is then sent to the customer's control panel via the 778E analog output card. Cardinal's iCan system allows for troubleshooting and monitoring of the load cells without taking these carts out of service which is a time-consuming operation and requires large cranes as well as a partial shut down. Nucor Steel Arkansas also utilizes the iSite remote monitoring program over their in-plant network for monitoring the distributed weight on each load cell for troubleshooting and periodic maintenance.

## EQUIPMENT USED:

- 788S digital weight indicator with stainless steel NEMA 4X enclosure
- 778E analog out option card
- iCan8P iCan system for eight load cells
- iCanW iCan to 788S wireless modems
- iSite-NET-KIT



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APPLICATION COMPLIMENTS OF:

**Pioneer Scale  
Benton, Arkansas**