POWERLINE

The Voice of the On-Site Power Generating Industry

Summer 24

Exploring the Potential of Community Microgrids

Highlighting a New Approach to Technician Retention

Electrical Generating Systems Association
PO Box 73206
Washington, DC 20056

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EGSA George Rowley Schools of On-Site Power Generation

EGSA's Two-Tiered Power Schools

EGSA's Power Schools cover the theory and practice of all the components within a generator system. All course modules are led by volunteer industry experts in a non-brand specific, generic format. School registration includes a copy of the 5th edition of **On-Site Power Generation: A Comprehensive Guide to On-Site Power**, a 700-page reference book that covers all aspects of On-Site Power Generation.

Basic School

Perfect for staff new to the power generation industry or someone who needs an introduction to basic concepts and technologies, this school is appropriate for students seeking a foundation in generator technology. Whether you are in sales, marketing, management, application engineers, engine technicians, or administrative personnel, you will find great value in this course! The Basic School is a general, yet technical, overview of On-Site Power.

COURSE MODULES INCLUDE:

- Introduction to EGSA
- Basic Electricity
- Prime Movers
- Introduction to Generators/Alternators
- Starting Systems
- Introduction to Automatic Voltage Regulators
- Introduction to Governors/ Speed & Load Controls
- Introduction to Transfer Switches
- Load Bank Fundamentals
- Generator Set Instrumentation
- Codes and Standards
- Generator Set Systems: Putting the Pieces Together
- Understanding Bid and Specification Documents

Advanced School

Our Advanced School is designed for those who have a good understanding of the basic mechanical and electrical systems found in an on-site generator site. A minimum of three years of experience in the industry is recommended. It will be particularly useful for those employed in engineering, project management, service positions, and business owners.

COURSE MODULES INCLUDE:

- Advanced Generators/ Alternators
- Generator Set and Critical Power System Controls
- Generator and System Protection
- Advanced Automatic Voltage Regulators (AVRs)
- Advanced Governors/ Speed and Load Controls
- Advanced Transfer Switches
- Multiple Generator Paralleling Switchgear
- Engine Emissions
- Noise Control
- Communications
- Advanced Generator Systems: Sizing to Service

Visit our website at ***EGSA.org*** for additional details on the EGSA George Rowley School of On-Site Power Generation.

2024 SCHEDULE

BASIC SCHOOL

July 15-17 ..... Virtual
September 30-October 2 ..... San Antonio, TX
October 28-30 ..... Virtual
December 9-11 ..... Virtual

ADVANCED SCHOOL

August 26-29 ..... Virtual
November 4-7 ..... Virtual

POWERLINE

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JULY

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(Virtual School)

AUGUST

Aug 12-16
US Army On-Demand Load Bank Certification
Fort Belvoir, VA

Aug 26-29
EGSA Advanced School of On-Site Power
(Virtual School)

SEPTEMBER

Sep 15-17
EGSA Fall Conference
Bellevue, WA

Sep 30 - Oct 2
EGSA Basic School of On-Site Power
San Antonio, TX

OCTOBER

Oct 28-30
EGSA Basic School of On-Site Power
(Virtual School)

NOVEMBER

Nov 4-7
EGSA Advanced School of On-Site Power
(Virtual School)

Nov 19-21
Load Bank Certification
Long Beach, CA

DECEMBER

Dec 9-11
EGSA Basic School of On-Site Power
(Virtual School)

Electrical Generating Systems Association
PO Box 73206
Washington, DC 20056
561-750-5575
e-mail@egsa.org • EGSA.org

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Powerline is published four times per year on a quarterly basis. Articles and information submitted for publication should be forwarded to the attention of the Editor at the address above 30 days prior to publication. Technical articles and articles of general interest to the electrical generation industry are actively sought and encouraged. Powerline reserves the right to limit information appearing in its pages to that which, in its sole discretion, will reflect positively on EGSA and the industry which it serves. Throughout every issue of Powerline, trademark names are used. Rather than place a trademark symbol at every single such occurrence, we aver here that we are using the names in an editorial fashion only. EGSA has no intention of infringing on these trademarks.

Message from EGSA's CEO

A lot has happened since last I wrote to you. We convened numerous online and in-person schools, certified dozens of technicians, appointed a number of EGSA members on various outside codes and standards technical committees, and held EGSA's most successful conference ever from April 7 – 9, 2024, in Miami, FL. On our post-conference survey, 92% of respondents said our exhibit hall met or exceeded expectations, 96% of our respondents said our new Engineering Symposium educational sessions met or exceeded expectations, 98% of our respondents said our onsite networking events met or exceeded expectations, 100% of respondents said our offsite networking activities met or exceeded expectations, and 97% of respondents said the conference overall met or exceeded expectations.

On this last point, what is most notable is that the 'exceeds expectations' number jumped 30% from the previous conference. These numbers reflect all the hard work that our staff and member volunteers put in between conferences to continually innovate. From those people that attended, we know that they very much appreciated the quality of education on offer, that spouses can now attend the conference for FREE, that more FREE networking activities are now included in the conference program, and that the Engineering Symposium provided an opportunity for a wide array of EGSA member companies to invite their outside consulting-specifying engineers to attend the conference for FREE; thereby increasing interactions between conference attendees and end-users.

I would like to emphasize that the cost for a non-member to attend the conference is nearly two thousand dollars and EGSA members can now invite an unlimited number of consulting-specifying engineers to our conference at no extra charge. This alone massively dwarfs the cost of annual EGSA membership! Registration is now open for our Fall Conference which will be held from September 15 – 17, in Bellevue, WA. The theme for the conference is Artificial Intelligence in Onsite Power Generation and the program is shaping up to be even more exciting than our last conference. I encourage you to visit **www.EGSA.org** and consider attending, exhibiting, and sponsoring.

A few other points before I go. I'm happy to report that EGSA's membership grew by 4.5% last year and we are continuing to add more new members this year. We also formally launched our new MyEGSA Savings Program a few months ago so that EGSA members can now receive discounts on commonly used products and services like insurance, travel, hotels, rental cars, etc. These discounts are not only be available to our members, but our members can also extend them to all their company employees at no additional cost beyond what they already pay for their EGSA membership dues.

Additionally, we have also launched the new EGSA Knowledge Hub which is intended to be the world's premier resource library for the onsite power generation industry. The Knowledge Hub is an online platform for EGSA and experts across the onsite power generation community to share timely, actionable research, guides, ebooks, white papers, case studies and much more content designed to be help you and your business. I encourage you to post your industry content on the Knowledge Hub. For more information about the MyEGSA Savings Program or the EGSA Knowledge Hub, please visit **www.EGSA.org**.

Mir M. Mustafa, JD
Chief Executive Officer
Electrical Generating
Systems Association

As always, thank you for taking time out of your busy schedules to pick up the latest issue of Powerline and thank you to our members and the EGSA Board and staff for your continuing commitment to our association and the advancement of our industry. ●

Mir M. Mustafa, JD
Chief Executive Officer
Electrical Generating
Systems Association

EGSA Education Expansion

Nathan Harris
EGSA Director of Education
n.harris@EGSA.org

At EGSA, we are always taking steps to increase our education offerings across the board. This year it started at the Spring Conference where we launched the new Engineering Symposium format. The Spring Conference featured an Engineering Panel with speakers from BR+A Consulting Engineers, ASCO Power Technologies, Ring Power Corporation, Schneider Electric, Cummins, and Kohler Energy. This was followed up with six breakout sessions from those same companies that focused on topics that better served engineers from out member companies. However, these sessions are not limited to engineers. Because of the tremendous feedback we received from the Spring Conference, we will be bringing back six new Engineering focused sessions for the 2024 conference in Bellevue, WA this September.

The next conference will continue to feature our more traditional education offerings that focus on industry issues and advancements. With the theme of this next conference being *Artificial Intelligence and Onsite Power Generation*, we will also feature an A.I. focused education track. These sessions will cover everything from using A.I. in your everyday business operations to more advanced topics and applications.

Another addition to EGSA's education comes in the form of a personnel addition. Right before the conference we were proud to announce the addition of our new Executive Director of Education, Tom Wein. Many of us within EGSA have known Tom for a long time and we are happy to have him on staff. Tom will be heading up our initiatives to train technicians across the industry. EGSA has been trying to build technician training programs for many years and now with Tom on board, we feal we have the perfect fit to add that next element to EGSA Education. Keep an eye out for new training programs that are currently in the works. You will be able to find them on EGSA.org. However, you can always reach out to Tom directly at **t.wein@egsa.org**.

Due to high demand, we have also added a few more schools to our 2024 Schedule. We still have our two in-person schools (Basic Rowley School of Onsite Power: September 30-October2, San Antonio AND Advanced Rowley School of Onsite Power: May 13-16, Charlotte) for 2024. The remaining Virtual Basic Schools will be offered on July 15-17, October 28-30, and December 9-11. Virtual Advanced Schools will be offered August 26-29 and November 4-7.

We have already completed two Load Bank Certification Courses that were both maxed out in capacity, and we will be adding two more in the second half of the year. With Tom joining the team, we are also increasing the capacity of attendees from eight to twelve attendees per Load Bank Certification Course. Dates and locations for the final two school will be announced shortly, and as always, please contact Nathan Harris **n.harris@egsa.org** for registration information for Load Bank Certification Courses. ●

Nathan Harris
Director of Education

ARE YOU CONFIDENT YOUR TECHNICIANS HAVE THE KNOWLEDGE TO GET THROUGH THE NEXT ELECTRICAL EMERGENCY?

MAKE SURE THEY ARE EGSA CERTIFIED!

What is EGSA Technician Certification?

Generator technicians vary in skill level from employer to employer and market to market. Finding a way to identify a proficient and knowledgeable technician, or even identifying a technician's skill level can be challenging. The EGSA Technician Certification Program has expanded to meet these challenges.

We offer two levels of certification!

APPRENTICE LEVEL

(certification valid for 3 years)

The Apprentice level exam provides technical college students, recent graduates, military personnel, and other 1st or 2nd-year technicians with proof that the basic skill set has been met.

JOURNEYMAN LEVEL

(Initial certification valid for 5 years. Option to extend up to 2 additional years with education/recertification credits)

Our Journeyman exam assures an employer that this technician meets or exceeds 3 years of practical field experience. It tests 61 individual areas of expertise and has been upgraded to reflect current technologies.

How to get Certified?

- Apprentice and Journeyman certifications are each achieved by taking multiple choice tests that are designed to ensure technicians have the knowledge and experience to get the job done.
- The Apprentice test is completed in one sitting at an approved testing site.
- The Journeyman test is split into four modules that will be taken separately. This allows technicians additional time to prepare for each portion of the test.

Where to get Certified?

- EGSA has approved testing centers across the world. To find out where the closest testing site is located, contact **egsa@ferris.edu**.
- If your company is interested in getting multiple technicians certified, you can also contact **egsa@ferris.edu** for more information on becoming a proctor site. All you need is an HR/ Administrative department to register as a proctor.

EGSA

Please visit **EGSA.org/Certification** for additional details on the program.

BUILDING TRUST AND SUCCESS
The Power of Transparency in Leadership

Cody Phillips
The NEXT Academy

In the dynamic and complex world of On-Site Power Generation, where collaboration and precision are paramount, one key factor stands out as a catalyst for success – transparency in leadership. The power of transparency extends far beyond project timelines and budgets; it is the cornerstone that builds trust, fosters collaboration, and ultimately drives the industry towards excellence.

What kind of impact can transparency have? I feel it can be transformative because it's so rare. Be honest for a moment…how transparent are you as a leader? Do you show vulnerability and humility as you lead your organization?

If so…fantastic. Keep it up!
If not…please continue to read.

Foster Trust Through Open Communication

Trust is the bedrock of any successful project, and transparency is its building block. Leaders who prioritize open communication create an environment where team members feel valued and informed. Whether sharing project updates, challenges, or successes, transparent leaders establish trust by keeping stakeholders in the loop. This open dialogue instills confidence, aligns expectations, and mitigates misunderstandings, laying the foundation for a collaborative and cohesive team.

Build a Culture of Accountability

Transparency in your industry goes hand in hand with accountability. Leaders who are transparent about project goals, milestones, and individual responsibilities empower their teams to take ownership of their work. When expectations are clear, team members are more likely to meet and exceed them. This culture of accountability not only enhances project efficiency but also contributes to a positive and motivated workforce.

Navigate Challenges with Honesty

Construction projects are inherently complex, and challenges are inevitable. Transparent leaders confront challenges head-on with honesty and integrity. Whether it's addressing unexpected delays, budget constraints, or changes in scope, leaders who communicate openly about challenges create an atmosphere where problems are viewed as opportunities for solutions. This proactive approach fosters resilience within the team and strengthens its ability to overcome obstacles collectively.

Empower Informed Decision-Making

In an industry where decisions can have cascading effects on timelines and budgets, informed decision-making is crucial. Transparent leaders provide the necessary information and context for their teams to make well-informed decisions. By sharing relevant data, project insights, and potential risks, leaders empower their teams to navigate complexities with confidence. This collaborative decision-making process leads to better outcomes and positions the project for success.

Enhance Client and Stakeholder Relationships

Transparency extends beyond the construction team to encompass clients, stakeholders, and the wider community. Leaders who communicate openly with external partners build stronger relationships based on trust and mutual understanding. Transparent communication about project progress, challenges, and milestones creates a positive perception of the construction process and fosters long-term partnerships that extend beyond individual projects.

Embrace Continuous Improvement

Transparent leaders recognize that transparency is not a one-time effort but an ongoing commitment to improvement. By seeking feedback from team members, clients, and stakeholders, leaders can identify areas for enhancement and implement changes that contribute to continuous improvement. This commitment to transparency fosters a culture of learning and adaptation, ensuring that your team remains agile in a rapidly evolving, VUCA industry.

The power of transparency in ***Power Generation*** leadership is transformative. It builds trust, cultivates a culture of accountability, navigates challenges with honesty, empowers informed decision-making, enhances relationships, and embraces continuous improvement. As we construct the future of the industry, let us recognize and champion leaders who understand that transparency is not just a virtue; it is the engine that propels projects towards unprecedented levels of success.

What are some other critical reasons transparency is paramount in driving leadership success in 2024 and beyond?

Love to hear your thoughts at info@nextleadershipacademy.org

Lastly, I want to personally thank everyone who attended our workshop at the **2024 EGSA Spring Conference in Miami!** I hope that you came away from Marty's session with invaluable insights into ***Why Leadership Matters*** more than ever.

Don't miss this chance to enhance your leadership prowess! Register today for The NEXT Academy, a premier performance-based training provider in the construction industry. #BeNEXT ●

The Power of Membership

Shana Duthie
Chair, Membership and Marketing Committee
Duthie Consulting Group

Businesses often assess their participation in an organization, and our EGSA organization is no exception. Frequently, a company's involvement depends on its company's leadership and whether there is a champion of the organization within the company.

Selling the idea of an EGSA membership to someone who is not involved in the organization or has never attended a conference can be very difficult. They may not realize the connections that are made and built upon year after year, conference after conference, and from being active in a committee. Quite frankly, it can be hard to explain.

I became the EGSA champion at the company I worked for when one of my sales team kept bringing it up. He mentioned that he believed it was impacting the company brand not being a member of such a credible organization around onsite power. He made it evident to me that not being a member was detrimental to our business and the building of needed relationships across generator and service suppliers. Additionally, any generator service company that provides field services and has several technicians could only benefit from the education programs offered by EGSA.

As the current chair of the membership and marketing committee, I spend a lot of time at the conference talking with you, our members, and listening to your ideas and why you are a member of EGSA. The overwhelming response is the friendships that have been built and the business that is done between member companies.

The power of your membership is in your hands. My recommendation is to get out there, build relationships, become the champion for your company, get involved in education, or advocacy. Become a driver of the changes that are happening within the onsite power industry and improve your company's brand, your employees' education, and grow your revenue. Being an EGSA member has the ability to do the above.

If you have a story about how your EGSA membership has positively impacted your business, I would love to hear it. Your experiences are valuable and can inspire others.

Please share your story with me at shana@duthiecg.com. ●

EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a $300 fee. Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. To post an EGSA Job Bank ad (limited to approximately 50 words) please visit EGSA.org/Careers.aspx.

ELECTRICAL GENERATING SYSTEMS ASSOCIATION

Electrical Generating Systems Association (EGSA) is the world's largest organization exclusively dedicated to on-site power generation.

Bringing together industry professionals from all aspects of the generation industry – manufacturers, distributors/dealers, fuel services, testing equipment, end users etc., this network comes together to promote, educate, share best practices, and influence appropriate codes and standards for the safe application of onsite electrical power generation.

For over 50 years, EGSA has furthered the discussions that fuel our industry. Historically, we have focused on the combustion engine as the prime mover; we have expanded into solar, wind, and turbine engine prime movers as the need to support local demand and micro-grid technology has grown. Common applications are in back-up power situations for healthcare, government operations, military, financial institutions, and the expansion of data centers.

Key Benefits of EGSA Membership:

- **Networking and Connection:** Dive into a world of connections and foster discussions with design engineers, manufacturers, distributors, and service providers at our annual Conferences.
- **Industry Influence:** Join our Committees and Task Forces for peer learning, networking, and leadership opportunities in the on-site power generation industry - leading and collaborating with the industry's best while advancing its interests.
- **Recognition and Visibility:** Use the EGSA logo to enhance your marketing initiatives. Plus, a complimentary member listing in the highly anticipated annual EGSA Buying Guide elevating your company's visibility in the industry.
- **Promotions and Discounts:** Enjoy substantial discounts on Events, Educational Resources, including the "On-Site Power Generation: A Reference Book" - the industry bible, and Job Bank Ads.

EGSA Exclusives:

- **Apprentice and Journeyman Certifications:** EGSA Technician Certification is the industry standard for on-site power generation technician skill level and competency, offering two levels - Apprentice and Journeyman. This rigorous program evaluates technicians on their comprehensive understanding and proficiency in installation, service, maintenance, and repair of On-Site Power Generation systems.
- **Schools and Specialized Training:** Enrich your skills at our Rowley Schools of On-Site Power and Load Bank Schools. Choose from in-person, online, or experiential learning formats to fit your style. We're here to help take your professional journey to the next level.
- **EGSA Resources:** Stay ahead of the curve with our acclaimed publications like our quarterly "Powerline Magazine", reference materials, and essential glossaries and standards - all tools for our members to stay informed and innovative about the latest developments, insights, and trends in the on-site power generation industry.

THE VOICE OF THE ON-SITE POWER INDUSTRY

Contact us: **info@egsa.org** Learn more: **www.egsa.org**

Connect with us: **egsa1** **egsa_power**

Maintaining Power Through Retention

LionHeart Critical Power Specialists, a veteran-owned independent service provider, supports commercial standby power systems in Illinois, Indiana, Wisconsin, and Michigan. They recognize their employees make the difference and take pride in maintaining a strong retention rate by providing a safe and healthy work environment.

By Monty Hagberg, Gina Sciore, Aaron Marquardt, *LionHeart*

LionHeart recently had a 23-year veteran of generator and transfer switch services retire stating, "Even though I still love the job, my body's had enough". Receiving this type of news from a seasoned technician can send a shock wave through any organization. As we within the generator service industry know, what makes the industry so difficult is the fact it is a niche market and extremely difficult to find a "turnkey" technician who can jump into a truck and safely provide the highest level of comprehensive services and care to clients.

This impactful retirement prompted reflection by Don Ritter, President of LionHeart, as to what can be done to lessen the impact of the repetitive physical wear and tear of dedicated technicians and support personnel. His reflection drove management discussions of how the team at LionHeart could extend the longevity of their technicians not only with the physical demands but by minimizing the other pain points which can affect technician and support team retention.

25 years ago, Ritter was the company's very first field service technician. He states, "It was the toughest job I've ever had, and the lessons learned will never leave me." He explains the expectations of a top-level technician are incredible, "It's not only hard work with long hours, but they must be a jack- of-all-trades by knowing engines, alternators, controls, transfer switches, paralleling switchgear, fuel tanks, and gaseous systems". He adds, "You typically don't find or acquire top-level techs.

Here at LionHeart, several of them have grown to the top through hard work, dedication, pride, self-study, and collaboration. It requires tremendous exposure and support for a tech to grow into a PowerPro, and once you have one, you damn-sure better retain them."

As the entire power generation market is experiencing a limited pool of skilled talent, it is important to ensure the people a company acquires and grows is not only happy, but safe. With safety in mind, the first step taken was development of LionHeart's **"ZERO LIFT"** environment. Hydraulic carts for loading heavy items such as batteries, oil, coolant, and100kW portable load bank were procured as well as non- hydraulic carts matching the height of a standard LionHeart service truck. The height of shelves was adjusted to easily slide parts from shelf to cart to truck.

Next, the shop configuration was modified to significantly expedite and ease unloading and loading operations. Shop support staff now simplify these operations by preloading carts and actively assisting to minimize technician workload and time within the shop. Even batteries are preloaded onto carts for emergency and unscheduled services.

Management then turned to various support teams to lessen two other significant pain points expressed by technicians: time inefficiently spent on the road; and time duplicated creating detailed repair recommendations.

The Dispatch Team worked diligently to create processes for efficiently scheduling the closest capable technician, and strategically-located parts sheds were rented to minimize travel to and from the shop.

The Software Development Team worked to create an innovative feature referred to as a 'Template Recommendation'. Ritter explains, "Techs expressed frustration that they were creating detailed labor plans and parts lists for replacing batteries, jacket water heaters, and other re-occurring services on a specific generator - only to recreate these plans and lists the next time the batteries or heaters were recommended to be replaced. Our software team created an 'easy button' within the techs' iPads so they could simply push a button to recreate the previous recommendation with all previous plans and lists automated and populated. This feature saves - literally - hundreds of hours per year for our techs and estimators".

At LionHeart, the technician is considered a client to all support teams and is treated with priority. Ritter explains, "We know it's our job to provide our techs with every opportunity to succeed at providing a world class service to our clients. Our leadership team looked outside the organization, and we hired Reverie, a Chicago-based business consulting firm to obtain other perspectives on matters significant to the overall organization. That decision became a huge opportunity and time saver for mid-level management which resulted in a positive change and propelled significant overall growth in terms of revenue and, most importantly, the care of our most valued resource: our team members.

The philosophy of the technician being a client to the LionHeart team certainly proves to be accurate when seeing the care, time, and effort invested for team member retention. LionHeart viewed one man's retirement as an opportunity for improvement and took action to identify the challenges and install solutions to better the lives of all technicians. Ritter concludes, "Change is difficult for nearly all involved, but LionHeart always strives to evolve and The Zero Lift environment is just another example of our unwavering efforts. As with any valuable resource, it is the responsibility of ALL to care for them, protect them, and retain them."

To learn more about LionHeart Critical Power Specialists, visit **LionHeartPower.com** ●

EGSA Certified Technicians

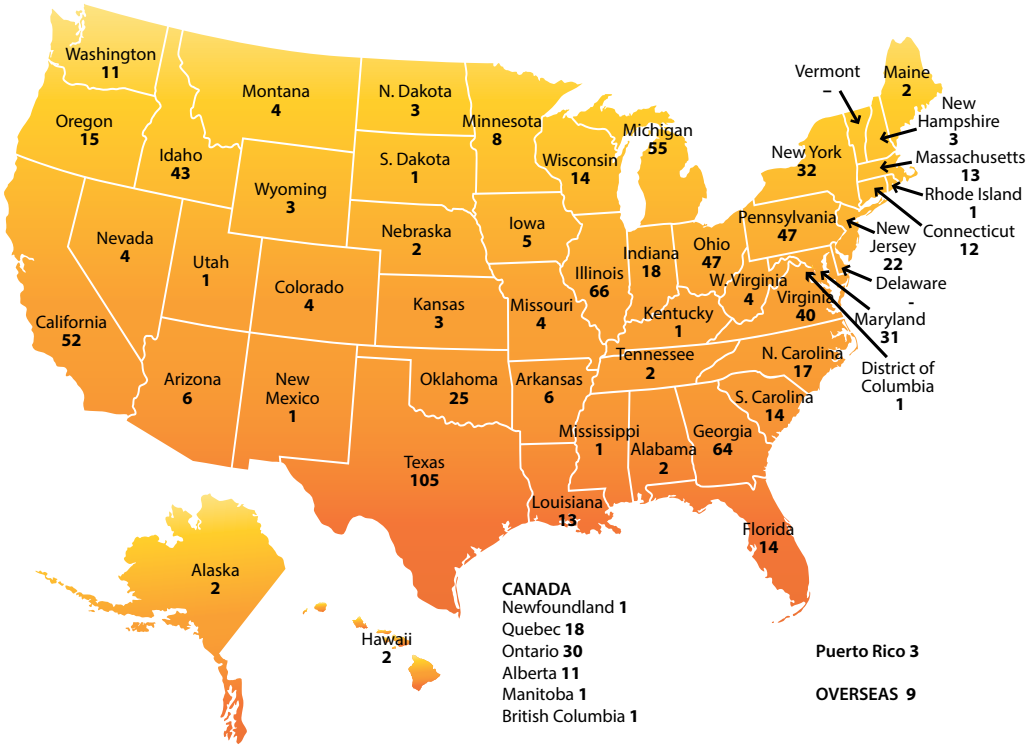
Advancing Professionalism in On-Site Power

As part of its commitment to advancing professionalism within the On-Site Power industry, EGSA has created the Electrical Generator Systems Technician Certification Program. Certification of personnel has become the hallmark of many industries in the United States today for one simple reason: It helps advance the profession by identifying consistent standards through which proficiency can be determined.

EGSA Technician Certification demonstrates a commitment to that ideal. Through rigorous testing, the program will identify those technicians who not only have a broad knowledge of electricity, mechanical and electrical components and the interaction between them, but are proficient in the installation, service, maintenance, and repair of On-Site Power generation systems.

Please visit egsa.org/Certification to learn more about EGSA Technician Certification. ●

916* EGSA Certified Technicians



EGSA Certification Levels

Apprentice
The Apprentice level exam provides technical college students, recent graduates, military personnel and other 1st or 2nd-year technicians with proof that the basic skill set has been met (certification valid for 3 years).

Journeyman
A passing grade on our Journeyman exam assures an employer that this technician meets or exceeds 3 years of practical field experience. This exam tests in 61 individual areas of expertise (certification valid for 5 years).

Exploring the Potential of Community Microgrids Through Three Innovative Case Studies

By Jana Gerber, *Microgrid President, Schneider Electric North America*

Community microgrids represent a burgeoning solution to meet the energy needs of localized areas and regions. These microgrids are clusters of interconnected energy resources, including solar photovoltaic (PV) arrays and battery energy storage systems, designed to provide reliable and sustainable power to a specific area. By integrating various renewable energy sources and storage technologies, community microgrids can enhance energy resilience, reduce dependency on centralized grids, and mitigate the impact of power outages.

These microgrids offer opportunities for community engagement and ownership, allowing residents to actively participate in generating and managing their energy supply. As concerns about climate change and energy security continue to grow, community microgrids are poised to play a pivotal role in transitioning towards a more decentralized and sustainable energy landscape.

Let's explore three diverse examples of community microgrids to understand their applications, benefits, and innovations. Each case provides unique insights into how microgrids address local challenges, showcasing their versatility in revolutionizing energy systems and promoting sustainability.

Powering Energy-Smart Connected Homes

KB Home's groundbreaking Energy-Smart Connected Communities in Menifee, California, features over 200 cutting-edge, all-electric homes powered by solar energy and equipped with individual battery storage. These homes will be interconnected through a microgrid powered by a communal battery that will fuel the entire neighborhood, ensuring resilience against power outages through a self-sustaining energy ecosystem.

KB Home's Energy-Smart Connected Communities in Menifee, California.

These homes will serve as a blueprint for sustainable and resilient home development, supported by a $6.65 million Department of Energy grant. Each of the 219 homes will be designed to meet the Department of Energy's Zero Energy Ready Home criteria, boasting energy-efficient features that can reduce average energy consumption by up to 40%. With SunPower Equinox solar systems, SunVault Storage batteries, high-efficiency appliances, and smart technologies from Schneider Electric, these state-of-the-art, all-electric homes are designed to be connected to a microgrid powered by a large, shared community battery adding greater energy resilience. This project represents a pioneering example of sustainable living and a blueprint for new home communities of the future.

Increasing Community Resilience Across Four Facilities

The Daughters of Mary of Immaculate Conception established an advanced microgrid across their campus in New Britain, Connecticut, offering a multifaceted solution to address various community needs. The microgrid ensures operational continuity and resilience by interconnecting four critical facilities within the 137-acre campus, allowing essential services and care to persist even amidst grid disruptions. Boasting a robust infrastructure, the microgrid provides uninterrupted access to electricity during power outages, leveraging 1.3 megawatt hours of battery storage capacity alongside 1.2

The Daughters of Mary of Immaculate Conception's campus in New Britain, Connecticut.

megawatts of solar generation and a 250-kW natural gas generator for emergency backup.

This groundbreaking project significantly enhances energy reliability by consolidating four separate building services into a unified system that is adaptable to various operational modes during islanded operations. Notably, the microgrid has yielded substantial reductions in energy costs, with a remarkable 18% decrease observed in total electricity expenses from 2023 versus 2022. Furthermore, the microgrid's transition to 100% renewable energy in island mode underscores its pivotal role in carbon reduction efforts, with an estimated annual reduction of 1,300 metric tons of greenhouse gas emissions. This innovative renewable energy hub exemplifies sustainability while fortifying critical facilities against unforeseen emergencies.

Fostering Sustainable Senior Living

A senior care facility in Canada is spearheading the development of a progressive housing complex comprising 128 units tailored for seniors in Sainte Foy, Quebec. This social housing initiative seeks to enhance energy efficiency while serving as a model for achieving substantial energy savings, with the potential for replication in similar community housing projects province wide.

At the heart of this endeavor lies the integration of a microgrid featuring a 50kW/100kWh Battery Energy Storage System, a Building Management System, and a 300kW Natural Gas Combined Heat and Power solution. This comprehensive microgrid solution includes an Energy Control Center, ASCO Automatic Transfer Switches, and auxiliary power distribution panels. By leveraging cloud-based energy management algorithms and interfacing with Hydro Quebec's load curtailment program, the microgrid promises optimized energy costs, enhanced resiliency, and improved resource optimization. The microgrid ensures robust operational efficiency while empowering the customer with heightened power resiliency through remote monitoring, forecasting capabilities, and grid-tied peak demand management strategies.

Community microgrids stand at the forefront of a transformative shift towards decentralized and sustainable energy solutions. These interconnected networks of renewable energy resources enhance energy resilience and foster community engagement and ownership in energy management. As demonstrated by the diverse examples explored, microgrids offer multifaceted benefits ranging from improved energy reliability to reduced carbon emissions. With continued advancements and widespread adoption, community microgrids are poised to revolutionize the energy landscape, paving the way for a more resilient, sustainable future. ●

A senior care facility in Sainte Foy, Quebec.

Adverse Effects of Low Load Operation on Diesel Generating Sets

Load Banks provide the best practical means for allowing the engine of diesel powered generator to operate at it's designed load and temperature ratings. Using a correctly sized load bank will prevent fuel system and emission issues that can affect diesel engine reliability and performance.

Load Bank

A load bank develops an electrical load and applies it to an electrical power source. The load bank then converts or dissipates the resultant electrical energy into heat energy. The amount of power is rated in kilowatts (kW) and the amount of heat energy is quantified in British Thermal Units (BTU).

Load banks provide a stable and controllable load for evaluating the performance characteristics of a power system. A load bank can be as simple as a single resistor, or as complex as an integrated resistive and reactive unit that is controlled by an advanced software package. Figure 1 shows the configuration of components in a typical resistive load bank.

Wet Stacking

Wet stacking is an industry term for the accumulation of unburned fuel in the exhaust system of a diesel engine. While multiple conditions can result in this effect, wet stacking commonly occurs when engines are under loaded and do not reach operating temperature. If uncorrected, wet stacking can reduce engine output and efficiency and result in premature failure.

Diesel engines also depend on cylinder pressures generated by higher loads to correctly seal the combustion chamber. If load is too low during combustion the chemical reaction taking place will not be as strong, causing hydrocarbons to be left completely intact and then expelled in the form of particulate matter. Partial burning of diesel fuel results in large carbon dioxide particles as well as greenhouse gasses all of which contribute to air pollution.

In general, operating a diesel generator between 30-50% of the nameplate rating allows the engine to

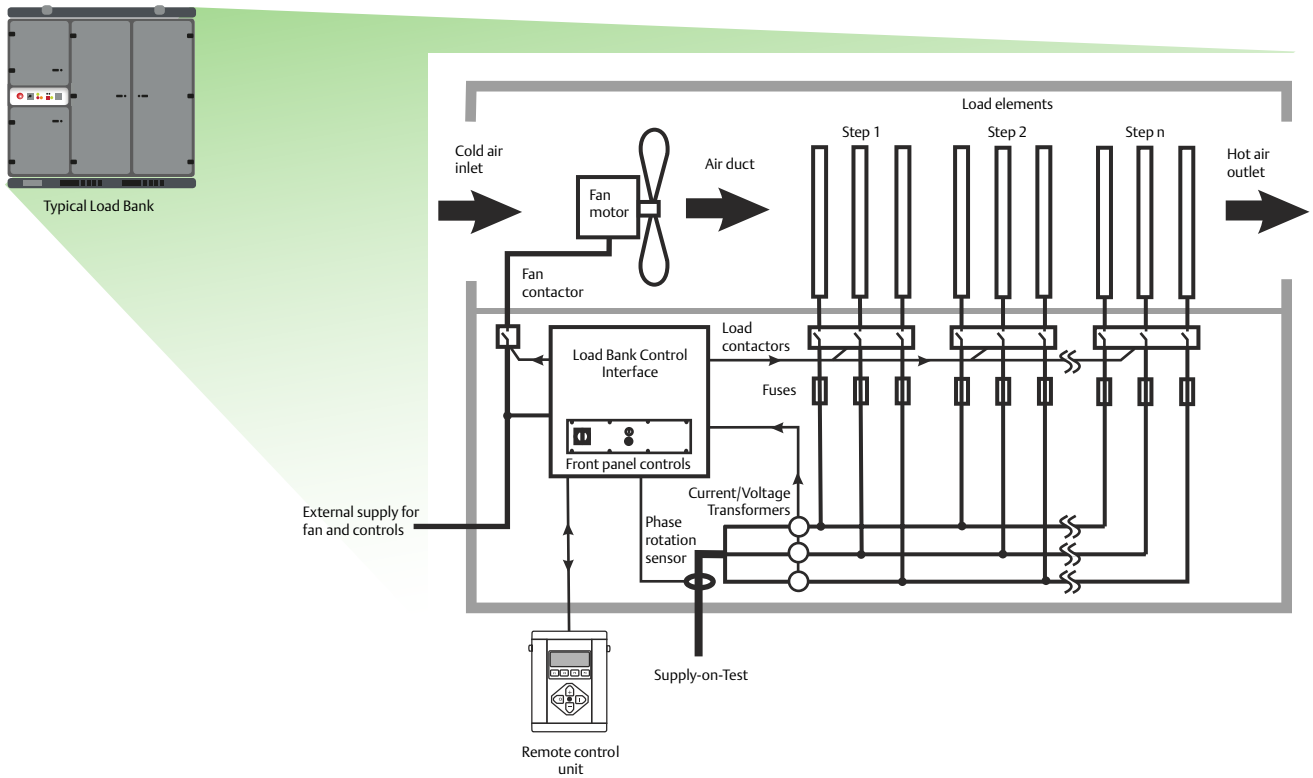


Figure 1. Configuration of a resistive load bank.

reach its recommended operating temperature and burn off any fuel deposits. Slowly increasing load until the excess fuel is burned off and system capacity is attained typically reduces wet stacking. Depending on how excessive the fuel build up is, this process can require up to several hours under continuous load. Frequent wet stacking can shorten the life of a generator, increase maintenance costs, and increase the level of emissions produced.

Load banks provide the precise incremental load values for properly reducing the effects of wet stacking. Load banks can also be sized as supplemental loads in a backup emergency power system to maintain diesel generator set load levels.

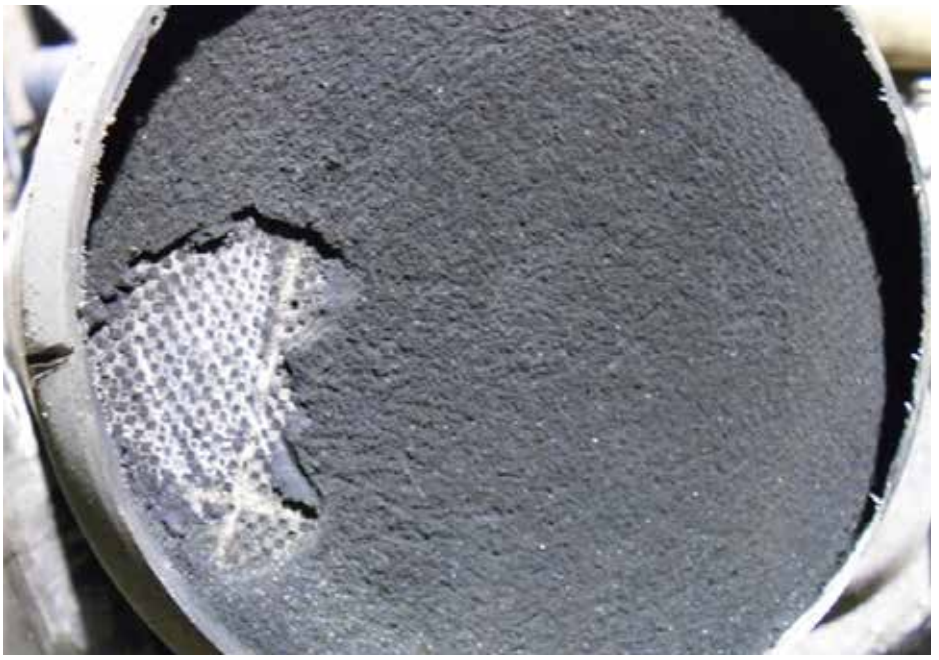


Figure 2. Blocked DPF filter.

Diesel Particulate Filters

Particulate matter is responsible for the black smoke traditionally associated with diesel exhaust. Diesel Particulate Filters (DPF) are designed to remove particulates from the exhaust gasses of diesel engines.

Rather than mechanically cleaning the filter, "DPF Regenera- tion" burns off particulates to return the filter to a serviceable condition. This usually occurs whenever an engine reaches a certain operating temperature, a process known as "Passive DPF Regeneration". However, engines running at low load levels do not attain the exhaust temperatures needed for passive regeneration to occur. Failure to reach and maintain normal exhaust temperature can result in the DPF becoming blocked by unburned deposits. (See figure 2).

Some diesel engine manufacturers have turned to "active" regeneration to avoid clogged particulate filters. This process is initiated after engine control software detects that a DPF is becoming blocked. When this occurs additional fuel is injected into an engine's combustion chambers to increase the temperature and trigger regeneration.

It is important to note that active regeneration typically requires approximately 10 minutes to complete. If the cleaning cycle is interrupted, the filter may be only partially cleaned and may continue to restrict exhaust flow through the filter. For this reason, active filters require elevated temperatures to be maintained throughout the entire cleaning cycle.

Load banks provide an effective means to attain and maintain exhaust temperatures for proper DPF operation. Many load bank manufacturers have specially designed units with sophisticated temperature and load leveling controls to help achieve DPF regeneration.

Correct Load Levels

Properly specified generators should have an available load of at least 30 to 50% of their rated output. Exercising your generator or running it during off hours with very little load will increase the risk of fuel and emission problems due to wet stacking.

Ideally, diesel generators should be run at a minimum of 30% of nameplate ratings. Short periods of low load operation are permissible provided the equipment is run at or near full load on a regular basis.

Extended run times and excessive idling at low loads can cause several problems, such as poor combustion, wet-stacking, the formation of deposits on cylinders/turbocharger components and internal glazing. Notably, newer engines increasingly rely on increased turbocharger output to optimize the balance between performance and emissions. This increase in turbocharger output narrows the operating range to avoid wet stacking. In these instances, long term low load operation below 45% of nameplate rating can reduce engine service life.

These conditions may also occur due to excessive idling (such as standby) operation, or by under loading that occurs when the generator capacity is purposely oversized for future growth. These conditions can result in failures when the generator is not operated according to application requirements and operating guidelines.

The best practice is to consult an engine generator manufacturer regarding their specific operation requirements. All major generator set manufacturers typically suggest a minimum load of at least 30% of nameplate capacity to insure proper fuel and emission operation.

Supplemental Loading

Load banks offer an optimal means for applying supplemental load to diesel powered generator systems. Supplemental loads are defined as loads that make up a percentage of the generator sets nameplate rating. Supplemental loads are typically sized 30-50% of power source capacity (never 100%).

Portable load banks can be used in applications where they must be moved to various locations. Permanent load banks are designed for continuous outdoor operation and can be installed on a concrete pad or rooftop. Radiator mounted load banks are primarily designed to provide supplemental loading and are installed directly on the engine radiators. Each type is shown in figure 3.

Any of the above load bank designs will allow regular system testing and emission verification without interrupting power to building loads. This can be especially important where the generator systems serve critical life, safety, communication, or financial systems.

Building Load

To test backup power systems, live building loads can be applied to the generator, however this may cause power interruptions when loads are being transferred from utility to generator. In addition, transferring live load does not allow load to be applied in the discrete steps needed to accurately monitor performance and data logging. Other disadvantages include:

- Unavailability of sufficient building load (depending on the time of day, load may rarely exceed 50% of the required amount)
- Building load fluctuations (this can make it difficult to achieve and maintain the required test load level)
- It does not allow the load to be applied in steps, where performance can be monitored and recorded.

Providing adequate building load may not be practical when critical life, computer, safety, or communication systems are present. Any interruption of power to these loads may cause a loss of data, interrupt operation, or jeopardize personal safety. It is generally agreed that a load bank is the preferred method to test and load a diesel generating system.

Load Bank Controls

Because load banks provide precise repeatable loads, they are ideal for maintaining minimum loads on the generator sets (gen-sets). Most modern load banks can automatically add or subtract loads in steps to maintain a set value. This enables diesel gen-sets to operate at exhaust temperatures that promote more efficient fuel combustion, reduce emissions, and avoid wet stacking.

Load bank controls like Site Load Correction (SLC) will automatically maintain a required level of loading on the

Portable	Permanent	Radiator Mount
		
Often featuring dual voltage capability and digital metering, these models offer casters for easy movement. Their small dimensions allow passage through man doors and freight elevators.	Stationary units are typically mounted on concrete pads and rooftops, and usually offer single voltage capability.	Typically single voltage units for either indoor or outdoor use, their dimensions are based on the size of the radiator serving the engine. Radiator mounted units are the most common design for supplemental loading.

Figure 3. Load Banks

generating set. SLC control includes current transformer(s) which continually monitor the site load. When the site load decreases the load provided by the load bank will increase. Conversely, when the site load increases then the load bank load will decrease, thereby automatically maintaining an acceptable level of loading on the gen-set.

The level of load (set points) which is applied to the generator can be adjusted manually or through software. Load steps will only be applied when the site load is continuously below the set point threshold for a predetermined time, each step going consecutively. Load steps will be removed immediately when the generator set load increases above the set point selected. On receiving the initial signal that the generator is running, the load bank load will be delayed from operating to allow the generator to stabilize.

For proper SLC and automatic load control, the kW capacity of a gen-set must be known to provide the necessary amount of load, correctly size current transformer and specify load control steps. If inappropriate load steps and current sensor settings are specified, a generator could be overloaded. Figure 4 shows how load bank controls modulate the interaction of building and load bank loads during a generator test.

For more information review Avtron Power Solutions *Advances in Load Bank Controls White Paper*.

Gen-Set Testing and Emission Standards

National Fire Protection Association (NFPA) 100 standard for Emergency and Standby Power Systems sets forth test- ing and maintenance recommendations for backup generation systems. Section 8.4.2. recommends conducting load tests at least monthly. These tests must run for a minimum of 30 minutes at not less than 30% of the generator's nameplate rating. Additional information can be found in this standard at NFPA.

ISO-8528 is an industry standard for performance parameters in on-site power applications. The ratings outlined in this standard, define basic generator set rating categories based on four segments; emergency standby, prime power, limited time running time, and continuous power. In each category, a generator set's rating is determined by its maxi- mum allowable power output in relation to running time and load profile. Misapplication of these ratings can jeopardize the longevity of the generator set, void manufacturer's warranties, and put the gen-set at risk for failure.

The European Union (EU) also has standards regarding Diesel Emission

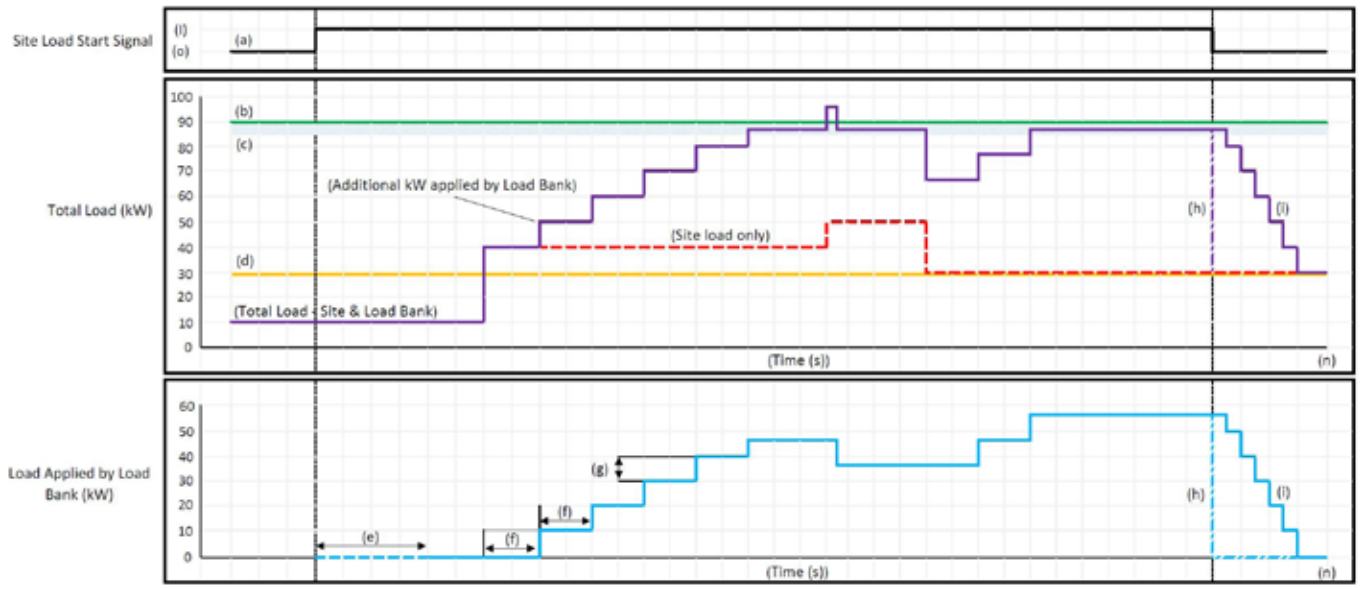


Figure 4. Site Load Correction Timing Diagram example.

Levels. The most up to date and comprehensive summary information can be found at: http://www.amps.org.uk/eu-emissions-update.

Summary

For a diesel engine to operate at peak efficiency, it must operate at temperatures sufficient to completely burn all the fuel. The use of a load bank will allow the diesel engine to maintain proper operating temperature. Maintaining this temperature will help prevent wet stacking which can result in the loss of capacity and increase of emission. Modern load banks offer designs and control operation that can ensure diesel engines run at load level required to ensure reliability and prolong the operational life of a gen-set. ●

AVTRON POWER SOLUTIONS

The Electrical Generating Systems Association recently hosted its Spring 2024 Conference at the beautiful Hyatt Regency in sunny Miami, Florida. Embracing our mantra "Network. Learn. Advance," the conference was a significant milestone in the EGSA journey. This event perfectly combined professional networking with vibrant celebrations, showcasing the dynamic and innovative spirit of the power generation industry.

We sincerely thank everyone who made this conference unforgettable. Your participation and contributions were essential in creating a memorable event. We eagerly look forward to our next event in Bellevue this September and hope to see you there!

GENERAL SESSION HIGHLIGHTS: INSIGHTS FROM CHARLES EVANS

The conference began with a compelling session by Charles Evans, an economic and financial expert and former President & CEO of the Federal Reserve Bank of Chicago. Evans shared his expertise on economic growth, inflation, and market trends. He offered an optimistic outlook for the economy, predicting improvements in key areas and highlighting differing opinions among experts on the pace of these changes. His insights set a thoughtful and engaging tone for the rest of the conference.

ENGINEERING EXCELLENCE: INSIGHTS FROM INDUSTRY LEADERS PANEL

The panel, moderated by Carlos Jimenez from BR+A Consulting Engineers, featured leading industry professionals: Jim Briceno of ASCO Power Technologies, Joseph Dickinson of Ring Power Corporation, Joe Kendall of Schneider Electric, Jennifer Nekuda of Kohler Power, and Mariano Rojas of Cummins. These experts, representing diverse companies, shared valuable insights and best practices on power system design. They covered crucial topics such as installation, operations, and serviceability of power systems equipment, power studies, selective coordination, and common pitfalls in writing specifications and interpreting design documents. The session offered attendees practical advice on transfer switch specifications and the inclusion of permanent docking station connections for temporary power sources. Following the panel, in-depth engineering breakout sessions provided further detailed discussions throughout the conference.

EMPOWERING THE FUTURE: KEY TAKEAWAYS FROM OUR EDUCATIONAL SESSIONS

Our Spring 2024 Conference featured a series of impactful educational sessions that tackled critical issues and introduced innovative solutions in the power generation industry. From sustainable power generation and optimizing field service operations to evolving leadership models and reducing emissions, attendees gained valuable insights and practical strategies. Discussions on empowering women in the industry, developing and retaining skilled technicians, and overcoming project challenges highlighted the importance of collaboration and preparedness. Thank you to all our incredible speakers who offered their time, insights, and best practices to enhance our conference and attendee experience. These sessions reinforced our commitment to advancing knowledge and driving progress within the power generation community.

NETWORKING AND INTERACTIVE EXPERIENCES: BEYOND CONVENTIONAL LEARNING

The EGSA Spring 2024 Conference truly embodied the spirit of networking with an array of exciting activities. Attendees explored Florida's natural beauty through fishing trips and Everglades tours, while new member and welcome receptions provided the perfect setting for fresh connections. The golf and pickleball tournaments sparked lively competition and camaraderie, and the mojito-making class added a delicious twist to networking. A standout highlight this year was the offsite Putt-Putt event at Putt Shack, which was a massive hit and offered a unique, relaxed atmosphere for attendees to mingle. Plus, the inclusion of spouses and significant others attending for free this year made the experience even more enjoyable and inclusive, enhancing both the conference and its networking opportunities.

DIVERSE EXHIBITOR HALL: A SHOWCASE OF INDUSTRY INNOVATIONS

The Exhibitor Hall captured the diversity and innovation of the power generation industry, with companies from various sectors showcasing their latest products and services. It provided attendees with a tangible glimpse into the industry's future direction and growth. More than just a display area, the hall was a dynamic space for exchanging ideas, forging partnerships, and discovering new market trends.

LOOKING AHEAD: EGSA FALL 2024 CONFERENCE IN BELLEVUE, WASHINGTON

Reflecting on the success of the Spring 2024 Conference, EGSA eagerly anticipates the Fall 2024 Conference in Bellevue, set to offer extensive learning, networking, and industry advancement opportunities. The Spring event marked a key step in our journey of innovation and growth. We warmly invite you to join us in Bellevue, September 15-17, where we'll continue to delve into the latest in power generation, foster new connections, and collaboratively propel our industry forward. **Network. Learn. Advance**. - The EGSA mantra that continues to drive us towards a brighter, more connected future in power generation. Early Bird Registration ends August 16th; register today at egsa.org to secure your spot!

We Can Come To You!
Looking for a cost effective way to get all of your staff up to speed on power generation all at once? Need to introduce basic principles of on-site power to your team? EGSA will work with you to provide the most appropriate training for your team at your facility or virtually.

Customize your school by selecting from the 23 Basic and/or Advanced school modules for your core program. Contact us for more information.

BASIC SCHOOL

Perfect for staff new to the power generation industry or someone who needs an introduction to basic concepts and technologies, this school is appropriate for students seeking a foundation in generator technology. Whether you are in sales, marketing, management, application engineers, engine technicians, or administrative personnel, you will find great value in this course! The Basic School is a general, yet technical, overview of On-Site Power.

2024 BASIC SCHOOL SCHEDULE

Virtual: July 15-17
San Antonio, TX: September 30-October 2
Virtual: October 28-30
Virtual: December 9-11

Basic School Topics:

- Basic Electricity & Prime Movers
- Understanding Generators/ Alternators
- Starting Systems
- Generator Components (Automatic Voltage Regulators, Governors, Instrumentation)
- Generator System Protection
- Transfer Switches
- Load Bank Fundamentals
- Codes and Standards
- Generator Set Systems: Putting the Pieces Together
- Understanding Bid & Specification Documents

ADVANCED SCHOOL

Our Advanced School is designed for those who have a good understanding of the basic mechanical and electrical systems found in an on-site generator site. A minimum of three years of experience in the industry is recommended. It will be particularly useful for those employed in engineering, project management, service positions, and business owners.

2024 ADVANCED SCHOOL SCHEDULE

Charlotte, NC: May 13-16
Virtual: August 26-29
Virtual: November 4-7

Advanced Course Modules

- Advanced Generators/Alternators
- Generator Set and Critical Power System Controls
- Generator and System Protection
- Advanced Automatic Voltage Regulators (AVRs)
- Advanced Governors/Speed and Load Controls
- Advanced Transfer Switches
- Multiple Generator
- Paralleling Switchgear
- Engine Emissions
- Noise Control
- Communications
- Advanced Generator Systems: Sizing to Service

LOAD BANK CERTIFICATION

EGSA's Load Bank Certification is a 2.5-day course which includes classroom and hands-on training sessions. This school is designed specifically for experienced technicians looking to increase their knowledge and abilities. The school concludes with EGSA's Load Bank Certification test.

2024 LOAD BANK CERTIFICATION

Refer to **EGSA.org/Events** for dates and locations.

Load Bank Certification Modules

- Safety protocols
- Deciphering nameplate ratings of generators
- Different types of load tests
- Connections
- Testing requirements of the local authority having jurisdiction (AHJ)
- Applying the appropriate loads for the test required
- Gathering/calculating/documenting load test parameters and results
- Site and environmental conditions
- Potential problems/corrective actions

Please visit **EGSA.org/Certification** for additional details on the program.

EGSA George Rowley Schools of On-Site Power Generation

Virtual Offerings

Live Virtual Rowley School

These live virtual schools are taught by the same knowledgeable and professional instructors who have been teaching at the in-person schools across the country. One of the best parts of physically going to the in-person school is the ability to speak directly with the instructors and ask questions. Rest assured, we have made our live virtual schools as interactive as possible and instructors are still able to answer your questions on the spot.

Virtual Basic Schools

July 15-17
October 28-30
December 9-11

Virtual Advanced School

August 26-29
November 4-7

Pre-Recorded Sessions

All live virtual sessions are recorded and access to the recordings are provided when you register for the live virtual school. These recorded sessions will also be available on EGSA.org as individual sessions or a package of the complete school. As we continue to complete live virtual schools, our library of recorded content will grow and be made available.

Check out ***EGSA.org*** for more information and available courses.

EGSA
Electrical Generating Systems Association

EGSA Membership Classification and Dues

Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.

FULL MEMBERSHIP

These Full Memberships categories are for corporations and their memberships cover all employees of the company.

MEMBERSHIP CATEGORY		CATEGORY DESCRIPTION	ANNUAL DUES	INITIATION FEE	TOTAL DUE
MF	**Manufacturer Membership**	Any corporation seeking membership must apply for a full membership as a manufacturer if they meet one or more of the following criteria: 1. They manufacture prime movers for power generation. 2. They manufacture generators or other power conversion devices producing electricity. 3. They manufacture switchgear or electrical control devices. 4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components, or accessories for national or regional distribution.	**$1354**	$257	**$1611**
DD	**Distributor/Dealer Membership**	Any corporation actively engaged as a distributor or dealer for products listed under manufacturers, Section 1, Paragraph a., may apply for full membership as a Distributor/Dealer. If an organization qualifies as a manufacturer under Section 1, Paragraph a., it is not qualified under this section.	**$508**	$128	**$636**
CI	**Contractor/Integrator Membership**	Any corporation actively engaged as a Contractor or Equipment Integrator of products listed under manufacturers, Section 1, Paragraph a., not brand by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product, may apply for full membership. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**
MR	**Manufacturer's Representative Membership**	Any corporation actively engaged in the representation of products listed under manufacturers, Section 1, Paragraph a., may apply for full membership as a Manufacturer's Representative. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**
SMTR	**Service, Maintenance, Monitoring, Testing, and Repair Companies Membership**	Any corporation engaged in the service and maintenance, or monitoring, testing, or repair of products listed under Section 1, Paragraph a., may apply for full membership. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**
RC	**Rental Companies Membership**	Any corporation actively engaged in the rent or lease of products listed under manufacturers, Section 1, Paragraph a., may apply for full membership as a Manufacturer's Representative. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**
UIE	**Utilities, IPPs, and Energy Services Companies Membership**	Any public or private corporation engaged in energy generation and/or management, including public and private utilities, Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for full membership. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**
CSE	**Consulting Specifying Engineer Membership**	Any consulting specifying engineering firm may apply for full membership. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$508**	$128	**$636**

ASSOCIATE MEMBERSHIP

These Associate Memberships categories are for corporations and their memberships cover all employees of the company.

MEMBERSHIP CATEGORY		CATEGORY DESCRIPTION	ANNUAL DUES	INITIATION FEE	TOTAL DUE
EU	**End-User Membership**	Any corporate or other public or private organization that purchases, owns, or operates, electrical generating equipment and/or related switchgear or components may apply for associate membership. If an organization qualifies under Section 1, Paragraph a, or b, it is not qualified under this section.	**$347**	$128	**$475**
EIGN	**Educational Institution, Government, and Nonprofit Membership**	Any school, university, postsecondary vocational-technical school or college, unit of federal, state, or local government, or nonprofit organization may apply for associate membership.	**$347**	$128	**$475**
PS	**Professional Services Firm**	Any professional services firm or other service-related organizations that do not exlusively service the electrical generating industry such as accounting, legal, financial services, communications, etc. may apply for associate membership.	**$347**	$128	**$475**
IND	**Individual Membership**	Any individual who was previously employed in the on-site power generation industry but is no longer actively employed in the industry.	**$142**	*FREE*	**$142**
MIL	**Military Membership**	Any individual who is currently enlisted may apply for membership within this category. Proof of military engagement is required by either current Military ID card.	**$84**	N/A	**$84**
RET	**Retiree Membership**	Any individual who retires from a member company may apply for Associate Membership. This classification does not apply to any individual who is employed more than 20 hours per week.	*FREE*	*FREE*	**$0**
STU	**Student Membership**	Any individual currently enrolled at an academic institution may apply for Associate Membership. This classification does not apply to any individual who is employed more than 20 hours per week	*FREE*	*FREE*	**$0**

Application via Website

Visit the EGSA Website: www.egsa.org.

Create an Account: On the EGSA website, locate the membership page and follow the guide to apply for membership. This process will involve creating an account on **MyEGSA**.

Set Up Your Organization's Profile: After creating your account, you will need to set up your organization's profile. Ensure all the necessary details are accurately filled in to avoid delays in your application process.

Review Process: Within two business days, the EGSA staff will verify the application details, conduct research on your organization, and assign the appropriate Membership Type based on your organization's qualifications and interests.

Congratulations on taking the first step towards becoming a member of the EGSA community! If you have any questions or need assistance during the application process, please do not hesitate to contact us at **info@egsa.org**.

Organization Information

Company _____

Address _____

City _____ State/Province _____ Zip/Postal Code _____ Country _____

Phone _____ FAX _____

Branches _____

Official Representative _____ Title _____

Representative's E-Mail _____ Company's Web Address _____

Organization's LinkedIn Page _____ Instagram Handle _____ Facebook Page _____

Organization Description _____

_____

Does the Organization employ EGSA technicians? ☐ Yes ☐ No

How did you hear about EGSA? ☐ Website ☐ *Powerline* magazine ☐ Colleague ☐ PowerGen ☐ Social Media ☐ Internet Search ☐ Other_____

Why are you joining EGSA? ☐ Certification Program ☐ CEU Program ☐ Power Schools ☐ Buying Guide Listing ☐ Networking ☐ Committees ☐ Other_____

Member Classification

Please use the worksheet on page one of this application to determine your membership type.

FULL MEMBERSHIP

- ☐ **MF** Manufacturer Membership
- ☐ **DD** Distributor/Dealer Membership
- ☐ **CI** Contractor/Integrator Membership
- ☐ **MR** Manufacturer's Representative Membership
- ☐ **SMTR** Service, Maintenance, Monitoring, Testing, and Repair Companies Membership
- ☐ **RC** Rental Companies Membership
- ☐ **UIE** Utilities, IPPs, and Energy Services Companies Membership
- ☐ **UIE** Consulting Specifying Engineer Membership

ASSOCIATE MEMBERSHIP

- ☐ **EU** End-User
- ☐ **EIGN** Educational Institution, Government, and Nonprofit
- ☐ **PS** Professional Services Firm
- ☐ **MIL** Military Membership
- ☐ **STU** Student Membership
- ☐ **RET** Retiree Membership
- ☐ **IND** Individual Membership

Organization Demographics

This information is for internal EGSA purposes only. It does not appear in the *EGSA Buying Guide* or the Member Directory.

Number of Employees: ☐ 1-20 ☐ 20-100 ☐ 100-500 ☐ 500+

Annual Revenue: ☐ $0-$500k ☐ $500k-1.5M ☐ $1.5M-$2.5M ☐ $2.5M-$5M ☐ $5M-$10M ☐ $10M-$20M ☐ $20M-$50M ☐ $50M-$100M ☐ $100M-$1B

Membership Dues

(Please fill in the appropriate TOTAL amount from the dues schedule on page one.)

Membership Dues $ _____

Membership Plaque (optional)** $ 102.00

On-Site Power Generation: A Comprehensive Guide to On-Site Power (optional)** $ 260.00

Florida Residents: Add 7% Sales Tax to ** items $ _____

** Shipping and handling is included for Continental US & Canadian Residents.

All others should call EGSA Headquarters for $ _____ shipping charges for **items.

TOTAL $ _____

Payment Method

Payment is prorated based on the membership start date, covering the remainder of the calendar year. Following acceptance of your application, EGSA Staff will reach out directly with detailed instructions for completing your payment. We appreciate your interest and look forward to your membership.

EGSA Buying Guide Listing Info

	Sells	Rents	Services
Batteries/Battery Chargers	☐	☐	☐
Control/Annunciator Systems	☐	☐	☐
Education	☐	☐	☐
Emission Control Equipment	☐	☐	☐
Enclosures, Generator Set	☐	☐	☐
Engines, Diesel or Gas	☐	☐	☐
Engines, Gas Turbine	☐	☐	☐
Engine Starters/Starting Aids	☐	☐	☐
Filters, Lube Oil, Fuel or Air	☐	☐	☐
Fuel Cells	☐	☐	☐
Fuel Tanks and Fuel Storage Systems	☐	☐	☐
Generator Laminations	☐	☐	☐
Generator Sets	☐	☐	☐
Generators/Alternators	☐	☐	☐
Governors	☐	☐	☐
Heat Recovery Systems	☐	☐	☐
Instruments and controls, including meters, gauges, relays, contactors, or switches	☐	☐	☐
Load Banks	☐	☐	☐
Motor Generator Sets	☐	☐	☐
Radiator/Heat Exchangers	☐	☐	☐
Relays, Protective or Synchronizing	☐	☐	☐
Silencers/Exhaust Systems/Noise Abatement	☐	☐	☐
Solenoids	☐	☐	☐
Switchgear and Transfer Switches (Automatic or Manual), Bypass Iso-lation Switches, and/or Switchgear Panels	☐	☐	☐
Trailers, Generator Set	☐	☐	☐
Transformers	☐	☐	☐
Uninterruptible Power Supplies	☐	☐	☐
Vibration Isolators	☐	☐	☐
Voltage Regulators	☐	☐	☐
Wiring Devices or Receptacles	☐	☐	☐

For Distributor/Dealers, Manufacturer's Representatives and Contractor/Intergrators Only—List the manufacturers that your organization represents, deals or integrates:

_____

For Manufacturers Only—List your organization's Representatives, Distributors and Contractor/Integrators:

_____

Sponsor(s):

A "Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name _____ Company Name _____

Official Representative's Authorization

Signature _____ Date _____

For any EGSA Membership questions, please contact us at **info@egsa.org.**

EGSA Enriches & Unites the On-Site Power Generation Industry with *POWERLINE Magazine!*

Tap Into the Captive Audience Your Organization Needs to Reach!

POWERLINE Magazine is one of the best ways to stay on top of the rapidly changing landscape of On-Site Power. From codes and standards, emerging technologies, best practices and education to industry trends, *POWERLINE* Magazine is the BEST vehicle to reach thousands in the Industry, with a targeted approach and vehicle.

Published quarterly, *POWERLINE* is the only magazine that thoroughly and exclusively covers On-Site Power, electrical generation or any method of producing power at the site in which it is generated. No other publication can match *POWERLINE* for its focus on On-Site Power.

If you sell products or services in this constantly expanding Industry, *POWERLINE* will deliver your advertising message to the key decision-makers you want to reach!

Our readership includes Manufacturers, Distributor/Dealers, Manufacturer's Representatives, Consulting and Specifying Engineers, Facility Managers, Service Firms, and end-users around the world who make, sell, distribute, and use generators, engines, switchgear, controls, voltage regulators, governors, and related products and services!

Every issue of *POWERLINE* includes important articles covering diverse industry issues, such as international markets, contracts, financing, trade agreements and more. Technical and "case studies educate readers about emerging technologies and commonly misunderstood applications. In addition, regular columns on industry codes and standards, news from Europe, manufacturer's representative issues, industry events and other compelling news keeps our readers engaged and informed year after year.

The EGSA member Job Bank is also a great industry resource for members and job applicants alike!

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Powerline Readers are...

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Submit Your On-Site Power Article!

POWERLINE Magazine is continually seeking feature articles (1,500 - 2,500 words) addressing any one of the many issues pertinent to On-Site electrical generating systems and equipment. To be considered, please e-mail a title, brief summary and highlights of your article to the Editor, Nathan Harris via **n.harris@EGSA.org**.

POWERLINE

the Official Publication of the Electrical Generating Systems Association (EGSA)

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2024

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Full Page *Bleed Size* *Trim Size*	8.625" x 11.125" 8.375" x 10.875"	$1,250 *B&W* $2,220 *4-Color*	$1,100 *B&W* $2,000 *4-Color*	$1,350 *B&W* $2,425 *4-Color*	$1,250 *B&W* $2,220 *4-Color*
1/2 Page *Horizontal* *Vertical*	7.375" x 5" 3.687" x 10"	$800 *B&W* $1,770 *4-Color*	$700 *B&W* $1,600 *4-Color*	$900 *B&W* $1,975 *4-Color*	$800 *B&W* $1,770 *4-Color*
1/4 Page	3.687" x 5"	$475 *B&W* $1,445 *4-Color*	$410 *B&W* $1,310 *4-Color*	$525 *B&W* $1,600 *4-Color*	$475 *B&W* $1,445 *4-Color*

EGSA Electrical Generating Systems Association

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In the event of cancellation of a multiple-month advertising space order prior to the final issue of the contract, the advertiser agrees to repay EGSA any discounts granted for multiple insertions. All cancellations must be received in writing prior to the advertising sales deadline.

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MECHANICAL REQUIREMENTS
Electronic files are required. Materials may be submitted as high-resolution CMYK Adobe Acrobat files with embedded fonts. All full-page ads should be submitted at bleed size with 1/8" bleed included. For additional information, e-mail Marc Charon at m.charon@EGSA.org

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**We will do our best to honor placement requests, but reserve the right to decide placement.*

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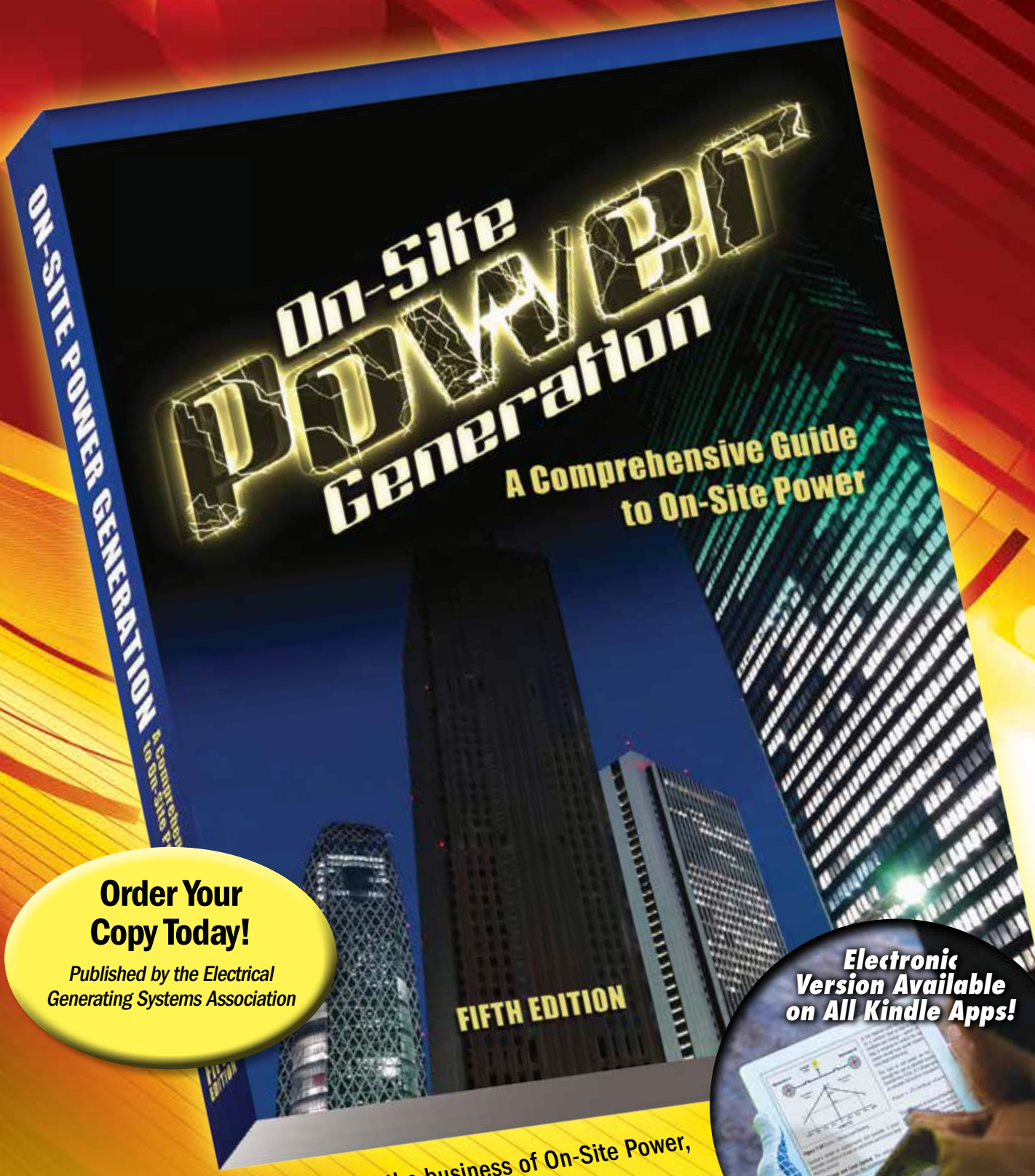

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