The OMNI Transmitter

MAY 2018 NEWSLETTER

- INSTRUMENTATION
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INSTRUMENTATION ENGINEERS AND CONTRACTORS

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OMNI: UNDIVIDED RESPONSIBILITY

Definition: omni-
all; of all things

Our company founders chose the name “Omni” to reflect the full range of services they planned to offer, which we have accomplished to great success. Our wide range of expertise allows clients to rely on Omni as a sole contractor, resulting in improved project coordination, scheduling, communication, and overall job costs, not to mention the elimination of finger-pointing between subcontractors when problems arise.

We recently demonstrated our abilities across multiple disciplines on a large, recently-completed pharmaceutical plant expansion project. The scope of work included:

* Instrument mounting
* Instrument sensing tubing
* Pneumatic tubing to air actuated valves
* Instrument and valve conduit, wiring and terminations
* Control panel fabrication, wiring and installation
* Reassembly of super-skid wiring and tubing
* Fiber optic supports, wiring and terminations
* Data closet equipment procurement and installation
* Process control network Ethernet conduit, cabling and terminations
* IT network Ethernet conduit, cabling and terminations for voice, data, paging and wireless access points
* Loop checks, calibrations, and commissioning
* Procurement of all instruments and valves

Omni is led by an expert team of electrical and instrumentation engineers to guarantee superior results on your next project. For more information, please call us at 908-412-7130.

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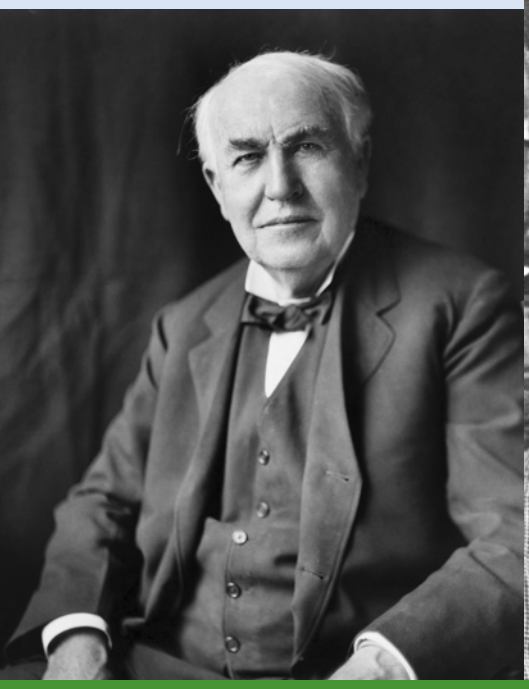
OMNI TECH TALK:
Edison, Tesla, Westinghouse and their War of the Currents

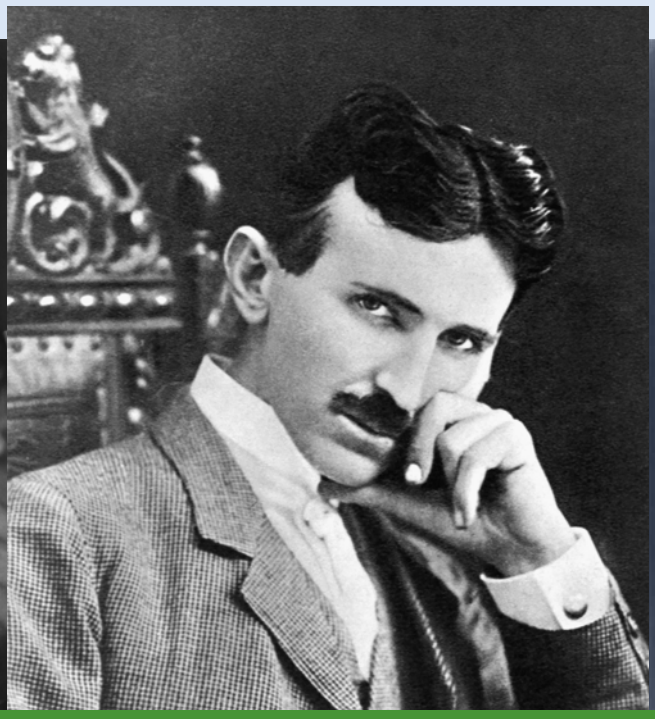
Back in the late 19th century, Thomas Edison and George Westinghouse engaged in a nasty battle over which of two types of power transmission systems would prevail as the U.S. standard. The Edison Electric Light Company championed direct current (DC), while Westinghouse Electric Company promoted alternating current (AC).

After Edison patented the first practical incandescent light bulb in 1879, he moved to develop a system for distributing direct current to homes and businesses.There was a significant drawback, however: DC power was difficult to transmit over long distances. To help solve the problem, Edison hired Nikola Tesla, a young Serbian mathematician and engineer. Tesla made improvements to Edison's DC generators while trying to convince the inventor of the superiority of his AC system, which could be efficiently transmitted over long distances using lower current, but Edison dismissed Teslas ideas as folly. In 1885, an embittered Tesla parted ways with Edison in 1885, and industrialist George Westinghouse purchased several of his patents soon after.

Westinghouse quickly moved to establish AC as the preferred system, severely cutting into Edison's business. In response, Edison set out on a propaganda campaign to discredit AC and convince the public that it was unstable and dangerous. He staged grisly public electrocutions of dogs, cats, horses, and even a circus elephant by alternating current, and loudly promoted AC as the most lethal method of capital punishment via electric chair.

Ultimately, however, despite Edison's strenuous efforts, the superiority of alternating current over direct current was too much to overcome. Westinghouse was awarded a highly-publicized contract to supply AC power to the 1893 Chicago World's Fair, sealing AC as the industry standard the marking end of the War of the Currents.





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FROM THE PANEL SHOP: Choose Wisely or Spend Plenty

When it comes to control panels, there are so many choices for so many environments. Explosion-proof. Washdown. Clean environments. Harsh chemical environments. General purpose, or non-hazardous. The list goes on and on. But before you make any choices, you have to ask and answer some important questions that can potentially save tens of thousands of dollars in project costs. It is well worth the time to question and review each panel's purpose, location and maintenance needs before moving forward.

This was illustrated at a pharmaceutical plant construction project. At the owner's request, designers had placed control panels in clean spaces, where they would require expensive stainless steel double-door Hoffman enclosures. Omni reviewed the design drawings and recommended relocating panels to general purpose areas where standard NEMA 12 enclosures could be used and they would be easily accessible for maintenance and emergency service. VFDs were relocated from a clean area to nearby interstitial spaces within 50 feet of the motors they served, and panels that originally called for XP enclosures were moved to a nearby mechanical space. The owners were more than pleased with Omni's solutions and a substantial amount of money was saved.

Hand Protection

Hand and arm injuries, most commonly in the form of cuts, abrasions, and puncture wounds resulting from handling rough or sharp materials, account for one third of all construction-related injuries. With proper use of job-appropriate PPE, most of these injuries can be prevented, and there are many choices available that are far more comfortable and provide better dexterity and protection than the lightweight cotton or bulky leather gloves of the past.

Because different trades require different levels of protection from cuts, punctures and abrasions, gloves should be chosen accordingly based on specific needs. The average electrical worker, who handles tools and materials with sharp metal points and edges, must have comfortable, close-fitting gloves with good grip that allow maximum dexterity and flexibility. Beyond the obvious advantages of cut resistance, a pair of comfortable, flexible protective gloves is less likely to be removed when performing intricate tasks.

In 2016, ANSI revised its American National Standard for Hand Protection Classification, increasing from five cut resistance levels to nine. The lowest level, A1, is for applications with light cut hazards, while A9 provides maximum cut protection. Gloves should be selected based on the tasks being performed.