The OMNI Transmitter

JANUARY 2017 NEWSLETTER

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A Peek Inside -

CHALLENGING 15-DAY RETROFIT PROJECT

Omni just recently completed a project in which a large isolator was incorporated into an existing process area at a pharmaceutical facility. The renovation project required the addition of a new process suite and two new pressurized airlocks. Scheduling stipulated that work must take place during the holiday week between Christmas and New Year's with commissioning beginning in early January. Omni was selected for the project due to the client's desire to have a single entity perform all electrical-related work, rather than multiple contractors.

Planning for this project was many months in the making and the isolator was ordered a year in advance. The project's tight scheduling required the work to be performed over two or three shifts per day, depending on the day's activities. Omni was tasked with handling the relocation of an existing DeltaV I/O subsystem, installation of new BAS controls, lighting, and electrical utility panels for power, and relocation of fire and security alarms. Various enabling work was first required, including some intricate disassembly, rerouting of existing cable tray and raising the height of conduits.

Upon completion of installation, Omni performed all loop checks, megger testing, fiber optic testing, and point-to-point sequence and functionality testing. They also calibrated vendor equipment instrumentation as well as various other instruments in preparation for the commissioning process. As planned, commissioning was successfully completed during the first week of January, at which time Omni provided assistance to the validation team.

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OMNI TECH TALK: 8 Steps to a Successful Process Control Project

When controls don't function properly, significant problems can arise at the most inopportune moments and send a project to a screeching halt. Many process controls projects are beset by problems that would have been foreseen had the work been performed by more attentive and qualified contractors. Choosing contractors wisely and following some important guidelines can spell the difference between a smooth, successful project and one that is fraught with problems.

Prequalify instrument contractors and system integrators. Find out what projects they have completed recently, and make the call to the clients to find out how they did. Ask about their strengths and weakness, and how they performed throughout the project, start to finish.

Provide bidders with a list of project details that are of critical importance to you and compare how much each bidder dedicates toward those items. This can indicate the seriousness of each contractor and how mindful they are to your primary project concerns, particularly instrument check, certifying networks, loop check, calibrations, startup assistance, etc.

Involve the bidders in document review and value engineering. Ask questions, and thoroughly evaluate the value of their input. Again, you can learn a lot about who has put serious thought into your project, and who is merely putting in a price.

Once you have a quality contractor on board, perform a full review of drawings and specs to avoid potential problems and leverage opportunity wherever possible. Experience should be valued, captured and implemented. Unless you're in the business of fixing problems, you won't know where they exist.

Make sure you purchase, receive, thoroughly inspect, bench calibrate, document and properly turn over all instruments in a timely manner. You don't want to find out you have the wrong instrument at startup, and a replacement is 6-8 weeks away.

Get your contractor involved with planning locations of controls, indicating transmitters, control panels, and everything users and maintenance workers will operate and maintain. It's important to make sure workers are satisfied with ease of use and access in the end.

Loop check and calibration should be a well-coordinated team effort, with the instrument contractor and system integrator working together toward a mutual goal. When problems arise, one team can concentrate on fixing the problems while the other team forges ahead.

Finally, have your instrument contractor get involved with the commissioning process. Their hands-on experience and knowledge can speed up commissioning and resolve technical issues on a variety of aspects of the project. Consider performing the first field calibration, as well. This can bring you to and through validation smoothly and successfully, rather than doing a last-minute scramble in the end.

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FROM THE PANEL SHOP: VFDs vs Soft Starters

Soft starters and variable frequency drives (VFD) can both be used to reduce the inrush current and torque that can occur when motors are accelerated to full speed, and both protect motors from damage at startup. There is a key difference, however, in that VFDs control motor speed throughout the run cycle and soft starters are only used during startup and stop. Choosing between the two depends on the application, performance requirements, and overall costs.

Soft starters, also known as reduced voltage soft starters (RVSS), work by gradually ramping up voltage to the motor. They are often used in applications such as cooling towers, large circulation pumps, and fans that only require speed and torque control at startup. Soft starters are smaller and less expensive than VFDs.

VFDs, unlike soft starters, offer constant speed control during the entire operating cycle of a motor. They range from basic to full-bypass, which allows uninterrupted equipment operation in the event of VFD failure. VFDs offer superior energy savings, integration, control, and diagnostics. Though they can initially cost two or three times more than a soft starter, VFDs are often a better overall value for applications that require the energy and functionality advantages they offer. Omni can help clients determine whether a VFD should be used for their particular application, or if a soft starter will suffice.

For many years in New York City, stray voltage in objects like lamp posts, manholes, sidewalk grates, and junction boxes has posed a potentially lethal hazard to pedestrians and their pets. But it wasn't until a young woman and her dog were electrocuted while walking in the East Village in 2004 that Con Edison finally took action to prevent more tragedies.

Stray Voltage Detection

Con Ed now uses a fleet of specialized vehicles equipped with sophisticated stray voltage "sniffing" devices to scan city streets twelve times a year, covering more than 66,000 miles. A driver and crew member monitor a graphic display of the electrical field superimposed over video imagery of the surroundings while moving along streets at 15-20 mph. The team is alerted to stray voltage by a large spike and an audio signal that rises in pitch in correlation with strength of the voltage. A manual tester is then used to pinpoint the source of the stray voltage and the appropriate repairs are made. The program has been highly successful, with thousands of energized objects detected and repaired each year and the number of people shocked plummeting from 285 in 2004 to 71 in 2013 - a 75 percent drop.

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