The OMNI Transmitter

APRIL 2015 NEWSLETTER

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Site Specific Safety Plan By Craig Drabyk

A site-specific safety plan (SSSP) is a document that addresses specific safety concerns and challenges on a particular project. It serves as a communication tool to ensure safe working conditions and to protect the jobsite and environment.

The primary function of an SSSP is to make workers aware of existing and potential hazards and to outline the necessary work and safety procedures. Since every project is unique, hazards such as confined spaces, use of cranes, and the presence of hazardous substances and materials will vary from site to site. New or unexpected hazards may arise as work progresses, so the SSSP must be regularly amended and changed as working conditions evolve.

Project hazards are identified through an assessment of the scope of work and the tools, equipment, and materials needed to complete the project. The SSSP should outline policies, procedures and control measures to eliminate or mitigate the hazards, keeping all local, state and federal regulations in the forefront. A typical SSSP should include such things as fencing procedures, fall protection, fire and explosion hazards, lockout/tagout, and special PPE, such as respirators and arc-rated gear, for specific project tasks. SSSPs can also include job hazard analyses (JHA), which drill down to focus on specific requirements for individual project tasks.

The success of a site-specific safety plan hinges on consistent worker training and strict observation of the outlined procedures. Toolbox talks should take place regularly, and weekly safety meetings should be held with other involved trades. Workers should be made aware of emergency medical procedures, including phone numbers, medical transportation and nearby facilities.

OMNI INSTRUMENTATION SERVICES, INC.

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

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OMNI TECH TALK: Electric Heat Tracing

Electric heat tracing is a system that employs a heating cable that runs between piping or a vessel and insulation to maintain or raise the temperature of the pipes. Heat tracing is typically used on domestic water, chilled water, steam condensate, and on certain process systems.

Reliable electric heat tracing was developed in the 1960s, and most systems worked using the same basic principal: when the ambient temperature dropped below a certain point, the heat tracing turned on. Some systems included auxiliary contacts to alarm if the heat tracing failed to operate when temperatures fell, while others used a current transformer to verify amperage.

Modern electric heat tracing systems are far more reliable due to technological advances. **Microprocessor-based controls monitor surface temperatures to operate heat tracing only as needed, and can hold process pipe temperatures to extremely close tolerances.** Cable integrity is monitored by measuring surface heating performance and resistance, and alarming when an irregularity or failure occurs. Increased precision and reliability translate to lower energy use, increased longevity, and reduced maintenance costs.

Because electric heat tracing systems have become more complex and are no longer the simple on/off devices of yesteryear, greater knowhow is required for system installation. This lesson was learned at a facility this past winter when pipes burst during a cold spell, causing tens of thousands of dollars in damages. Omni technicians called in to assess the heat tracing system found that the installing contractor ran the wrong voltage to the controller, and the system was never tested and commissioned. Modern technology is changing in leaps and bounds, so it is increasingly important to make sure a contractor is qualified to work on specific systems and equipment.

TECH TIDBIT: LED An Effective Alternative

Americans are looking toward LEDs as the best alternative to incandescent and CFL bulbs. **LEDs use 75-85% less energy than traditional bulbs** and have an expected life span of 20,000 or more hours. Compared to CFLs, LEDs last at least twice as long, emit far less heat, are more durable, contain no mercury, turn on instantly, and are not affected by on/off cycling. Best of all, LEDs prices have become far more affordable.

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.

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FROM THE PANEL SHOP: Control Panel Cooling By Mike Kornas

Ventilation and cooling are important considerations when designing a control panel cabinet or cabinet enclosure. Because a control panel cabinet is enclosed and contains equipment that generates heat - VFDs, starters, contactors, relays, PLCs, etc. - temperatures can rise to critical levels, and a hostile external environment can further contribute to excessive heat. Overheating conditions can also develop as more equipment is added over time and panels become overcrowded. The resulting high temperatures can cause tripped overloads, damaged circuit boards, erroneous readings, component failure (PLCs and VFDs begin to fail at about 105F), and shortened life span.

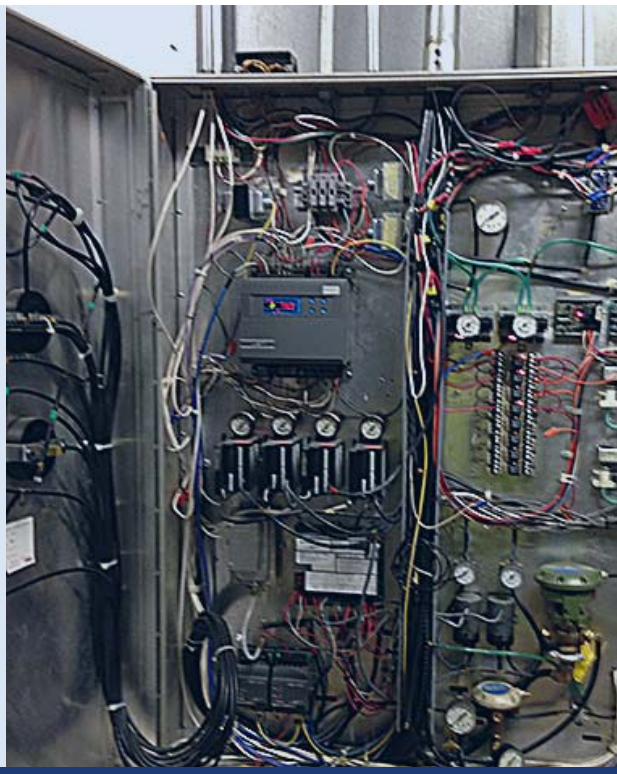
Many manufacturers have built-in cooling systems for equipment that generates heat (VFDs, etc.) but custom cabinets may need to have cooling provided, and there are several types available. DX and Venturi systems are sometimes used, but vortex cooling systems are most common. This low-cost method both purges and cools the enclosures using a vortex tube that creates cold air from ordinary compressed air.

Different grades of vortex coolers are available depending on the conditions and demands of the environment.

Control Panel Renovations

Many older institutions have old pneumatic systems with piecemeal electrical and digital controls mixed in and scattered about control panels and mechanical rooms, and decades of slipshod repairs make it difficult to run the facility efficiently. Hanging open splices, hissing air lines, compressors running continuously, and incompatible equipment from many different vendors banging on and off and running poorly are commonly seen. This includes VFDs, motor control centers, and various other systems. The end result is a leaking pneumatic system, helter skelter E/Ps and I/Ps, nothing labeled, and various control systems that only the vendor can work on. Everything is out of calibration, jumped-out, and bypassed to keep things running, and the energy loss alone is substantial.

The solution? Renovating and standardizing the control system and calibrating critical points. Between energy savings and eliminating the labor required to patch the controls mess, the renovation would pay for itself in no time.



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