ADMS in the Real World.

Northwestern Paper Company: The paper company called Avtron for technical assistance on Aug 21, 2003. Customer had been fighting a (Press) section of the paper machine, reportedly for several days. Customer complained of paper breaks and sectional speed control problems. On several occasions, customer "hand tached" the process roll and found it was running at a different speed than the drive setpoint. Last minute airfare is typically $1,000 plus to this location. Customer has an ADMS contract in place.

Solution: Several minutes after the telephone discussion above occurred, an Avtron service engineer was on line viewing the overall machine process. The engineer was able to focus in on the particular problem drive. Viewing real time screens and interrogating drive internal operating parameters showed no indication of a drive problem. Motor speed was following drive reference speed fine. Contact with customer, indicated at the moment the hand tach speed was NOT matching speed displayed. At this time, observing nothing wrong with drive, the Avtron service engineer asked permission to remotely change the speed reference of the drive/section by 50FPM/min. Customer stated this would cause a major paper break problem, but was convinced to go ahead with this action. Customer said process roll speed did not change. Avtron service engineer then increased the drive speed reference, still no process roll speed change. What was the problem?

Avtron service engineer suggested the customer look at the motor to roll mechanical couplings. After a couple hours, customer called back and said that the motor coupling had broken and was slipping. The process roll was being towed by the paper machine web. The drive/motor, although no longer connected to the machine were fine. Customer shut down machine, fixed coupling, and problem was resolved. The use of remote diagnostics save the customer of what would have been a $3,000 to $5,000 service invoice, let alone the saving of "face" given the nature of the problem found.

Southern Mining Company: The mining company called Avtron's after hours for technical assistance one night in July, 2003. Customer was extremely worried because the drive was faulting out on over-speed and miners were at the bottom of the shaft for a shift change. The Avtron system is a 12 pulse ADD32-DC drive, controlling two, 250HP motors in series, operating a production hoist. After receipt of the initial trouble call into Avtron's After Hours Hotline, Avtron was logged onto the customers site using ADMS within about 30 minutes. Given the delicate nature of men down in the shaft, both the Avtron Service Manager and the Avtron Project Engineer who designed this application came to Avtron for the remote assist. Discussion with the customer stated that a drive fault occurred nearly instantly each time the RUN command was initiated.

Solution: Since the fault was occurring with in a second or two of the RUN application, very little time was available to troubleshoot the process. The problem was happening rather quickly! Being able to remotely reconfigure the drive allowed the troubleshooting to check various smaller portions of the drives operation. By reconfiguration of the control scheme, the troubleshooting got to the point where the engineers said the drive and motors were operating under control although at a much reduced

speed/load. However, returning the configuration to the standard for production caused the faults again.
Avtron asked the customer to mechanically run the hoist with the primary motor first and then just secondary. When the hoist used just the secondary motor, none of the bull gearing turned. After further on-site inspection, it was found that a coupling had broken only on the secondary motor.
This situation provided a troubleshooting challenge although the Avtron engineers were successful. Since it was a 2 motor (connected in series application) the second motor was over-speeding since it was uncoupled, although the hoist itself never appeared to have any high speed movements. With the high current requirements and 12 pulse application, the secondary motor was being caused to surge and over-speed without the connected load.
Additionally after this problem was resolved, customer contact was still able to go on a scheduled week off vacation the very next day.

Midwest Steel Company: After some routine motor maintenance, customer called into the Avtron after hours hotline. Customer said that the drive/motors were working OK but had recently tripped on overload. Downtime on the system is a reported $250K/hr. The customer said they needed the situation looked at immediately. Additionally they needed to have a “body” on-site for political reasons.

Solution: In less than 40 minutes an Avtron Service engineer was logged into the system. Using Real time screens and the ability to isolate drive parameters remotely, the engineer did view the heavy current draw taking place. The system consisted on a Master and Load drive along with 2 separate but mechanically coupled motors. Observation of the drive data showed that the master drive was pulling nearly 100% load, where as base line data showed the requirement to be much, much lower with a nice split between Master and Load drive. The data recorded appeared to show that the Load drive was opposing torque rather than assisting with torque. A discussion with customer revealed that the Load motor had been changed out as part of a routine PM. Based on this information and the Real time screens a quick test was done between sets. The test showed the Load turned the wrong direction. Customer was advised that the motor field had probably been connected wrong when the routine PM was done. Customer reversed the field and all motor drive parameters were back in line with known base lines.
The motor change was made and problem was solved in less than 2 hours from time of initial call. Given this quick response the customer avoided any downtime loss/costs due to their error made. Oh yes, when the Avtrton service engineer arrived at the site, (about 2 hours after dispatch), he had nothing left to do but to monitor operations, and receive compliments from the customer for a job well done.

Actual customer name and contact are available for the ADMS usages as described, upon request.