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NEMA

Using Unlisted Products Poses Safety Risks

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U.S. manufacturers have a long history of working with nationally recognized testing laboratories (NRTLs) to ensure that their products meet performance and safety standards. This partnership of industry, standards organizations, testing laboratories, and government results in products that deliver excellent performance combined with some of the safest working environments in the world.

One example of this partnership is exemplified in the producers of arc-welding and plasma-cutting products, which have long had a strong focus on safety, performance, and reliability. In some applications, these products deliver their performance by producing plasma arcs with temperatures above 20,000°C (36,032°F) and voltages exceeding 20,000 volts, making the need to take a safety-first view of product design abundantly clear. Similar to other NEMA product sections, the Arc Welding Section has developed strong standards to ensure a common level of safety of arc-welding and plasma-cutting products.

In the U.S., arc-welding and plasma-cutting power sources listed by a NRTL to ANSI, CSA, and UL standards are subjected to numerous tests and requirements such as insulation resistance, enclosure strength, drop testing, dielectric strength, fault testing, and specific operator instructions and safety markings. One reason the welding industry has a good product safety record is that the ANSI/NEMA/IEC technical committees have continuously invested in standards development for more 25 years. These committees show a great track record of collaboration between business, regulatory bodies, and government agencies with a common goal of safety for the buying public.

As most U.S. manufacturers also have strong global export businesses, designs must meet or exceed international regulations. In many cases these regulations are harmonized, but often there are unique regional requirements for specific design considerations. It shouldn't be a surprise that verifying that arc-welding and plasma-cutting products meet these regulations is usually required prior to offering products for sale in these regions. However, what might be a surprise is that the U.S. does not have a similar requirement—arc-welding and plasma-cutting products can be offered for sale on the open market even if they have not been determined to meet a minimum level of safety and performance.

Due to this lack of regulation, products that have not been evaluated to ANSI, CSA, or UL safety requirements are currently available on the U.S. market. NEMA member companies have evaluated some of these non-listed products and found significant deficiencies that could result in safety concerns and hazards for the end-user. These same products that have gaps against U.S. code requirements are coming from various regions of the world, many of which have more stringent standards if the same products were sold locally. Therefore, the use of these products can result in injury or property damage.

Arc-welding and plasma-cutting products are not alone in this situation. Other products that can be found in the U.S. or Canada without a listing include A/V amplifiers and high-end home audio amplifiers. Although not as inherently dangerous as arc-welding's high voltages and temperatures, electrical/electronic products could pose safety risks if there is no minimum assurance of safety and performance.

The standard that applies to audio products (IEC/UL/CSA 60065 *Audio, Video and Similar Electronic Apparatus*) specifies "electronic apparatus designed to be fed from a main power supply, a supply apparatus, battery, or remote power feed." Examples of tests conducted on such products include durability and markings, temperature, dielectric withstand, insulation resistance, fault conditions,creepage, and clearance. Manufacturers selling—or attempting to sell—unlisted products in the U.S. and Canada potentially put people and property in harm's way by not showing compliance to these baseline safety tests.

With global supply chains reaching unknown vendors and component manufacturers, accountability is often difficult to maintain. Third-party testing and certification to prescribed standards is the best way to ensure safe products. The theme of safety is one that NEMA product sections take very seriously. These efforts continue the long history of our member companies identifying how we can continuously improve our approach to ensure the safety of the U.S. marketplace.

Mr. Brandt focuses on delivering on Hypertherm's product and technology roadmap while fostering creativity and innovation across engineering teams. Mr. Silva works with manufacturers, AHJs, industry associations and media to promote product safety certification and quality.