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Code Changes Make Separation of Circuits Difficult to Interpret

In spite of the many professionals tasked with the safety of backup power systems, there are still many occasions when contractors and installers find themselves at odds with the Authority Having Jurisdiction (AHJ) regarding the interpretation of codes and standards. One such situation concerns the separation of circuits in a backup power system. Most agree that the separation of circuits is a good thing because it minimizes the damage caused by a failure in

a backup power system so that the system can still provide some backup power to some systems. Avoiding issues with the AHJ regarding circuit separation requires planning, a strong working knowledge of the applicable codes and standards, and an even stronger working relationship with the local AHJ.

Among the most important standards governing the installation of backup power

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systems is the National Electrical Code® (NEC). With over 800 articles in its nearly 1500 pages covering all things related to the installation of electrical equipment, the NEC is usually codified in some way as part of municipal codes across the country to standardize the enforcement of safe electrical practices. On equal footing are various Underwriters Laboratories (UL) standards. UL 2200, the Standard for Stationary Engine Generator Assemblies, applies to backup power generators and their components.

In spite of both of these standards and their widespread use, the application of both to backup power systems is continuously open to interpretation by AHJs. One reason for this is that not all jurisdictions follow the same version of the NEC. Some might adhere to NEC 2008, for instance, while others have already adopted NEC 2011. A bigger challenge, though, is the fact that NEC applies specifically to wiring, while UL addresses specific components. As a result, AHJs, manufacturers, and installers alike often find themselves questioning where one ends and the other begins.

For example, NEC 2008 specifies that the power conductors between the on-site backup generator and the fire pump disconnect be separated from all others and serve the fire pump system exclusively. It also states that wiring from a circuit breaker to an emergency load be kept entirely independent of all other wiring and equipment. If one honors these regulations, then one cannot help but keep other loads—like optional backup systems—separate, as well.

What of generator components? Because one can keep the wiring addressed by NEC separate while not actually keeping the components from which that wiring originates separate, many



generator manufacturers argue that the NEC standards end at the generator lugs, and don't apply to internal generator components like overcurrent devices within a connection panel.

By comparison, AHJs might argue that without extending to the overcurrent devices the separation of circuits does not meet its objective of avoiding catastrophic system failure.

To address these issues, some generator manufacturers simply separate components, such as circuit breakers, just as they would the wiring that comes from them. Generac, for example, recently updated its customer connection interface (CCI) on many of its industrial power products such that circuit breakers serving discrete loads mentioned earlier are physically separated into different enclosure compartments, thereby fully complying with NEC standards no matter how they are interpreted. In addition to creating separation of circuits, Generac also took the opportunity to separate low voltage from high voltage loads, making the units more user-friendly to service technicians, pursuant to NFPA 70E guidance regarding arc flash.

The improved CCI is available on all industrial power systems, including large MPS units. As a result, users can feel confident that the application of Generac Industrial Power systems will not lead to challenges by AHJs regarding the separation of circuits. For more information about the CCI improvements, click here www.generac.com/Industrial/CCI.

Generac Exhibiting at POWER-GEN International 2011

POWER-GEN International is the industry leader in providing comprehensive coverage of trends, technologies and issues facing the generation sector. More than 1200 companies exhibit each year, and Generac will be among them at this year's show in Las Vegas, Nevada from December 13 – 15.

Stop by booth 4920 and see our 50Hz and 60Hz product selection.

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EGSA Testing Now a Requirement to Become a Generac Certified Industrial Power Technician

As part of its commitment to providing the on-site power generation industry with the most knowledgeable service technicians, Generac Power Systems recently made it mandatory that all candidates for factory certification on Generac Industrial Power products take the Electrical Generating Systems Association (EGSA) Certified Technician exam—a first in the industry.

Factory certification is required to become—and to remain—a Generac Industrial Power dealer. This involves the successful completion of several multi-day training sessions at Generac, each with a combination of classroom and lab sessions, as well as evening reading and homework assignments. Dealers must renew their certification every two years.

“We pride ourselves on having perhaps the most rigorous service training program in the industry,” said Tom Wein, senior service training manager for Generac, and the founder of the current service training program. “By partnering with EGSA, our dealer techs are that much more prepared to effectively service Generac products in the field.”

EGSA created the Electrical Generator Systems Technician Certification Program five years ago to help advance the generator service profession by identifying consistent standards for proficiency. Graduates not only have a broad knowledge of electricity, mechanical, and electrical components—and the interaction among them—but are proficient in the installation, service, maintenance, and repair of on-site power generation systems.

Generac Sponsors Webcast on Codes, Standards, and Regulations for Emergency Systems

The quantity of regulatory bodies, provisions that pertain to standby and emergency power systems, and the pace of change to those provisions are such that engineers have to continuously keep track of their developments. As such, on November 17th, Generac sponsored a webcast hosted by Consulting-Specifying Engineer magazine that addressed recent updates and changes to the codes, standards, and regulations that apply to mission-critical standby and emergency power systems. The focus of the webcast was the following:

- Changes to 2011 National Electric Code
- The 2012 International Building Code
- The EPA off-road diesel emissions regulations that went into effect in 2011

Topics included diesel emissions, ground fault protection alarms, feeders for high-rise buildings, and seismic considerations. Nearly 500 people participated in the webcast. Of them, 60% actively specify backup power systems above 200kW. This event was free, and all attendees were eligible to receive 0.10 AIA CEUs or 1.0 PDH. To watch the webcast, just visit <http://goo.gl/yy3u5>.

