The OMNI Transmitter

FEBRUARY 2016 NEWSLETTER

- INSTRUMENTATION
- ELECTRICAL SERVICES
- CONTROLS

INSTRUMENTATION ENGINEERS AND CONTRACTORS

Inside This Issue:

Commissioning Planning by Craig Drabyk

The commissioning process is central to ensuring that building systems operate effectively, efficiently, and safely as possible. Because every building is unique, careful planning must go in to the specific startup, commissioning, and qualification requirements for a facility, and how these processes should be organized, performed, tracked, and reported.

One of the key components of a successful project is the commissioning checklist, the quality and depth of which can make or break the commissioning process. Avoid “checkbox commissioning”, as generic checklists don’t capture the overall picture and problems are frequently missed. Issues that are not uncovered and corrected during commissioning are likely to surface in qualification, a time when you can least afford problems and delays.

During the planning phase it is important to involve the people most knowledgeable about the systems and equipment, such as startup techs, instrument techs, BAS techs and vendors, who are familiar with unique problems, quirks and anomalies that can sometimes occur. The observations and input of these individuals is invaluable and should be incorporated into the commissioning process whenever possible. For example, who would know better how to prevent or correct a particular sequence-of-operation issue than the technician who is frequently called in to fix it?

Omni has had the privilege to work with numerous quality commissioning firms and building owners, and we have played an integral role in many successful commissioning efforts. For more information on commissioning or retro-commissioning, please contact Omni at 908-412-7130.

OMNI INSTRUMENTATION SERVICES, INC.

Omni
112A Sylvania Place
South Plainfield, NJ 07080
PH - 908.412.7130
FX - 908.412.7131
www.omniinst.com

The OMNI Transmitter

FEBRUARY 2016 NEWSLETTER

- INSTRUMENTATION
- ELECTRICAL SERVICES
- CONTROLS

INSTRUMENTATION ENGINEERS AND CONTRACTORS

OMNI TECH TALK: Inrush Current

Inrush current is the maximum instantaneous input current drawn by an electrical device when first turned on. Managing inrush current during building and process equipment startup is extremely important, particularly when power is restored after an outage.

When starting a motor, inrush current is necessary to overcome the inertia of a dead stop. Depending on the motor sizes, quantities, and load, startup of too many air handlers, pumps, fans, compressors, and other pieces of equipment at once can cause breakers to trip, fuses to blow, or generators to shut down. Many facilities are unaware of the problem until there is a loss of power and equipment is restarted on generator or restored utility power.

Inrush current can be managed by starting equipment according to a timed sequence at specific ramp speeds. This can usually be programmed through the building management system or process control system. Equipment must be started up at intervals and in the right order. For example, process chilled water should be flowing before chillers are started. Timing and sequence should be tested to ensure that a facility won't fail to run when needed and to uncover important equipment that was mistakenly omitted from the sequence. Small air compressors or air dryers, sanitary or condensate lift stations, etc. are often forgotten, which can lead to bigger problems.

TECH TIDBIT: Phase Imbalance

Electrical phase imbalance is a condition in a three-phase system where the amperage draw is uneven between phases A, B and C. This condition exists in most buildings, but if the imbalance is severe (more than 10% between phases), it can cause unexplained nuisance tripping on large breakers. Facility personnel should check for phase imbalance. If it exists, have a trained professional carefully identify the problem and redistribute the load to make sure all phases are evenly distributed.

The OMNI Safety Corner

Workplace safety is vitally important at Omni, and protecting the health, safety, and welfare of our clients and employees is our #1 priority.

Omni has participated in a number of OSHA VPP projects and is ISNetworld approved.

Omni : 112A Sylvania Place South Plainfield, NJ 07080 : PH - 908.412.7130 : FX - 908.412.7131 : www.omniinst.com

The OMNI Transmitter

FEBRUARY 2016 NEWSLETTER

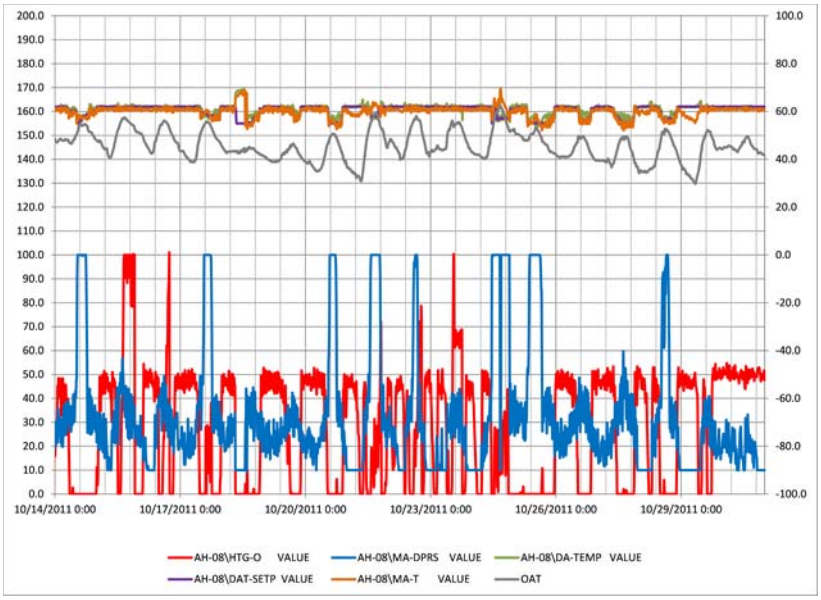
- INSTRUMENTATION
- ELECTRICAL SERVICES
- CONTROLS

INSTRUMENTATION ENGINEERS AND CONTRACTORS

FROM THE PANEL SHOP: Trend Logging By Mike Kornas

Trend logging is a method of diagnosis in which building or system parameters are recorded at regular intervals over a specified period of time, usually several days to a week, to help identify the source of efficiency problems. It is commonly performed on new systems during the commissioning phase when issues occur. Trend logging is inexpensive, effective, and surprisingly succinct in the story it tells.

Trend logging can be highly useful when issues arise and a clear culprit can't be identified using other measures. Recording and charting system data can uncover patterns related to a variety of issues with temperature or humidity, leaks, abnormally high energy costs, improper airflow, devices tripping, equipment shutting down, etc., and problems with process cooling, heating, pressurization, ramp time, etc., can be pinpointed on the process side. The source of seemingly-isolated blips and anomalies can often be traced with trend logging, as well.



Trend logging is also used to identify potential or existing efficiency issues, even when systems appear to be operating properly. System components meant to save energy, such as economizer cycles, occupied/ unoccupied settings, lab airflow and temperature settings, etc., are frequently found to be functioning improperly. Oftentimes, a simple adjustment can significantly and immediately reduce energy consumption, saving energy dollars that were previously being wasted.

LOCKOUT / TAGOUT

Lockout / tagout is a critical OSHA-enforced safety procedure that ensures that equipment has been disabled and rendered unable to energize or restart unexpectedly during service and maintenance. According to OSHA, lockout/tagout practices prevent an estimated 120 fatalities and 60,000 injuries each year. Proper lockout/tagout requires that all sources of potentially hazardous energy - electrical, mechanical, hydraulic, pneumatic, etc. - must be identified, isolated, and rendered inoperative, then locked and tagged with the ID of the worker who placed the lock, before work can begin. This ensures that the machine cannot be unlocked and untagged by anyone other than the identified key holder. A central component to Omni's lockout/tagout procedures on every project we perform is close coordination with onsite facility personnel to define the specific sequence of what equipment gets locked and unlocked, as well as when the equipment will go back online.

Omni : 112A Sylvania Place South Plainfield, NJ 07080 : PH - 908.412.7130 : FX - 908.412.7131 : www.omniinst.com