

# Case Study: Iron Ore Processor



# Quad Plus®



## Large DC Kiln Drive Retrofit

### Objective

Replace an old Siemens 6RA24 DC drive with a new Siemens drive into the customer's existing system to improve quality control and reliability with minimal downtime.

### Solutions

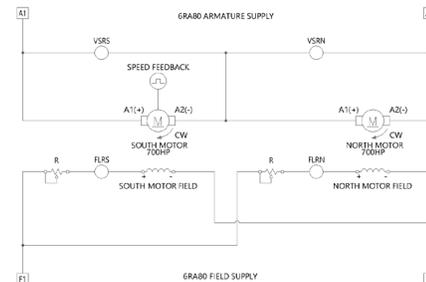
- Clean and test all thyristor assemblies; rebuild two assemblies that were deteriorated.
- Integrate new Siemens 6RA80 drive into existing system.
- Because the wiring was an exact match, the conversion could happen within 4 days.
- Integrate new drive into existing network to allow remote monitoring and control.

### Results/Benefits

- New DC drive successfully integrated into the customer's existing system.
- Increased reliability of the new drive improved both the quality control and production rates of the customer's line.
- The new drive can now be monitored and controlled remotely to provide faster and easier troubleshooting and maintenance without requiring physically interacting with the drive.

### Background

The customer is a processor of raw iron ore and produces iron pellets to supply the steel industry. Their existing Siemens 6RA24 DC drive powered two 700 hp motors that spin a massive brick-lined kiln. The drive provided many years of reliable service but was reaching the end of its useful life. Because this was now a legacy, unsupported control platform, and downtime or quality control issues are not an option for the customer, it was time to integrate a new DC kiln drive.



### Quad Plus Solution

The customer's setup was unique in that there were two motor armatures in series with their respective fields in parallel. Our team cleaned and tested each thyristor assembly to ensure they were working within factory operating specifications. Two of the thyristor assemblies were degraded and required rebuilding.

We then replaced the existing 6RA24 command module and field supply with a new Siemens 6RA80 command module. Because all the existing wiring from the new command module to the thyristor assemblies was an exact match, we were able to complete the conversion in four days. With the new drive integrated into the customer's system, they now enjoy a more constant speed from their kiln, which improved their quality control measures. The new drive is also more reliable, which improved the customer's production rates.

The Quad Plus team was also able to integrate the new drive into the customer's existing IP/Ethernet network, which allows monitoring and control of the drive from their existing PLC network. By monitoring data such as amps, volts, and torque, simple troubleshooting can occur from a laptop at the engineer's desk or control room rather than requiring an employee to physically look at the drive.