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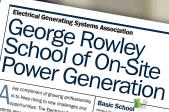
# **INTERVIEW WITH OUR 2016 TECHNICIAN OF THE YEAR** DAVE

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**Modern Power Systems** 

- EGSA Committees in Action (2016 and Beyond)!
- Preventive Measures are Required with ULSD
- How do Investors See the On-Site Power Industry?
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# **EVENTS CALENDAR**

#### Conferences

#### EGSA 2017 Spring Conference

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EGSA's Annual Spring Conference features educational sessions on a broad range of issues impacting the On-Site Power Industry. More information will be available at *www.EGSA.org* or by calling (561) 750-5575.

#### EGSA 2017 Fall Conference

September 17-19, 2017; Minneapolis, MN

EGSA's Annual Fall Conference features educational sessions on a broad range of issues impacting the On-Site Power Industry. More information will be available at *www.EGSA.org* or by calling (561) 750-5575.

#### **Industry Trade Shows**

#### **POWER-GEN International 2017**

December 5-7, 2017; Las Vegas, NV

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#### EGSA 2017 George Rowley Schools of On-Site Power Generation



For information, visit *www.EGSA.org* or call (561) 750-5575.

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# FROM THE TOP



Bob Hafich 2016 EGSA President bob.hafich@ emergencysystems-inc.com

# The Right Person for the Job

As we head into the final days of 2016, I have been reflecting upon my term as 2016 EGSA President. Once I began serving on the EGSA Board of Directors, I felt that sense of commitment to the causes that we, as an Association have embarked upon during my tenure. Prior to joining the Board though, I remember asking myself how I might make a difference.

When you become a part of the EGSA Board of Directors there is a personal commitment, but there is also an employer commitment as well. In my case, or in my brother Joe's case (who is also very active in the organization) the buck stops here. In the case of several of my peers on the Board, an employer must make that commitment also, either for the 3-year term on the Board of Directors or the 5-year term on the Executive Board as an Officer on the Board.

I was also fortunate to have worked on multiple programs on behalf of EGSA before I began my leadership years. I was the recipient of great coaching and mentoring along the way. I have had more than a handful of superior role models that showed me what a great leader in our Association must do.

Leading up to my years on the Board, there were many opportunities that presented themselves for me to get involved. (From email solicitations to former leaders asking for volunteers, I feel good about the years I served in the trenches.) It was that hard work and dedication which I put in, that enabled me to rise where I have. I also gained personal satisfaction from completing several tasks that took me out of my comfort zone like public speaking. I never thought that I would be able to stand up and speak in front of over 300 people at a conference. This position has grown me in ways that I never thought possible and I am so thankful for it.

I guess what I am saying is that no matter what gets you involved in being an active member of our Association, there are leadership paths that you should not overlook or at least investigate. Did I ever think back in the '90s that I would be a leader in this great organization? Absolutely not. I did not, but the more value myself and our company got out of it, the more I wanted to put into it. Because of this, I became well-versed on EGSA programs, our culture and wanted to be included in the planning of the organization's future. I had the drive to make it better,

which brings me to the header, **"The Right Person for the Job."** I think that all of us have leadership qualities within ourselves. When asked, would you answer the call? I know many of you would. If you saw a path that you wanted to go down, would you go? Again, I know many of you would. Let us help you answer that call and guide you down that path. We are always looking for people to help with the heavy lifting!

#### Do You Have What It Takes?

The "**Right Person for the Job**" should start by visiting our EGSA website and examining the leadership pages. There are specific and transparent requirements of exact qualifications to be nominated for the different leadership roles. EGSA also tracks all of our valuable member contributions in real time at the same area of the site so that you can see what everyone is doing. Staff also puts out the March/April *Powerline* Magazine issue annually that puts this living document into print.

From my days as an officer on the Membership Committee to the volunteer work on behalf of the EGSA Technician Certification, the programs that I have I spent time on truly made me feel connected to this great group of member companies and people. The work has also promoted long lasting value for the EGSA name, my name, and our company name. To consider that several of these programs have been launched during my tenure in the Association makes me feel very proud.

EGSA is responsible for a great legacy within our industry. Our Rowley Schools, our Technician Certification exam and study guide, and our education grants and scholarships are just to name a few. Now we are leading the charge again on load banking certification, so stay tuned for more as the newly formed sub-committee takes a run at following the same path that we did for the Journeyman and Apprentice exams and study guides which includes a DACUM panel. A strong committee to develop the process is also underway. (For more on this subject, see the committee's article in this issue of *Powerline*).

So search yourself, dig deep, and if you think you have the depth within you to be a future leader in EGSA, then let's talk.

# EDUCATION



Michael Pope EGSA Director of Education m.pope@EGSA.org

# Who, Where and When.

The George Rowley Schools of On-Site Power Generation are classroom courses, separated into modules covering the various components of an electrical generating system. Each of these important modules is led by instructors that are experts in their field to cover the theory and practice of operation of these components. Each school is always just a bit different, as there is the added bonus of the exchange of ideas and information between the instructors and class, increasing the learning and knowledge retention.

#### The Basic Rowley School is perfect ...

- for managers/supervisors who want to ensure their staff have the same basic knowledge.
- for project and application engineers, sales, marketing, parts and service and administration staff.
- for facility managers interested in learning more about the equipment under their control
- for folks entering On-Site Power Generation who need a great overview of the technologies that they will encounter during their career.
- for those who may be experienced in some areas of power generation but recognize their need for knowledge in other areas – basic electricity, voltage regulation, bids and specifications or transfer switches, for example.
- for service and sales personnel preparing to take the Apprentice Level EGSA Certification test.

# The Advanced Rowley School is perfect for folks ...

- who have attended a Basic Rowley School.
- who have a minimum of 3 years' experience in On-Site Power Generation and wish to take their knowledge to a higher level.
- such as project, design and application engineers, service personnel and technicians preparing to take the Journeyman Level EGSA Certification test.
- with licenses and the need to gain CEUs.

We do not recommend the Advanced Rowley School for people that do not have a good working

knowledge of electrical systems for generator sets.

All Rowley School attendees receive a copy of the acclaimed EGSA reference book **On-Site Power Generation: A Comprehensive Guide to On-Site Power**, generally referred to as the "bible" of the industry. This book will be useful throughout their career. They also receive a certificate of attendance and PDF copy of each module presentation on a USB at the conclusion of the course.

#### Location, Location, Location

When EGSA first offered On-Site Power Generation Schools (at about the time when Moby Dick was still a minnow), most of them were held at the same location in Florida. After 8 schools there, some of the instructors were getting tired of traveling to Florida, so it was decided to have them at different locations around the country. EGSA has carried on this way now for almost 25 years and despite our best meeting planning efforts, inevitably, surprises are sometimes lurking in front of, or behind, the hotel's automatic sliding entrance door, such as an expensive taxi ride from the airport, no restaurants within easy walking distance, etc.

During 2017, we decided to try a new approach and see whether our members will appreciate the change. With the exception of the December school (held in conjunction with POWER-GEN International) all Rowley Schools will be held in Charlotte, NC.

Charlotte was selected for a number of reasons. First, Charlotte (CLT) is a major airline hub that is served by Southwest, United, Delta, American and Jet Blue. While we recognize that a trip to Charlotte may require longer travel times from some locations in North America, it doesn't necessarily translate to more expensive travel costs. For example, of 7 random airports that I checked across the country, round trip fares to Charlotte during February, 2017 ranged from \$239 to \$431 (Orange County). Seattle, Minneapolis and Midway were all about \$360; everyone that travels knows there is no identifiable logic in airline pricing!

#### On the plus side of this single location:

- Our June school was at this location; it has a good meeting room, AV equipment and very helpful staff
- Complementary airport shuttle service
- Greater negotiating power for room rates and other concessions

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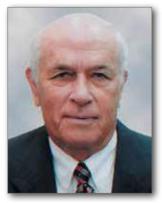
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Herb Whittall EGSA Technical Advisor HWhittall@comcast.net

# **Codes & Standards Update**

The U. S. Consumer Product Safety Commission Staff (CPSC) has made a recommendation for a proposed rulemaking to address the carbon monoxide (CO) poisoning hazard associated with portable generator sets. You can view this proposal by reviewing this link: *https//www. cpsc.gov/s3fs-public/Proposed Rule Safety Standard for Portable generators October 5 2016.pdf* 

UL 1778 Ed. 5 Uninterruptible Power Systems is being harmonized with the related Canadian Standard. Voting for this harmonization closed on October 17. The results were not made available as of the writing of this article, but in my opinion, it probably was accepted. More to follow on this.

UL has made a personnel change. Derrick Martin is now Project Manager for UL 231 – Standard for Power Outlets and UL 6200 – Outline of Investigation for Controls for Stationary Engine Driven Assemblies. He can be reached at *derrick.l.martin@ul.com.* 

UL 231 recently published some changes to the following articles: 5.7.2 revised "Extra-Duty" Outlet Box Hoods, 8.2.8 Component Accessibility, 8.2.11 Use of "Type WR" Receptacles, 35.73 Corrections to Clause References and the Addition of "Loop Feed Current Rating" in new section 3.6.1 and 32.3 and revising 10.1.9.

UL 6200 did not get enough positive votes to be approved. As a side note, UL 6200 was the subject of intense and somewhat negative discussion at the Fall Conference meeting of our UL 2200 Working Group that met on that Sunday from 11am to 2 pm (during the Conference).

In the NEC Connect news from NFPA, Jeff Sargent (NFPA) points out 5 new Articles that will appear in the 2017 Edition of the National Electric Code (NEC). The NEC has been completely revised and renumbered in several places. The new articles are: Article 425 – Fixed Resistance and Electrode Process Heating Equipment; Article 691 – Large Scale Photovoltaic (PV) Electric Supply Stations; Article 706 - Energy Storage Systems; Article 710 – Stand Alone Systems and Article 712 – Direct Current Microgrid.

These new articles are included, as the world electric systems are changing due to new technology and new uses.

The September issue of *Diesel Progress* has an article (Page 93) by Art Aiello titled "Three Part Harmony". The article is related to Europeans approving Stage 5 emission standards for diesel engines and whether the US will follow suit. Essentially to meet stage 5, all engine manufacturers will need to fit Particulate filters on their engines. From what he says, California seems to think that their emission standards already meet those contained in European Stage 5 and that the Europeans are just now catching up to their standards. It is important that all the world harmonize their standards to keep the costs down as low as possible for the engine manufacturers.

As you may recall in one of my previous articles, I was told several years ago by Mercedes Benz (USA), that if they could make their SUV to one standard for use worldwide, they could reduce their cost per car by \$1,000.

The ISO released a 16 page document titled "Changes to the ISO Directives." They went as far as documenting on each page what was changed for that particular Directive (so you do not have to compare the new document with the old to find the changes). It would be helpful if other organizations did the same when they made revisions to a document.

The ISO has been active the last few months. TC 70 (which makes standards concerning reciprocating and rotary displacement internal combustion engines) held a meeting in China in October. They list 40 members of which 12, including the USA, are voting members. The US vote is done through SAE and I am a member of that committee and vote. Interestingly, in a recent poll, none of the voting member countries of TC 70 had made ISO standards a requirement, however they do show up in bid specs.

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# EGSA Committees in Action (2016 and Beyond)!

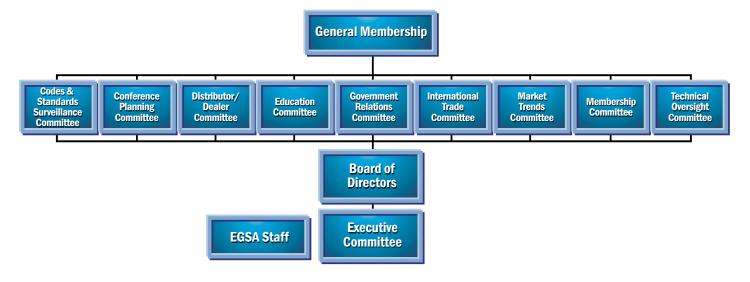
We may have said it many times before, but when it comes to analyzing the importance of EGSA Committees, you need not look any further than a visual review of the EGSA organizational chart. In our hierarchy, these EGSA Committees are ranked almost at the top of the chart, only superseded by the general membership.

In 2015, we also learned during our 50th anniversary Time Capsule series (both the printed interviews and EGSA YouTube video segments) that some of the best EGSA Member memoirs recorded by Staff have something to do with the amount of work that got accomplished, or a goal that was attained while working on (or for) a particular EGSA Committee. Committees are also integral in branding EGSA outside of the membership.

In 2016, a great amount of work has been accomplished at the Committee level. In both San Antonio and Sacramento, strides have been made in multiple areas. Committee initiatives are extremely important to the Association, as this is where a lot of the heavy lifting gets done.

One of our upcoming speakers for Spring 2017 mentioned to Staff that while he had never been to an EGSA Conference, that he had indeed been touched by EGSA in a significant way. You see, during his first year in power generation, his employer saw the value of sending him to an EGSA school. He verbally gave EGSA the credit for attracting and retaining him to our industry without ever touching him again for 16 years! That's some powerful stuff....and all because the Education Committee took the time to plan and execute a Basic and Advanced School module under the leadership of the EGSA Board, our Executive Director and George Rowley, our first Director of Education.

We hope this article will cause you to act! Get involved with one of our EGSA Committees if you aren't already. We can certainly use the extra hands. The work will be rewarding and it



#### EGSA COMMITTEES



will serve you well too. Our 2013 EGSA President, Deb Laurents, summed it up succinctly, "I think it is very telling that the EGSA Board of Directors and our Executive Board are strategically placed at the bottom of the EGSA org chart. Each of the committees is evenly placed in the center, as if they are a conduit between the general membership and its leadership."

This article is a brief recap of recent committee efforts for the 2016 calendar year. Let us know how we can help you get involved. With that, here's what's cooking for the remaining part of 2016 and beyond!

#### Codes & Standards Surveillance Committee (CS)

Codes & Standards represents EGSA and its members' interests on select national and international industry codes and standards committees and reports back to the membership through *Powerline Magazine*, Committee meetings, Action Alerts and e-mail blasts.

#### The Committee also:

- Develops recommendations and provides action regarding industry codes and standards development and review by request and as needed;
- Surveys the membership and other industry professionals to determine the applicable standards it should monitor;
- Provides the Association with a platform from which it may develop Recommended Practices for the proper application of codes and standards within the industry; and
- Educates EGSA members on standards, their application and interpretation.

From an organizational standpoint, there will not be any changes to the Codes & Standards Surveillance Committee in 2017. The 2016 Spring Conference represents the first for the current CS leadership team and will run through the Fall of 2017. However, beginning with the Spring 2017, the committee will be seeking a new Secretary to assume that position in the Spring of 2018 for a two-year commitment.

**John Svendsen** (*Woodward, Inc.*), Chair of the Committee had this to say, "Participating in the Codes & Standards Committee is an excellent opportunity to have involvement for your company on standards that could be very pertinent to your business. Please take the opportunity to learn and grow within our industry in terms of knowledge and relationships and give our committee a try!

In addition to the reporting and updates on new or changing industry standards, at each committee meeting there is usually a technical speaker that focuses on a topic relevant to industry issues. During last Fall's Conference, Dr. Karim, the Supervisor of the Structural Support Unit at the California Office of Statewide Health Planning and Development (OSHPD), which handles seismic certification approval for OSHPD, presented on Special Seismic Certification. We are also planning to have technical speakers at the 2017 conferences too."

#### **Conference Planning Committee (CP)**

The Conference Planning Committee is making big changes in 2017 as Committee Chair and Conference Emcee, **Charlie Habic** (*Gillette Generators, Inc.*) will take on the role of EGSA President next year. This makes for an exciting year, with **Hal Walls** (*Clariant Corp. & EGSA Board*) taking on the Chair and Emcee position beginning in Kissimmee at our 2017 Spring Conference. "Those fancy Italian loafers are going to be hard shoes to fill, but I have my game face on," jokes Walls.

The additional members of the Conference Planning Committee's leadership team will be **Clement Feng** (*Generac Power Systems*) as Vice Chair and **Tom Black** (ASCO Power Technologies & EGSA Director) as Secretary.

"One of the first significant changes for 2017 will be the location of our Spring Conference," continues Walls, "as EGSA Staff was able to negotiate a great rate with the Gaylord Palms Hotel in Kissimmee. This is the first time in over 5 years that EGSA has not met at a Hyatt property."

In Sacramento, thanks to EGSA Member, **Andy Briggs** (*Pow-er Telematics, Inc.*), the Committee selected **"Power Your Imagi-nation"** as the theme for our Spring event. The committee has



also confirmed several of the 2017 spring speakers, with the biggest catch being **Jon Dorenbos** of Philadelphia Eagles fame. Most recently - Jon absolutely "wowed" America with his mindblowing and inspirational performances on NBC's hit television show - *America's Got Talent*, where Jon made it to the finals and placed third overall in the competition amongst tens of thousands of competitors.

Our Tuesday keynote is Steve Rizzo, the Attitude Adjuster. A Speaker's Hall of Fame speaker, who is also a Showtime Network all-star comedian, Steve brings his captivating ability to engage people with laughter as he challenges them to shift their focus and way of thinking to discover greater enthusiasm, increased productivity and new levels of success.

"Our committee has a lot on its plate, some excellent EGSA Member speakers up our sleeve and we are working hard to develop the perfect program for our next conference. Stay tuned!" adds Walls.

#### **Distributor Dealer Committee (DD)**

The Distributor Dealer (DD) Committee serves the generator service and sales side of our industry. The committee's main goal is to deliver content to industry professionals that promote best practices and programs to meet the current needs and challenges facing generator dealers and distributors.

Our Committee Chair is Lyndon Risser (DynaTech Generators) Vice Chair, Kurt Summers (Austin Generator Service and EGSA Director), Secretary, Chad Youkers (Sunbelt Transformer, LTD and TAP Chair) Al Powers (Powers Generator and TOYA Chair), Bob Piske (Arizona Generator Technology, EGSA Director, and DD Board Liaison).

EGSA industry volunteers like these are from across the country (in many cases competitors) and work together every year to bring value to EGSA membership especially our EGSA DD Members. "The common goal of building upon our industry is the glue to those that want to make a difference. Our Committee needs and wants everyone's participation," says Bob Piske (former DD Chair). Current Chair, Lyndon Risser, had this to say, "Attending the conferences is where it starts, but serving on a working group that creates real value for all current and future EGSA members is where the action is!"

Vendors serving this committee have found the meetings to be a valuable platform as well. "As a Manufacturing Member and long-time supporter of EGSA, our company takes great pride in supporting EGSA and the DD Committee" says Chad Youkers. "There is a wealth of networking opportunities that EGSA



provides and one of the key attributes that makes EGSA so successful are the committees. Once you find the committee that 'speaks' to you, it's easy to get involved and give back. 'It's a case of 'the more you give, the more you get' and we've found the relationships and networking possibilities afforded at the Spring and Fall Conferences, as well as POWER-GEN Intl. to be invaluable in the growth of our business." adds Chad. "I can think of no better organization we support that allows one to see so many customers and potential customers in a concentrated area."

"The need for qualified technicians has always been a hot topic and will be key to our industry's success in the future. The DD Committee created the Technician of the Year Award (TOYA) as tool for the membership to promote, measure and reward our best technicians. The fourth annual TOYA will be presented in the Fall of 2017. EGSA Member companies from all over the country submit their top technicians as candidates. Judges thoughtfully evaluate these through an anonymous process that results in a top score and a clear winner. This creates a national platform benefiting the winning technician, his family and their employer. Our industry also benefits by showcasing our best people, which ultimately attracts new talent for the outstanding career opportunities in power generation. We honor our first responders and open the door for others to join us!" adds Al Powers, 2016 TOYA Chair.

The most recent working group program is our Technician Apprenticeship Program (TAP). This program will leverage the EGSA platform to channel potential technicians from community colleges and trade schools directly to our members. A future goal of this program is to create an online tool that will showcase on-site power's attractive career paths within our industry. This new program clearly display's EGSA's commitment to being "THE" Association for our Industry.

There's more work to be done. "The value delivered to EGSA Members today is exceptional," says Kurt Summers. "The leadership of our Board of Directors and Staff over the past few years has cast a vision for innovation, relevance and excellence. It's a great time to be an active member of EGSA! It's a perfect way to get involved in the DD Committee."

#### **Education Committee**

**Tom Wein** (*Generac Power Systems & EGSA Director*) has served the Education Committee as Chair for 3 years and is now passing the torch to **Richard Knittel** (*Prime Power Services, Inc.*) who has been an active member since 2011 and has a strong technician background. Most recently, our readers may recall that Richard spearheaded the EGSA TOYA judging process, as our first Chair of that working group. He was very engaged during the process, fully vetting the scoring system with our members during the DD Committee that took place during two of our association conferences (2013 and 14).

"Richard is a great leader, has a great respect for education programs, is responsive to the Board and the needs of the Members and will stay the course. He will continue to motivate and steer the Education Committee into the next level of accomplishments," reports Tom Wein, who will now take over as Chair for the EGSA Technician Certification Committee.

"The Education Committee has many moving parts, some might even view a recent venture as a "succession," as a portion



of the Committee is breaking off from the main group to continue the work conducted thus far to develop an EGSA Loadbank Certification program."

Tom continues "So far, we have completed the following tasks, approved structure and assigned members to the committee, developed a rough draft of learning outcomes that is being vetted, the EGSA Board approved funding for a certification program by a third party, the DACUM (which stands for Developing a Curriculum) panel has been identified and approved with safety being a top priority."

This initiative is moving forward, led by the recently appointed Chair, **Paul Feld** (*Penn Power Systems and EGSA Director*), along with **Scott Anderson** (*Simplex, Inc*), **Richard Knittel, Martin Peko** (*Load Banks Direct, LLC*), **Al Powers** (*Powers Generator Service, LLC*), **Mark Prevoznick** (*ASCO Power Technologies*) and **Tom Wein.** 

Join the Education Committee in Kissimmee, they would love to get you engaged in one of our many programs that serve the industry!

#### **Government Relations Committee (GR)**

The Government Relations Committee is experiencing a changing of the guard in 2017, with **Mazen Badr** (*PD Systems*) stepping into the role of Chair. This change was recommended by **Dave Stringer** (*DEIF, Inc & EGSA Director*) and approved by 2016 EGSA President **Bob Hafich** (*Emergency Systems Service Co.*).

The committee will keep its focus on microgrids and renewables for both the government (such as the Dept. of Defense) and regional municipalities.

Over the last few conferences, the attendance of the GR Committee has steadily increased. This is great news, considering the lack of government members in attendance due to recent funding issues.

Overall, the committee maintained and offered exciting interest in doing business with the government. New opportunities were limited and in general the microgrid discussions took center stage during the committee meeting in Sacramento. Badr had this to add, "As I take over the Chair role, I will do my best to manage the fear of doing business with DOD customers, help our committee members identify opportunities and showcase what is out there for our Members, the majority of whom have never done business with the DOD. Ways of accomplishing this will be addressed in the next few meetings and if possible, government personnel will attend and join in this important industry topic."

#### International Trade Committee (IT)

"For EGSA Member companies looking to expand their business outside the borders of the United States, or if you are already conducting business around the world, this is the committee for you," says **David Vennie** (Worldwide Power Products & Chair of the International Trade Committee).

"The International Trade Committee helps provide Members with a 'think tank' for moving your business from local to global. The committee focuses on global market activity to keep a pulse on power generation around the globe.

The committee leadership, with assistance from outside perspectives and speakers, review active growth areas around the globe for potential focus and expansions.

We look at US government programs such as blue key to help with expansions. We review Internet, Google, and other on-line options to expand without building brick and mortar. We discuss the best electric power trade shows around the globe, and we even get to basics as far as international traveling hints and tricks to the trade," Vennie continues.

Overall, the committee generates great discussions related to international business. If you (or the firm you work for) have any involvement in international business, this EGSA Committee is the place for you.

#### Market Trends Committee (MT)

The Market Trends Committee has finished the 2016 year as strong as ever, with **John Hoeft** (*GE Power*) completing his 3-year term as Chair and "passing the gavel" to **Joe Zirnhelt** (*Power Systems Research*), who has been active in committee leadership, serving most recently as Vice Chair of the Committee. **Justin McMahon** (*Leroy Somer/Kato Engineering and EGSA BOD*) is also moving through the chairs, advancing from Secretary to Vice Chair with **Chris Nagle** (*Dresser-Rand, A Siemens Business*) selected as the incoming Secretary.

"The Market Trends Committee is thankful for the leadership under John Hoeft over the past 3 years. During his tenure, the Committee has grown significantly in terms of regular attendance by creating meetings that offer an interesting agenda where attendees feel engaged to 'be involved' in furthering committee objectives.

As an example of the committee's service to the association, they have established the annual Pulse Survey which is administered before each fall conference and provides valuable insights for members concerning the business climate for on-site power generation" reports new Chair, Joe Zirnhelt.



#### EGSA COMMITTEES

In 2016, the committee hosted intriguing committee meetings that were both informative and maximized member participation.

# Spring 2016 – In San Antonio we were fortunate to have 3 guest speakers including:

**Dave Branyon** (*Southwest Research Institute*) spoke on the subject of Advancements in Gas and Dual Fuel Engine Technology.

**Karl Schmid** (*John Deere Power Systems*) and **Keith Burg** (*MTU Onsite Energy*) each offered their perspectives on market trends in the area of power generation for agricultural applica-



#### tions.

We brought a new meeting format to the Fall 2016 Conference in Sacramento, where we facilitated 4 breakout groups to discuss topics and then came back together as a committee and tasked the group leaders to present the key takeaways.

The format was successful in that it fostered knowledge sharing amongst all meeting participants. The following were the areas of focus for the small groups along with the small group leaders:

- Disruptive Technologies & Incentives led by Mike Sanford (Cummins Power Generation)
- Peak Shaving Management Issues led by Hans Melberg (IEA)
- Market Opportunities for Onsite Power led by **Bob Apple** (*Volvo Penta*) and **Don Kujawski** (*Murphy by Enovation Controls*)
- Fuel Quality led by Brad Holmes (Clay & Bailey Mfg. Co.)

The Market Trends Committee looks forward to continued success in 2017. They encourage OEMs, distributors and consultants that want to better understand the market and new opportunities to consider attending the meetings and becoming involved in this committee. The dialog to provide insight and create market connections to further develop potential business relationships is a unique aspect that Market Trends brings to the table and will provide value to each attendee's EGSA experience.

#### **Membership Committee**

The Membership Committee revived of one of our "tried and true methods" of gaining new EGSA Members in 2016, with a new spin on an old tactic! In Sacramento, the Committee rolled out the 2016-2017 EGSA Membership Drive.

"Not since 2012 have we attempted one of these efforts and we are expecting some great results. We are offering superior 'drive' prizes to do what we do best, add value to the Association by signing new members," reported **Walter Petty** (*Atlantic Power Solutions & Membership Chair.*)

Beginning on September 12, 2016 and continuing through to our first day of the EGSA general session at the 2017 EGSA Spring Conference (March 20, 2017), EGSA Members will get out there and compete to win by signing new EGSA Members.

We are serious about growing the membership of our organization in the right way, and the BEST way to effectively add good members to the Association is through word-of-mouth and peer-to-peer interaction.

#### The 2016-2017 Membership Drive Grand Prize Package includes:

- One complimentary EGSA Registration for Fall 2017 (estimated value \$555)
- A \$250 hotel credit in the Fall (to be redeemed during our Fall Conference next year from Sept 17th-19th, 2017 at the Hyatt Regency Minneapolis, MN)
- A \$500 Richard Petty Driving Experience Gift card This part of the gift provides the winner great flexibility to customize the Richard Petty Driving Experience. Here's a list of tracks all over North America where you can redeem this fabulous prize purse for signing the most EGSA New Members: *www.drivepetty.com/race-tracks*

It's a purse worth over \$1,300 for doing what you already do best, sharing information with your colleagues!

As our industry evolves, EGSA needs to grow too... not only to widen our circle, but to also extend our reach in certain membership categories such as consulting & specifying engineers, military members and technician member categories.

The last time we attempted this in 2012, we gained 24 new members, several of which have become very active and hold leadership roles in the Association! It was well worth the effort and association branding.

#### Load Bank Certification Sub-Committee (LB)

**Paul Feld** (*Penn Power Systems & EGSA Director*) has been a long-standing member of the Education Committee. He presented an idea about establishing a Load Bank Training Certification back in 2015 to supplement EGSA's Rowley schools.

The certification would consist of classroom and hands-on training, with an exam that would need to be passed satisfactorily in order to achieve certification. The motivation for this training was two-fold; establish a world-class certification to educate technicians, and to train them to use the best safety measures at all times. As many in our industry will agree, executing a Load bank test is a complex process, as no two are ever the same. They also present safety concerns because of the complexity. The goal of this ad hoc-committee is to develop the curriculum.

After a couple of false starts, the group decided to seek advice from Ferris State University (FSU) on how to move forward. It was determined that the best path was to use the same path we used to develop successful the EGSA Technician Certification. First, a DACUM panel will to create the questions that will be used to drive the curriculum.

The Load Bank Committee is currently made up with Paul as Chair, **Richard Knittel** (*Prime Power Services, Inc.*) - Vice Chair, **Bob Piske** (*Arizona Generator Technology, Inc. & EGSA Director*) - Secretary, **Michael Pope** (*EGSA*) - Board Liaison, **Tom Wein** (*Generac Power Systems & EGSA Director*), **Al Powers** (*Powers Generator Services, LLC*) , **Dave Pfister** (*Simplex, Inc*), **Mark Prevoznik** (*ASCO Power Technologies*) and **Martin Peko** (*Load Banks Direct, LLC*) engaged FSU to provide a proposal to create the questions.

Paul Feld had this to report at press time, "After several discussions, a decision was made to accept the FSU proposal and move forward with the DACUM panel. Our expectation was to meet in November with the panel to hammer out the questions. The questions are being developed by our industry experts (several some from the Committee), from load bank manufacturers and others from the technician side of things. We have postponed the DACUM panel until February 2017 and once all components come together, member companies will have access to this professional training with certification. We are certain that this effort will elevate and separate our member companies and their technicians from the fray. Customers embrace any level of certification that ensures that their equipment, regardless of application, is well maintained and always in a state of readiness, 'certified to perform as designed.' We need EGSA member support to make this happen."

#### **Technical Oversight Committee (TOC)**

Thought EGSA always has the same committees?... introducing our newest committee – Technical Oversight Committee (TOC)

**Brian Ponstein** (*MTU Onsite Energy Corp.*) saw a real advantage of EGSA Members joining forces to fill voids within our member organization in a technical fashion. It all began when

he and **Dan Bigelow** (*Reverso Pumps*) discussed the topic of fuel, mainly biodiesel and reoccurring issues seen in our industry for some time. They discussed how both of their organizations have written articles on this subject, but lamented that neither of them felt they gave the subject the proper justice due to organizational limitations and brand-specific measures. The idea of using EGSA as a way to create video content and publish topics together using EGSA as the platform was born.

Both Brian and Dan knew this idea had to get the proper attention from the right individuals at EGSA to get this committee underway. As we know, typically if someone comes up with a good idea, they become the keeper of the flame. Both Brian and Dan were more than willing and actually turned down other committee leadership positions to ensure that this new committee takes off.

Before the Spring Conference in Sacramento, Brian and Dan had several discussions with other EGSA members, as well as Staff about using industry experts to create articles and videos on topics relevant to our industry.

While many member companies write articles on topics, they can be limited on what they can write based upon what a specific organization does.... where adding other member companies into the mix makes for a more well-rounded article to address the entire picture. Content will be presented in a way that will be informative to sales professionals, business owners, the engineering community and even lawmakers.

Brian and Dan hit the Spring Conference hard by creating awareness within other key committees like Conference Planning, Distributor Dealer and the Education Committees. The idea and concept was accepted favorably and a new EGSA committee was formed. Brian and Dan setup the building blocks ahead of time to give the EGSA Board a full understanding of why this committee was needed and what it will do. The EGSA Staff also sees the value in how this committee will bring a new element to the Association.

Since this is a newly formed committee, it is also a great opportunity to increase your involvement within EGSA if you are currently looking for something to be involved in or just have an interest. This group will be very active in writing articles and publishing videos on topics related EGSA's members. Plan on attending the Spring Conference TOC Meeting in Kissimmee to learn more about how to get involved or contact us now! Bring your ideas to this meeting, as the group is eager to hear them.



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Another exciting item! The TOC has already begun work. TOC leadership is working with EGSA Staff to secure proper resources to create, host and distribute deliverables. The first article is underway, along with the scripting of our first video recording session (tentatively scheduled at POWER-GEN International). Stay tuned via EGSA's YouTube channel, *Powerline* Magazine, LinkedIn and website for links to these documents in 2017.

#### **Codes & Standards Working Groups**

"Before I report on the UL 2200 Working Group, I'd also like to add that Columbia Southern University is offering our members a 10% discount on pursuing a college education," reports **Steve Sappington** (*Caterpillar, Inc. and EGSA Director*), and with that, our Chair of the UL 2200 Working Group begins.

"The UL 2200 Working Group has been encouraged and motivated by UL to hold itself accountable for making the UL 2200 Standard for Safety what it needs to be for our industry. In other words, UL told us that the Standard is ours to make our own. Our group discusses, throughout the year all of the new and current methods and the materials used, to construct an engine generator assembly and develop change proposals to ensure UL 2200 remains aligned with those methods and materials. Safety is paramount!

Two-thirds or more of the UL 2200 Standard Technical Panel (STP) members support and attend our EGSA UL 2200 Working Group meetings. Therefore, UL 2200 change proposals developed by EGSA will likely be accepted when the proposal is voted upon by the entire STP.

UL representatives periodically attend our meetings to update us on internal activities pertinent to the UL 2200 Standard for Safety. At EGSA's 2016 Fall Conference, we learned that UL is harmonizing UL 2200 with Canadian requirements to develop a new Standard, ULC 2200. UL provided us with an overall review of the new standard and requested our group's feedback.

Professional relationships are formed in our working group and maintained throughout the year, during discussions with working group members and as a task force UL requested for us to form to improve gaseous fueled engine genset requirements.

Committees not only represent progress in our industry and organization, they are where change is explored and discussed. By participating in an EGSA Committee, you are not only helping with EGSA initiatives, you are enriching your career and representing your employer by using your voice in on-site power.

As with any business of significance, there will always be differing opinions and challenges in EGSA Committee work, but these outlets provide a unique position within onsite power to express those differences and come together to do great work." Sappington concludes.

#### How EGSA Committees are Organized

Each of our EGSA Committees typically has 4 active leadership roles to fill, while there are a few exceptions with our adhoc committees and working group(s). Three of these leadership opportunities (Chair, Vice Chair and Secretary) are perfect opportunities to explore leadership within EGSA or to rise in the ranks of members and aspire to an EGSA Board of Directors role.

The 4th leadership role on each committee is the Board Liaison. This person is typically appointed by the current President from our list of Board Members. This EGSA Board Member works as a conduit to report on committee activity that needs Board attention, approval or acknowledgement. The Board Liaison is an important component of each committee because since they sit in on the Board of Directors (BOD) meetings, they know what fellow BOD members expect them to bring forth before and after each committee meeting is held. This keeps everyone informed of the important work and can provide perfect updates at a moment's notice, as BOD meetings are held both before and after the committees meet!

The people who fill these committee leadership roles have, in most cases, worked diligently to get there. They have participated over time and been appointed (for 3-year terms) by the EGSA President.

For those members who go the additional mile after leadership in our EGSA Committees, many choose to advance and go into service on our Board of Directors. If you are interested in committee activity, we strongly urge you to select one or even two to attend when you register for the 2017 Spring or Fall Conferences. Feel free to also join our LinkedIN page, Electrical Generating Systems Association (EGSA), where the majority of our committees have a separate page where the members of that committee use this social media platform to communicate between meetings. Data Centers, Hospitals, Critical Care Centers, Nursing Homes, Grocery Stores, Climate-Controlled Storage Facilities, First Responder Facilities...

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# Preventive Measures are Required with ULSD

# Smart Fuel Management Can Prevent Shutdowns and Protect Equipment

#### By: R.J. Johansen, Fuel Management Services

Professionals in the on-site power industry are tuning in to the fuel quality challenges that have arrived with ultra low sulfur diesel fuel (ULSD) as well as the essential strategies for protecting power generation sites from fuel-related threats.

It was my privilege to deliver a presentation on fuel quality challenges and opportunities at the EGSA Fall Conference in Sacramento in September. The professionals in attendance seemed eager to learn about ULSD and how to manage the challenges that it presents. In follow-up discussions I have fielded many questions and heard a lot of stories about dif-

ferent fuel-related concerns and problems. It is exciting and satisfying to help service professionals learn more about fuel and develop profitable business practices that enhance their client relationships.

With several years of storing and using ULSD, on-site power professionals are becoming familiar with the

equipment problems and service interruptions that can result when fuel is inadequately managed. ULSD issues have been studied repeatedly, including an in-depth report by the U.S. Environmental Protection Agency published in 2016. (A summary of the report is available online at www.epa.gov/ust/ alternative-fuels-and-underground-storage-tanks-usts. The full report is also available for download.)

The EPA conducted research on 42 underground tanks storing diesel fuel and found that 83 percent exhibited moderate or severe corrosion of metal components inside the tank system. It also found that only 25 percent of the owners of those tanks were aware that they had a problem.

The EPA report confirmed what previous studies have shown: ULSD has substantially different fuel chemistry compared to the higher-sulfur fuels that we used to store for on-site power. Today's diesel is pushed hard during refining to increase the yield and remove the sulfur. It undergoes catalytic cracking and hydro-desulfurization. It is transferred repeatedly as it travels from the refinery to the storage tank, and each transfer can introduce contaminants such as ethanol and microorganisms.





*Top*: These 3 fuel samples exhibit the differences between good and poor quality diesel fuel.

*Middle Right:* Gum and Varnish formation on a fouling filter housing.

*Middle Left:* Here's an example of poor fuel samples directly pulled from a diesel generator tank.

Bottom: Dust particles from internal tank corrosion.





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1740 Eisenhower Drive | P.O. Box 5905 De Pere, WI 54115-5905 920-490-3250 | Fax 920-617-3308 | www.robinsonenclosures.com While the EPA stopped short of explaining the causation between specific fuel contamination issues and the problems it found in tanks and equipment, the report left no doubt that proactive steps are essential to prevent premature failure of

fuel storage vessels, metal tank components and fuel metering systems.

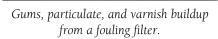
In addition to the contamination issues, ULSD also brings an increased risk of filter plugging, due largely to the fallout of particulates from the fuel and the build-up and/or release of sediments. These problems occur more frequently now, because ULSD has a greater affinity for moisture, and it carries water along for the ride. Water collects on fuel-wetted surfaces and serves as the electrolyte that allows corrosion to take place. Water also provides a habitat for microorganisms. Fuel tanks are better environments for microbes to grow now, because there is less sulfur, which used to act as a natural microbe inhibitor in diesel. The fuel also has reduced lubricity compared to highsulfur diesel.

Another set of complications comes with the biodiesel that is blended into many diesel loads. Biodiesel is an excellent drop-in fuel that improves diesel's environmental profile and can improve the price, but it also will make the fuel

more complex and less stable in storage, which increases the need for effective fuel quality management.

ULSD and bioblended ULSD are relatively new fuels, and there are new rules for handling them. Before you go running for the hills, let's look at a few easy ways we can fight these problems:

- Regularly monitor fuel, and remove any water that is present in storage tanks.
- Send fuel samples to a fuels laboratory as a matter of routine to test for stability, water, particulate, microbial life, and organic/inorganic contamination.



- Use additives that include film-forming amines that inhibit corrosion; an anti-microbial (dual phase); a demulsifier; and an organic dispersant. Make sure all these components are totally fuel soluble.
  - Filter the fuel and clean the tanks.

Housekeeping is more important than ever before. Fuel Management Services has been addressing diesel issues for over 60 years, and it has never been more important than now to start a preventative maintenance program to limit corrosion in tanks and components and minimize other fuel quality issues.

The industry is becoming more aware of this topic and now is the perfect opportunity to start educating your customers and employees on the issues we have been seeing. Offer better protection, and reassure your customers that with your help their emergency generator will not shut down at a critical time.

#### About The Author

Richard (RJ) Johansen is from Toms River, NJ. He works with Fuel Management Services and has been supporting the on-



site power industry with fuel quality expertise. He has been working in the oil and gas industry for 5 years, working in areas such as Saudi Arabia, Bahrain and Qatar and has managed projects on industrial pipelines in power plants, oil and gas refineries and corrosion prevention. By seeing the opportunity first hand with fuel changes RJ has continued a career in fuel analysis services and diesel fuel additives.

RJ has assisted many emergency power service departments with managing ultra-low sulfur diesel and is well-versed in fuel contamination, fuel additive chemistry, corrosion control for fuel in storage, as well as fuel distribution systems. He has also provided fuel quality solutions for utilities, diesel transportation, military and heating oil delivery.

# Interview With Our 2016 TOYA Winner, Dave Yuro

Dave Yuro went to Cedar Ridge High School for 4 years in Old Bridge, NJ. During his senior year, he participated in an industrial program and left school each day after lunch to go to work as a construction technician at a local cable company. Then, he graduated from Lincoln Tech for automotive and Diesel Technology. Dave sees great potential in the EGSA Technician Apprenticeship Program (TAP) that our Distributor Dealer community is working on currently, "I sincerely wish that our industry had more of a shadowing program. It is so much easier to show someone than tell someone when it comes to a generator technician's responsibilities," Dave

shares during his phone interview this month.

While Generator technicians are responsible for servicing, maintaining, selling parts and providing customer assurance, in our industry, they are also the representatives of our companies and usually one of the few people that actually have face-toface time with your customers.

Technical knowledge is respected and expected, but the ability to think and act under pressure is what separates elite technicians from the "shade tree" mechanic. Power Generation equipment is made up of sensitive and complex systems that require expertise to keep the power on. Many times, the systems that a technician installs and/or services can sometimes mean the difference between a life or death situation, making them our industry's "first responders."

On September 14th, EGSA and Modern Power Systems announced that Dave Yuro was named

the 2016 Technician of the Year Award (TOYA) winner at the EGSA Fall Conference in Sacramento, CA. Dave, his wife, along with the VP/GM of Modern Power Systems, John McClure, were all in attendance at the EGSA Fall Conference in Sacramento, CA to celebrate this industry accolade in its third year of being awarded.

"Dave was our third EGSA TOYA to be named since the program's inception. EGSA has been so proud to host this annual event, but our sponsors are what really make an impact on the award itself," shared Lyndon Risser, 2016 DD Chair. "Having a program like this where we can recognize our industry first responders has been rewarding and our sponsors have really stepped up each year to add the value that the program warrants. It has been such an honor for our committee to develop and work on each year."

Dave began his career in power generation by almost sheer accident. He was working as a lift truck mechanic, when one year, the company he was working for decided to downsize and disband the



**PORTRAIT OF A WINNER:** 

Our 2016 EGSA TOYA is

David Yuro of Modern Power

Systems, a 29-year power sys-

tems veteran, with more than

19 directly related to power

generation.

forklift business altogether. This created a series of layoffs and the company told everyone who worked in the forklift division of the business that they should begin looking for another job. His company ended up offering him a job in their power generation division, in what might have been considered a setback had things not turned out so well.

"It was actually an excellent move. I was already working as a mechanic, but working with forklifts is a completely different animal. First, there is a big learning curve for a power generation system. Also, if you have a forklift go down,

> there are typically a few others that can be used until you get the repair completed. With a generator, there's typically only one, so your time management and your ability to assess the situation before you make the service call are much more critical functions.

The typical client is also different. In power generation, your client is usually a high level manager. You have to be on your game and know the best way to fix the problem. The work environment is also much cleaner. Forklifts were not a clean work environment, as opposed to our

Marine/Yacht clients whom demanded a spotless work area. Over the years, I even kept white sneakers and a specific clean uniform in my truck to work on the boats," Dave adds.

Being flexible is definitely a plus in this industry. While some clients these days have remote monitoring systems, others still prefer to call Dave direct. "My office schedules the appointment, but most times, my customers call me directly with

the issues, so that I can start to diagnose the service call prior to going out. Simple time savers like knowing what to bring along on a call can save a second trip out," Dave adds.

"My average work week is about 60 hours. It can really be a rollercoaster during certain months and you have to be flexible. I can go a month without making a service call on a weekend, and then get three Saturdays of calls in a row. There are typically late night phone calls and off hours. Our territories are split and the response time is top priority. We have 20 techs now, when I started there were 4. We have grown tremendously in the years I have been at Modern. Most techs have been here for approximately 6 years and there are a few that have put in half that time. We have three EGSA Journeymen currently and 7 or 8 apprentice-level guys who are working toward the time in job needed (3 years) to take the Journeyman test. It is Modern's goal, as well as Generac's, to have all industrial technicians EGSA certified."

# **Questions from Our Members**

#### The following question was provided by Todd Vaughan, Kelly Generator & Equipment, Inc. - 2014 TOYA Winner

#### How did you come to be a generator technician, do you love what you do, and what brings you the most satisfaction (as it relates to generators)?

**David Yuro:** "I guess the short answer is solving tough problems. I enjoy being put to the test and when it's all over and resolved I get a great feeling of satisfaction. Also training is extremely gratifying. I really enjoy teaching the Generac Power Systems training classes in Bristol, PA"

#### The following question was provided by Sean Fallon, Cooper Electric Supply

#### Is there any issue you encounter that could be prevented with additional training for either the installing contractor or the end user?

**David Yuro:** "Natural Gas Plumbing issues...a lot of our natural gas startups cannot be completed as planned due to insufficient gas volume issues. I think training for the plumbing contractor would be a great help in this area."

#### The following question was provided by John Bentech, Dynatechgenerators.com

#### In emergency situations when the best of technicians bump up against proprietary controls, do you feel there is a need for a standardized diagnostic platform (like OBD2 in the automotive field) for the generator industry?

**David Yuro:** "Good Question John! I have mixed feelings about having a Standardized Diagnostic Platform. On one hand, it would make my life (and those of my fellow technicians') easier by giving us the means to communicate with all genset controllers. But...I think it would also hurt the dealerships that are highly trained on a specific product by letting untrained and non dealers get into parameters they are not familiar with. For example, we have a customer with a Generac Bi-fuel MPS system (paralleling system) that used a non Generac generator company to troubleshoot an issue they were having. The service company had a version of our gen link program and was able to access the parameters. Needless to say they only made the issue worse and we were called in to make a simple fix. Training is KEY!"

#### The following 5 questions were provided by Chad Youkers, VP Rentals Division - Sunbelt Transformer Ltd., EGSA Distributor Dealer Committee Secretary

#### We all have those defining moments in our career that we're most proud of. Could you share a notable experience that stands out? Do you have any advice for someone out there that may be reading this that thinks they may want to pursue on-site power generation as a career? Where to start?

**David Yuro:** "There are so many jobs that I am proud of, but recently we replaced 2 radiator assemblies at a sewer plant in 2 separate buildings. They came from England and with the fan assemblies attached, weighed

over 5000 lbs. We had very limited space to work with and we were told several times that our plan of removal and installation wouldn't work.

Meanwhile, the job went like clockwork. It's a great feeling to accomplish something like that! There have been many others, but the truth is I feel proud of every job every day.

My advice for someone interested in on-site power generation as a career would be to look into it. Make sure you are willing to make the commitment first. It is not a 9 to-5 job. There will be cancelled plans and late nights and it has its dangers, but if you are willing, it is a great career and you will never stop learning.

Start with a technical school and join a company that's willing to train and you won't be sorry. One of the biggest complaints I hear from techs at other companies is 'We never get any training' and that's just a shame."

#### What job stands out as the one that is unequivocally your proudest moment as a power generation professional? And, why?

**David Yuro:** "It's difficult to recall one job as my proudest moment. I like challenges and anytime I leave a job site with a happy customer, I am proud. But if I had to pick one right now, I would say the time that fellow technicians Brian Pagano, Rich Boyle, Lamar Sullivan and I had to replace (5) 22 liter Doosan Engines at a Pennsylvania school for the disabled children.

We worked long days in 100 degree heat in the middle of an open field and the conditions were brutal, but we were able to get them back up and running and load banked in the allotted time. Although physically drained, by the end of the job, all we could do was smile."

#### What do you think would be the best way to introduce and attract 'Millennials' to the lucrative onsite power generation industry?

**David Yuro:** "Introducing millennials to on-site power is a challenge, because not many schools focus on generators as an area of study. In the last few decades the education system has gone from "blue collar" hands on training to a more administrative way of education.

As we mentioned earlier, I believe if millennials could be introduced by using an apprenticeship program which includes "shadowing" a technician on the job, they would realize the technology and skill set involved in the generator industry. It's one thing to talk about a career and another to experience it."

# What do you think is the most frustrating challenge that our industry faces today?

**David Yuro:** "I believe the issue we are facing is many companies believe they can jump into the lucrative (on-site power generation) industry with inadequately trained and/or inexperienced technicians. Many techs that I speak with get little training and poor support from their companies. This causes customers to receive a poor quality of service and reflects on our industry. I have been lucky to work for companies that have always put safety, training and quality first. I believe customers should always ask for EGSA certified techs to work on their critical equipment."

#### Looking back, would you do it all again? Why or why not?

**David Yuro:** "Absolutely, I love my career. The only thing I would change is I would get involved in generators earlier, right out of technical school. I find my job extremely satisfying. Every day I find a feeling of accomplishment helping customers."

#### The following question was provided by Jeff Gehlhausen, Clarke Fire Protection & Clarke Power Generation.

#### In your many years as a tech what was that 'Holy Cow' moment that comes first to mind and how did your years of experience and training get you through it?

**David Yuro:** "Training is so important! You can't fix or maintain anything if you don't know how it works. I went to Lincoln Tech for Automotive and Diesel and then went to Foley Cat, where training was a top priority. Between the lift truck and power systems, I attended countless classes. Now at Modern, I have attended many Generac, Volvo, Perkins and ASCO Classes.

I believe you never stop learning. I can't think of a particular "Holy Cow" moment, but there are definitely times when things don't go as planned....like when you are doing an annual load bank test and something fails. You have to be able to assess the situation calmly and decide a plan of action. That's where training and experience kick in and you keep your head about you."

#### The following 3 questions were provided by Rick Morrison, Sales Manager, Integrated Solutions, Nixon Power Services, EGSA Director 2013-2015

#### Why did you get in the generator business?

**David Yuro:** "I was originally a lift truck technician. My company disbanded the lift truck business and invited a few of us to join the power systems division. This was the best thing that ever happened to me, although it didn't seem like it at the time. I had just bought a house, had 3 children and was changing careers. But, quickly I realized I had been given a great opportunity and I have been in the industry ever since."

# What is the one thing that motivates you every day about your job?

**David Yuro:** "I enjoy that every day is a new experience, there's never a dull moment. I feel like I learn something new every day and that no two days are alike. I also get to challenge myself daily. Just when you think you have it all figured out...you don't."

#### How do you balance your family life with your career?

**David Yuro:** "I will admit this is a very challenging job that conflicts with family time. Being on call and emergencies happen and plans do get cancelled. The balance my family has obtained is based on our spontaneous nature, and working around the position...and, we don't make plans that can't be changed."

#### The following question was provided by Christy Livering, CAP-OM, Vice President/Operations Manager, DynatechGenerators.com

# How do you stay humble in your position, considering the risks involved on the field/site?

**David Yuro:** "Safety is and should be every gen tech's primary concern. The job is dangerous but if you follow safety procedures, wear your PPE and don't take shortcuts, you will be okay."

# The following question was provided by Dane Olson, Operations Manager, Generator Solutions, Inc.

#### Simply put, do your customers request you by name?

David Yuro: "The short answer is Yes.

It's a great honor for customers to ask for me personally and call me directly. I do not take this lightly; it just means that I have developed a trust and rapport that is good for my customer and my company.

Also, being a trainer for Generac and getting emails from students on how they enjoyed my class and how it helped them is just as satisfying!"

#### The following question was provided by Keith Heid, Sales Manager, Fidelity Engineering, Inc.

#### What has been the biggest advancement in generator set and ATS technology that has improved generator performance and reliability, since you first entered the industry?

**David Yuro:** "I think communications and remote monitoring. With all the advancements in the internet and cellphone networks, we can be made aware of an issue (even at a remote site) before the customer is and have it fixed before it becomes an issue.

The days of dial up internet and landlines are long gone. Building management systems monitor all aspects of power generation increasing reliability tremendously. Also the ability for ATS and gensets to store events and alarms, make it much easier to pinpoint an issue even if the customer was not onsite when the problem occurred."

#### The following 2 questions were provided by Daveed Ben, Global Service Engineer & Technical Instructor at DEIF, Inc.

#### How difficult has it been to cope with learning mechanics, electronics and controls at the same time?

**David Yuro:** "I was lucky. I was a lift truck technician that specialized in electric forklifts, so that gave me a strong background in DC controls. I had a strong engine background rebuilding engines in lift trucks, motorcycles and for fun. I also went to school for Computer Programming, so when I joined the Power Systems Division at Foley Inc. (a CAT dealer), I was lacking only in AC power experience.

The techs that trained me were top notch, truly the" Best of the Best" and went out of their way to help me master all aspects of power generation."

#### Is there anything you would like to add, David?

**David Yuro:** "When my supervisor, Joe Camacho, told me that he had nominated me for the 2016 EGSA Technician of the Year Award (TOYA), I was extremely honored. I must admit though, I didn't believe I had a chance against the Incredible talent in our industry.

Then, when I got the call telling me I had won...I was incredibly overwhelmed. It is such a great honor to have won this award and it makes me look back over my career, at all the people I have met, worked with, learned from and taught. I would love to thank all of them by name, but it would take pages and pages. To all of you I say, "Thank you..."

I would also like to thank Modern Group Power Systems for all they do. I look forward to many more years in On-Site Power."

For more than 50 years, the EGSA has been on the cutting edge of generated power solutions. Providing codes and standards updates, emerging technologies, education, best practices, technician certification, and industry enrichment, EGSA is the leading authority in the on-site power industry. We are proud of our Distributer Dealer Committee for handling the annual award and developing a fair and transparent way of judging and scoring.

#### 2016 TECHNICIAN OF THE YEAR

Left: In Sacramento during the EGSA Fall Conference, John McClure personally congratulates David for being selected as the 2016 TOYA recipient.

Middle: All in a week's work... the same week that David accepted the 2016 EGSA TOYA, he also walked his daughter, Mrs. Nikki Stone, down the aisle in her country-themed nuptials!



**Right:** David and his wife Dawn celebrate his TOYA moment together with EGSA! (Also pictured: Bob Hafich, 2016 EGSA President and John McClure, Modern Power Systems VP).

**Bottom Photos:** What a Great Idea! Modern Power Systems went out of their way to show their expressed gratitude, highlighting David's achievement alongside the Pennsylvania Turnpike with their highway signage.



<sup>44</sup>Our nominee (David Yuro) is an asset to our company, one that we've come to trust and rely upon to keep us leaders in our market. It's because of his service to the customer and to our company that we continue to expand our customer base, provide our customers with new equipment, and continue to be the go-to service provider for many key accounts. AT&T, Verizon Wireless, American Tower, Comcast, Alpha Technologies, and many others, don't hesitate to contact us due to the dedication of our nominee. I truly hope that he is selected and chosen as this year's EGSA Technician of the Year so that he understands just how much his service is appreciated. He has dedicated a significant portion of his life to improving himself, taking care of our customers, and spreading his knowledge to our entire team. I would like this opportunity to be able to thank him for all that he does for our company and our customers. He is absolutely, without question, the definition of a professional EGSA Certified generator technician.<sup>77</sup>

Joe Camacho, Operations Manager, Modern Power Systems.

We'd also like to thank the following sponsors, for without their support, the TOYA would not be possible:

- Generac Power Systems
- Kelly Generator & Equipment, Inc.
- Power Pro-Tech Services
- SunBelt Transformer
- Emergency Systems Service Company
- Arizona Generator Technology (DBA GEN-TECH)
- Lionheart Critical Power Specialists
- Nixon Power Services Company
- Powers Guaranteed Generators
- South Shore Generator Sales & Service
- CD & Power
- Power Telematics

Thanks to our members below who took the time to take part and have a voice in providing these interview questions!

- Daveed Ben, DEIF, Inc.
- · John Bentech, Dynatechgenerators.com
- Sean Fallon, Cooper Electric Supply
- Jeff Gehlhausen, Clarke Fire Protection & Clarke Power Generation
- Keith Heid, Fidelity Engineering, Inc.
- Christy Livering, DynatechGenerators.com
- Rick Morrison, Nixon Power Services
- Dane Olson, Generator Solutions, Inc.
- Todd Vaughan, Kelly Generator & Equipment, Inc.
- Chad Youkers, Sunbelt Transformer Ltd.

To those who submitted questions, please stop by the EGSA **Booth #1837** at POWER-GEN Intl, we have a token of our thanks waiting for you! EGSA and the Distributor Dealer Committee would like to thank the following judges for 2016. Thank you for your timely participation and attention to detail!

- Tom Black, ASCO Power Technologies
- Andy Briggs, Power Telematics, Inc.
- David Griffin, AKSA Power Generation Co. Ltd.
- Keith Heid, Fidelity Engineering, Inc.
- Rick Hodgkins, (formerly with Phoenix Products)
- Chris Nagle, Dresser Rand, A Siemens Business
- Chad Youkers, Sunbelt Transformer LTD.



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#### Continued from page 8

## **EDUCATION**

- Reasonable hotel rate, \$135/night
- Restaurants within close proximity
- The hotel will store our demonstration pieces (show and tell) at no charge. This will allow us to add more items to increase attendee information retention. Shipping parts around the country has been expensive and we have had a few breakages through the years.

Clearly, some members do wait for a school to come in close proximity to their geographic location before sending people, but our averages tell a different story, with approximately 90% flying in. After holding schools in most parts of the country, we realized that the northwest had been neglected, so we arranged a school in Portland, OR. While the school was well-attended, we had no students from either Oregon or Washington States; most were from the mid-west and east. Our October school in Nashville attracted folks from 16 States, 3 Canadian Provinces and Costa Rica, but nary a one from old Rocky Top (Tennessee).

We sincerely hope that this single location will work out well for you; please let me know if you have any comments!

#### Here is the 2017 schedule for the Charlotte schools:

**Basic:** February 7 – 9; June 6 –8 and August 15 – 17 **Advanced:** April 3 – 6; July 10 – 13 and October 16 - 19 The basic school, held in conjunction with POWER-GEN International will be December 4 – 6, 2017 in Las Vegas.

#### A Holiday Gift Idea

Do you have customers that you would like to recognize with a little something special for the holiday season? Or perhaps, consulting/specifying engineers, facility managers, employees or people with whom you would like to do business?

Consider the benefits of giving a copy of the EGSA reference book, *On-Site Power Generation: A Comprehensive Guide to On-Site Power.* This latest, 5th edition, is packed with 700 pages of useful information about all components in an on-site power generating system, from batteries to breakers, from radiators to rain caps and everything in between.

By giving this book you will be setting yourself apart from those that give the traditional (and often useless) gifts. You will be presenting a valuable tool that will help with their professional development and career and that they can hang onto until retirement. We can even provide a PDF label in Avery format so that you may customize the book with their name and your company name printed on the front cover! The order form can be found at *EGSA.org*.

Comments or questions? Send me an email: m.pope@egsa.org. -



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# How do Investors See the On-site Power Industry?

#### By: Joe Zirnhelt, COO, Power Systems Research

The North American on-site power industry has a compelling and exciting story to tell investors. Based upon information from Power Systems Research (PSR), the leader in collecting information on global generator production and applications (for 40 years), it's a story that features growth, stability and diversity. Taken together, this provides an attractive return on investment (ROI) for investors.

Joe Zirnhelt has spent more than 20 years in the power generation industry, beginning with experience in nuclear power plants and emergency standby systems in the U.S. Navy, several years commissioning of combined cycle gas turbine power plants and since 2005 – studying the reciprocating engine-based power generation markets with Power Systems Research. After reading this report, you should better understand the attractive nature of our industry as well as how and why you may want to review your company's value proposition as a player in the North American on-site power industry.

Whether you're managing a power generation business or fulfilling some other key role in supporting business continuity, chances are that you may find yourself preoccupied on the matters at hand in the next days, weeks or months. While we need to stay on task and keep business moving along, there may be benefits to stepping back and evaluating how your business is positioned with respect to the outside world. More specifically, how is your business positioned in the eyes of an individual or group considering some sort of investment into your business?

#### Investor Mindset

Typically, when investors are looking for their next opportunity, they consider companies in industries with some degree and possibility of upside potential. Once that upside potential is identified, the opportunity is further screened in terms of ROI, level of risk and alternative uses of their capital.

Companies operating in the North American on-site power industry today offer several attractive options for investors.

#### What Makes Your Company Attractive?

Investors or lenders looking at your company want to know who you are, what kind of environment you're operating in and what your competition is doing.

Here's a brief checklist. You probably consider most of these in your regular planning, but it never hurts to pull out the list and review it occasionally.

- **Growth Potential:** What is the competitive mix in your space, and what is the potential for profit margin growth at your company?
- **Management Team:** Right people, right spots? What makes the team so good? Is it improving?
- **Partners/Joint Ventures:** Synergies and leverage can be a real plus, if you're in a lead position.
- **Market Position:** How strong is your core business? Improving or slipping?
- Market Reach: Global or regional? Expanding or contracting?
- Balance Sheet: Cash reserves? Debt? Access to capital?
- R&D: Committed to developing new products? Cutting edge or just keeping up?
- **Products/Solutions:** Off-the-shelf solutions; custom solutions, a combination? Production processes and capacity to take advantage of market changes?





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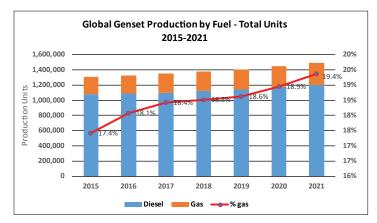
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# Generator Monitoring System

By Generator Solutions, Inc.

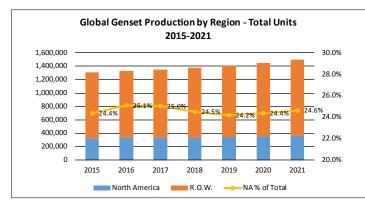




#### Global Genset Production by Fuel - Total Units (2015-2021)

Fuel	2015	2016	2017	2018	2019	2020	2021	CAGR 2016-2021
Diesel	1,083,188	1,085,179	1,100,437	1,125,916	1,145,483	1,176,297	1,203,889	2.1%
Gas	228,403	239,529	248,639	255,927	261,984	274,990	289,089	3.8%
Grand Total	1,311,591	1,324,708	1,349,076	1,381,843	1,407,467	1,451,287	1,492,978	2.4%

Source: Power Systems Research – OE Link<sup>™</sup> database



#### Global Genset Production by Region – Total Units (2015-2021)

Region	2015	2016	2017	2018	2019	2020	2021
North America	319,856	332,148	337,873	338,561	340,310	353,438	367,750
R.O.W.	991,735	992,560	1,011,203	1,043,282	1,067,157	1,097,849	1,125,228
Grand Total	1,311,591	1,324,708	1,349,076	1,381,843	1,407,467	1,451,287	1,492,978

Source: Power Systems Research – OE Link<sup>™</sup> database

# Why Invest In the Engine-Based On-Site Power Industry?

None of us operates in a business vacuum. So, what's happening in our industry? That's what your potential investors want to know. For purposes of this discussion, we're limiting our analysis within the context of the typical EGSA member company's main area of focus: the on-site power industry, using either diesel or natural gas reciprocating engines for applications of prime power or standby service.

Here's how we see the North American power-gen market from a 30,000-foot level as a subset of the total global genset market. Our research drills down to the model level, too, but that's a topic for another discussion, on another day.

#### Global Industry Size and Scope

Globally, more than 1.3 million units are produced annually, powered by natural gas or diesel fuel. We'll be using production figures throughout this report, not sales of units to end users.

#### Other key parameters of the global genset market:

- Although gas gensets are gaining over diesel in recent years, on a global basis most gensets are diesel powered. Gas gensets made up 17.4% of genset production in 2015 at just over 228,000 units. We expect this share of gas versus diesel to grow to over 19% by 2021.
  - In terms of total Gigawatts (GW) produced, the total genset production in 2015 was about 127 GW, of which 88% was diesel and 12% gas.
  - Standby units account for about 55% of total GW while prime power is about 45% of total GW.
- Factory value of 2015 production is estimated at \$17 billion; \$13.3 billion diesel and \$4.2 billion gas.
- We see the global market growing to \$21 billion by 2021, a CAGR of 3.9% overall with gas genset value seeing 5.4% CAGR.

#### The North American Market

North American production accounts for about 25% of the global total, or about 300,000 units produced per year. However, North American consumption is something less than 300,000 units since many units produced here are exported out to other regions.

#### 2015 North America Genset Production

2013 North America Genset Froduction						
Power Range	Diesel Units	Gas Units	Grand Total			
<5 kW	6,438	2,287	8,725			
5 to18 kW	61,135	113,181	174,316			
18 to 50 kW	22,439	35,445	57,884			
50 to 250 kW	34,858	21,240	56,098			
250 to 500 kW	10,696	2,571	13,267			
500 to 1000 kW	3,584	706	4,290			
>1000 kW	4,417	859	5,276			
Grand Total	143,567	176,289	319,856			

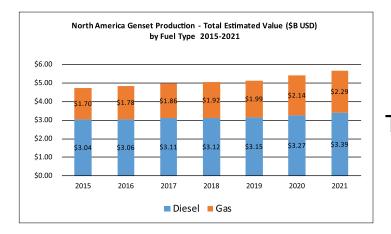
*Source: Power Systems Research* − *OE Link*<sup>™</sup> *database* 

#### In North America, here's what we see for the on-site power

#### RESEARCH

#### industry:

- On a units basis, over 90% of the units produced in North America in 2015 were in the 5-250 kW range.
- The factory value of gensets produced in North America in 2015 is estimated at \$4.7 billion, and we expect this figure to grow to \$5.7 billion by 2021.
- Production of natural gas units has a higher forecasted growth rate than diesel over the next five years, 5% natural gas vs. 2% growth for diesel.



#### A SWOT Analysis

Now that we have an overall picture of the genset market globally and in North America, let's dig a little deeper into the investment opportunity that on-site power offers.

#### Strengths

- Renewables such as wind and solar (deemed as green) have generated a lot of interest over the years; one common drawback for these renewables is the power they produce is intermittent. They can't supply a consistent source of power like reciprocating engines;
- Engine-based power offers excellent power density on short demand;
- Fuels—both diesel and natural gas—are easily available in most areas of North America;
- Brand names are important with buyers; and
- The genset sale often is a door opener for other services.

#### Weaknesses

• The more stringent emissions compliance standards become, the more costs will be passed along to end users. As a result, end users may look for alternative solutions;

- Engine-based power is vulnerable to cheaper imports, especially in the lower kW ranges; and
- The barriers to entry in the power-gen space may be lower than in other industries available to our investors.

#### Opportunities

- Engine power is flexible and adaptable, and works well with other technologies;
- The growing need for data and data backup is going to continue to fuel the growth of data centers which require standby power units; and
- Available technology is increasing for engine-driven gensets. Many of the on-highway improvements in areas such as fuel injection, turbocharging, etc. start in the on-highway markets but eventually find their way into the power gen markets at a lower cost to the end user.

#### Threats

- There always is the possibility of a game-changing technology bursting upon the scene, but this is no more likely in on-site power than any other segment;
- Any new technology must gain a foothold and be accepted. Not an easy proposition. For example, consider the hurdles that have hindered widespread adoption of electric vehicles; and
- The combined costs of fuel and emissions could drive the end user to seek an alternative solution for their on-site power needs.

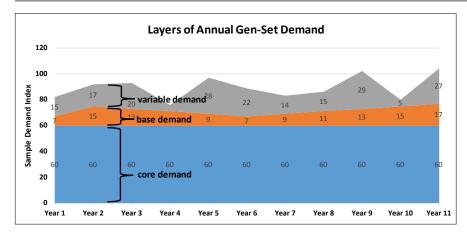
#### Key Drivers of Demand

It is helpful to distinguish between the different types of drivers and one can quickly see that yearly genset demand patterns can be characterized into three distinct "layers."

**Core Demand** is the underlying demand that will exist each year. These are the units for replacements and new installs that exist simply because of the overall size of the market. These purchasers are not "on the fence."

**Base Demand** is tied to the overall health of the economy and is affected by forces such as interest rates, housing starts, construction spending, government spending, oil & gas activity, and the overall economic cycle of recession and expansion. Base demand will not substantially swing the market up or down in any given year but will shape the overall results to some degree.

Finally, **Variable Demand** is the wildcard and is due to any sort of crisis or natural disaster requiring gensets. These are situational influences on demand (outages caused by hurricanes, tornadoes, ice storms, etc.). The increased frequency and severity of electrical outages, whatever the cause might be, will cause the user to shift their purchase decision.



fort to step back from time to time and evaluate how you would be positioned in the eyes of any potential investor. Taking such steps, even if you do not envision a need or have a desire for outside investment, will ensure that how you appear to those outside of our industry is what you would intend. Perhaps the saying "perception is reality" gets over-used these days but many times a newcomer to the market may make their initial evaluation based on what they perceive from their outside perspective. This may be your one chance to make that right impression that counts.

One thing is certain: loss of power is becoming more unacceptable every day. The economic impact of power outages is growing to the point where organizations—and even many residential users are not willing to accept even minimal downtime because of power outages. 40.0%

Each quarter, Power Systems Research interviews more than 900 business owners and 300 consumers in our PowerTracker<sup>™</sup> survey to determine their level of concern regarding the reliability of their electric supply.

From these concerns, we have created what we like to

refer to as the Anxiety Index. It's interesting to note that the trend of this index is declining over time; the level of intensity of concerns seems to have lessened over the last 10 years.

We interpret this change as an indication that concerned parties have moved to install backup systems.

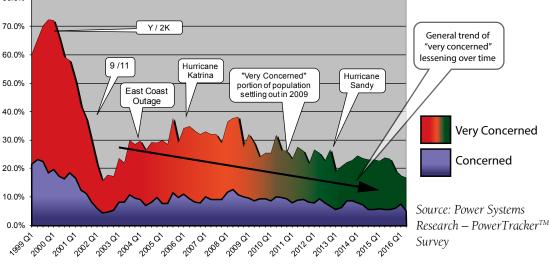
#### **Bottom Line**

What are the takeaways from this article? First, the need for on-site power globally and in North America has been growing—for many reasons, in both the industrial and consumer segments, and is expected to continue growing through 2021.

Second, even though barriers to entry into the genset space are relatively low, buyers are willing to pay a premium for established, brand-name products. Third, the sale of a genset can be a door-opener in terms of providing additional related products and services.

Finally, in summarizing all of this, we must not overlook the fact that companies in the on-site power industry can provide solid investment opportunities. Given this, it is worth the ef-

#### How concerned are you about the reliability of electric supply? % of 1200 U.S. & Canadian Consumers and Businesses - Nationwide



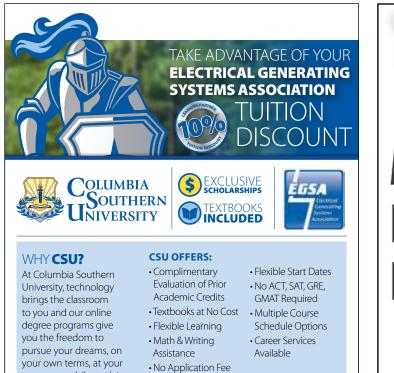
#### About the Author

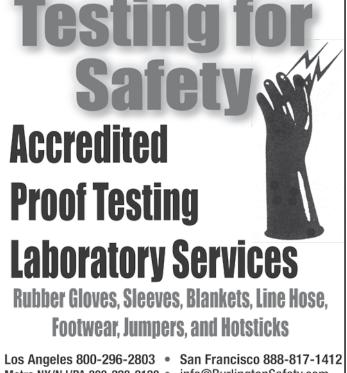
Joe Zirnhelt is C.O.O. & Strategist at Power Systems Research. He has focused on the power generation related markets working on projects addressing many of the current and future aspects of our industry.



Working in the power generation-related industries for more than 20 years, Joe's experience spans several technology areas starting with a tour as an officer in the United States Navy and a graduate of the naval nuclear propulsion program. Following his naval service, he joined Alstom Power and was involved with gas turbine combined cycle plant commissioning and warranty management services.

Joe received his Bachelor of Science in Mechanical Engineering from the University of Notre Dame and MBA from the University of Texas at Austin. He has been involved with EGSA since 2005 and an active member of our community, currently serving as Chair of the EGSA Market Trends Committee.





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#### **Global Coverage Of The Power Generation Markets** Industry News . . . From Kilowatts To Megawatts



# EGSA NEWS

#### EGSA Member Alert

The EGSA Board of Directors wishes to make our members aware of a recent change to the makeup of our Executive Board Members. Our 2016 Vice President, David Brown, has taken a job opportunity to keep his family in Southern California, but unfortunately, the career is outside the power generation industry.



"David has been a very committed and

contributing member of our organization and Board. Although as with any new position he will need the time to invest in his new career, we certainly hope that he will stay in touch," adds Bob Hafich, 2016 EGSA President. "In the time that I got to know him, he became a personal friend as well. We wish him and his wife, Diane our very best." David recently accepted a position with Mission Critical Electronics, a firm who represent a platform of brands and products that focus on industrial electronics and electrical applications.

Effective immediately, Dennis Roundtree, Vice President and CEO of Onsite Power, Inc. will take David's place on the EGSA Executive Board and in 2017, will serve as the President-Elect for our Association. "Dennis has the credentials to step right in and be immediately productive on the EGSA Executive Board. He is a 25 year veteran of the on-site power generation industry. Also, he has been an active member since the 90s and has championed our education programs, including being a Rowley School Instructor for the last 18 years. He and his wife CeeCee are active and engaging people and we look forward to having Dennis serve the Association," adds Charlie Habic, incoming 2017 EGSA President.

Dennis is not only a "people person" but he also has a great deal of experience in on-site power technologies. He was a member of the EGSA Board from 2007 until 2009 and has been a Rowley School Instructor since 1998. Working his way through the chairs in the Education Committee, Dennis was also both the Education Chair (07'-08'), as well as in an Officer capacity (04'-06'). Dennis is a Timmler Award recipient (2009) and one of only 8 EGSA Members to-date that have been awarded our James Wright Educator Award.





Rowed Hard and Put Away Wet

© Sport Graphics

Michael Pope, EGSA's Director of Education, previous Chair of the Education Committee, Board Member and 2012 EGSA President, and Bill Kaewert, CTO of SENS and present EGSA Board Member are both Rowley School Instructors and EGSA Reference Book chapter authors. Coincidently, and independently, they are both avid rowers. Their boats are called shells and are long but only 20" wide! This year they both entered Boston's Head of the Charles Regatta (HOCR), held during the weekend of October 22-23.

The HOCR has become the major event for rowers in the USA and beyond since its beginnings in 1965. It now attracts over 11,000 athletes, 1,900 boats and tens of thousands of spectators every year. Crews arrived from all over the world to compete here including Canada, the UK, France, Germany, South Africa, Australia, New Zealand, Columbia, Mexico, Ukraine and Japan, to mention just a few. It is the largest rowing regatta in the world.

The race is rowed on 3 miles of the Charles River in the heart of Boston and it is purely against the clock. There are six distinct turns in the river and six bridges over the river. Navigation is quite important – those bridge abutments are really solid and can wreck a rowing shell and change the event to a swimming experience for an unfortunate crew! There were many Olympians competing, including the Women's Eight, who won Gold in Rio this summer.

We have two reports for you, first from Michael:

"Rain: continuous. Winds: 20 – 30mph. That was the forecast for Saturday's weather. At least it wasn't going to snow, which it did during my first race there in 2009.

"This year I teamed up with rowing partner Don in his 32' double shell - two scullers, meaning we both have two oars. These boats have sliding seats, enabling the rowers to use their legs for maximum power applied to the oars. After an early Saturday morning arrival in Boston it was soon time to launch and start the leisurely 3 mile row downstream to the starting area where the rowers are "launched" across the start line in 15 second intervals. It was beautiful! No wind or rain, temperature was low 60s and the water was like glass; it doesn't get better. But, oh, it got worse! Within a minute of our start a strong wind brought a driving rain and, inevitably, it was a head wind. The three miles felt like five; usually it only feels like four. "During the last mile of the course things are hurting and my body's pre-alarms are sounding loud and clear. I'm running out of O2. Then, thankfully, we pass the Finish line. Total exhaustion! We paddled slowly back to the dock and prepared, in the continuing rain, for our return journey back to the South Coast of Massachusetts.

"We picked up a couple of penalty points for being on the wrong side of some marker buoys but managed to avoid contact with all of the bridge abutments. Don and I finished towards the back of our

# EGSA NEWS



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"Men's Senior Master Doubles 50+" class this year, so we didn't earn any hardware (like gold, silver or bronze) but I know the winners were very grateful to us – we made them look great!

Michael was given a tee shirt worded with "A Gentleman and a Sculler". He admits that both claims have been disputed.

Bill is a serious athlete. He does "century" bike races (100 miles) and is a triathlete (swimming, cycling and running) and competes in Ironman races including swimming 2.4 miles, followed by 112 miles on the bike and then running a marathon

On the Sunday he competed in two separate races. Although Sunday was sunny and free of rain, all crews fought gusty headwinds and crosswinds of 20-30+ mph. And now Bill's Experience:

"Both races that day were rowed with fellow alumni of Dartmouth College. The first in a quad, a boat in which each of four rowers employs two oars,. The second race was in a mixed eight, in which each of the eight rowers uses one sweep oar. Compared with single and double sculls, these are fast boats – but each has its unique challenges.

The quad requires more quickness and precision than other boats. Two of my fellow oarsmen were members of the 1980 United States Olympic team, are all excellent scullers Rowing is above all a team sport because the crew wins or loses as a team. This team dynamic is quite valuable for young people to learn, as it helps develop skills valuable to adult life. Shared suffering, going the extra mile for your teammates and keeping going even when your body screams that it's time to stop all are ways in which rowing helps build character, perseverance and teamwork.

"One of the best things about our quad is that the four of us forged what would become a lifelong bond when we rowed together in college. This was our 41st year together, and each of us looks forward to continuing together at least once or twice a year until we are either unable to travel or too decrepit to get into the boat. "Our mixed eight crew had never rowed together before the race! "Mixed" means half the crew is female, the other half male. Compared with doubles and quads, in the eight-oared shell rowers are able to apply more brute force to their single oar. Compared with sculling, racing in a sweep boat is a real suffer fest. Although in both events my heart rate during each 20-minute race was well into my maximum zone, it was highest in the eight. Facial expressions of most rowers, mid-race, are always amusing, and often the subject of intra-crew trash talking.

As Michael indicated, the Charles is a tricky river to navigate, and it was much more so this year because of strong, gusty winds. As we rowed amidst three boats near one of the six bridges, we ended up clashing oars with another eight in a turn to starboard just as the passage beneath the bridge narrowed. In addition to a 15-second penalty assessed against us, it took time to detangle our oars and then accelerate back up to race speed from a dead stop. Such challenges are what make the Head of the Charles an exhilarating race.

Although neither of us came away with a medal, we each feel blessed to have the opportunity to compete with some of the nation's and world's best rowers."

Are there any other rowers out there? These guys would love to hear from you! And if you have an extra-curricular activity that you would like to share, let us know.

#### Whether You Are Seeking New Talent or Looking for a New Career, We Make the Job Search Easier with the EGSA Job Bank!

#### This Process Allows Members to Control Their Listings

One of the great benefits that you enjoy as an EGSA Member is access to the Job Bank. Posted on the EGSA website and bi-monthly in each issue of Powerline Magazine, the EGSA job bank boasts more than 60 job postings at any given time. (Online & Print)

The EGSA Job Bank is managed exclusively online via our web site. We are giving you the power to directly manage your own job postings. Choose how long the ad should run, whether the ad should run in *Powerline* Magazine and edit it whenever you need to. This streamlined process means you manage your listings.

#### Online Job Bank The Directions Are Easy! To Post a Job:

- Log onto the job bank\* at www.egsa.org/Careers.aspx
- Click on "Add New Job Opportunity."
- Fill in the job information

For your job posting, you will see "delete" and "edit" buttons below the posting. Use these if you need to edit the posting at a later date. (Ads run online for 60 days unless edits are made to update the listing.)

To review all of the career opportunities that our Members have available, simply visit *www.egsa.org* and click on the Careers tab! Remember - Job Bank postings are one of the FREE benefits of EGSA Membership.

EGSA Membership can save you money on job placement advertisements; show this article to your HR Department if this service is not one you are currently utilizing!

For questions, call EGSA staff at 561-750-5575 or visit *www.egsa.org/Careers.aspx* for complete instructions!



\*To create an EGSA login, please visit www.egsa.org and click the green "register" link in the upper right-hand corner. The minimum information required is your name, company name, company email and the creation of a password. (The password must be 8 characters long, must contain letters and numbers and also include one uppercase letter.)



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# Application for Membership ELECTRICAL GENERATING SYSTEMS ASSOCIATION

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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.

	JLL MEMBERSHIP					TOTAL DUE
	fc 1 2 3 4	or a Fu I. They 2. They 3. They 4. They or co	<b>facturer Membership</b> Any individual, sole proprietor, partnership or corporation seeking membership must apply III Membership as a manufacturer if they meet one or more of the following criteria: y manufacture prime movers for power generation. y manufacture generators or other power conversion devices producing electricity. y manufacture switchgear or electrical control devices. y manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production onversion system including related components or accessories for national or regional distribution. y are a wholly owned subsidiary of a firm that qualifies under rules one through four.	\$870	<del>\$200</del>	\$870
	DD Distributor/Dealer Membership Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.				igh	
	CI <b>Contractor/Integrator Membership</b> Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.			\$310	<del>\$100</del>	\$310
	MR <b>Manufacturer's Representative Membership</b> Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.					
	n	nanage	<b>y Management Company Membership</b> Any individual, sole proprietor, partnership or corporation engaged in energy ement, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and imilar enterprises may apply for Full Membership as an Energy Management Company.	\$210	<del>\$100</del>	\$210
455	OCIATE MEMBERSHIP			Annual Dues	Initiation Fee	TOTAL DUE
	Associate Regular Membership (Select Appropriate Category Below)		\$210	<del>\$100</del>	\$210	
	requirements of Associate Regular Membership may apply for Full Membership at their option to <b>enjoy the privileges of Full Member</b> - ship, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at \$310					
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Representative's E-Mail	Company's Web Address
How did you hear about EGSA? 🛛 V	/eb site 🛯 Powerline magazine 🗳 Colleague 🗳 POWER-GEN 📮 Other
Why are you joining EGSA? 🛛 Certi	ication Program 🗅 CEU Program 🗅 Power Schools 🗅 Buying Guide Listing 🗅 Other
<b>2.</b> Member Classification	Please use the worksheet on page one of this application to determine your membership type.
Full Memberships Manufacturer (MF) Distributor/Dealer (DD) Contractor/Integrator (CI) Manufacturer's Representative Energy Management Compar	Associate Memberships       (Select Appropriate Catagory)       Service (AE)         Regular Associate Membership       Trade Publication (AA)       Educational Institution (AG)         Full Associate Membership       Trade Association (AB)       Military (AM)         Engineer (AC)       Retiree (AR)         End User (AD)       Student (AF)
<b>3. Membership Dues</b> (Plea amount from the dues schedule o Membership On-Site Power Referen	n page one.)       U.S. Money Order, or American Express)         Membership Dues       \$         Plaque (optional)**       \$         Mastercard       Visa         American Express
<b><u>Florida</u> <u>Residents</u></b> : Add 6% S ** Shipping and handling is included for Non-Continental US Residents should co Headquarters for shipping charges for **	Ill EGSA \$ Signature:
<b>5. Products/Services</b> Please Distributor/Dealer, please indicate white school, your major and your anticipate	describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or ch manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your d graduation date:
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02 Control/Annunciator Systems     08 Fill       29 Education     28 Full       30 Emission Control Equipment     03 Fuel       04 Enclosures, Generator Set     Systems	gine Starters/Starting Aids       12Governors       18Relays, Protective or Synchronizing       22Trailers, Generator Set         ers, Lube Oil, Fuel or Air       13Heat Recovery Systems       19       Silencers/Exhaust Systems/Noise       23 Trailers, Generator Set         el Cells       14       Instruments and controls, including meters, gauges, relays, contactors, or switches       20 Solenoids       25 Vibration Isolators         21Switchgear and Transfer Switches nerator Sets       15Load Banks       21Switchgear and Transfer Switches lation Switches, and/or Switchegar       27Wiring Devices or Receptacles
06 Engines, Gas Turbine 10 Ge	nerators/Alternators 17 Radiator/Heat Exchangers Panels  Define and the second sec

**O**• **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

## 7. Official Representative's Authorization

Signature 42 Date

### EGSA JOB BANK

#### **USA Northeast**

#### Inside Rental Sales

**Sunbelt Transformer** *Location: Sharon, PA - USA* 

Seeking experienced applicant to help grow our Rental Division. Based in Sharon, PA this position will be responsible for rental sales for the Northeast US. Position is Inside Sales with some required travel. We cater primarily to power generation distributors and dealers along with all the major power rental houses.

To apply: Email resumes to cyoukers@sunbeltusa.com

#### **USA Northwest**

#### Outside Sales Representative Power Generation

EC Power Systems Location: Fife, WA

Our Power Systems branch in Fife, WA is seeking an experienced Generator Sales professional to provide excellent customer service, develop and close sales as well as generate new business focused in the Washington state market. Applicants with disabilities may request accommodation to complete the application and selection process. To learn more about our company please visit our website at: www.e-c-co.com. CCB# 49737

To apply: For consideration please email or fax resume and cover letter to Human Resources at: Email: employment@e-c-co.com Fax: 503-220-5384

#### 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 www.EGSA.org/ Careers.aspx.

#### **USA Southeast**

#### Service Technician B

**Nixon Power Services** Location: Lawrenceville, GA

Service Technician B is an intermediate-level technician position. The position has the technical understanding of generator repair and operation to perform simple repairs and preventative maintenance. The position reports to the Service Manager in the Service department and routinely interacts with customers both external and internal.

To apply: Go to www.nixonpower.com to apply

#### Service Technician A

Nixon Power Services

Location: Lawrenceville, GA Service Technician A is an advanced-level technician position. The position has the technical understanding of generator repair and operation to perform major repairs and installations of generators and associated equipment. The position reports to the Service Manager in the Service department and routinely interacts with customers and various employees within the company.

**EGSA Certified Technicians Preferred**. To apply: Go to www.nixonpower.com to apply

#### Switchgear System Service Manager

Nixon Power Services Location: Undecided

The Switchgear Systems Service Manager is a leadership position responsible for the establishing, developing and growing the new Switchgear Systems Service Business Unit within Nixon. Initially responsible for securing and executing switchgear service business in this space. As the unit matures, potentially become responsible for growth, training, sales and operations of the business unit.

EGSA Certified Technicians Preferred.

To apply: Go to www.nixonpower.com to apply

#### Aftermarket Service Manager

Nixon Power Services

Location: Nashville, TN The Aftermarket Service Manager is a leadership position responsible for Service department's financial performance; departmental operations; warranty administration and execution. The position reports to the Aftermarket Operations Manager and regularly interacts with customers both internal and external.

**EGSA Certified Technicians Preferred**. *To apply: Go to www.nixonpower.com to apply* 

#### **Operations Manager, Major Accounts**

Nixon Power Services

*Location: Lawrenceville, GA* The Operations Manager, Major Accounts oversees all aspects of customer care for assigned major accounts, supervises major account coordinators, interfaces with key major account customers. Provides excellent customer service to key major customers. The position is in the Integrated Solutions department and reports directly to the Aftermarket Service Manager.

To apply: Go to www.nixonpower.com to apply

#### Manufacturer's Rep Seeking Principals

Leading Mid-South manufacturer's rep is seeking additional product lines. We have decades of experience in all aspects of the onsite power generation industry. We are interested in adding quality complementary manufacturers to our line of superior products serving the industry. Our record of outstanding success can help you achieve your sales and market share goals. Please respond if you have an area where you desire additional sales and market share.

> Please respond to: J.Kellough@EGSA.org (Reference PLMJ13JB-1)

#### Are You Short Staffed? Cost effective services without adding to your staff or overhead

- Project management, supplier coordination, owner's representative
- Commissioning, installation, removal and re-commissioning
- Power generation equipment appraisal, purchasing or resale
- Project experience to 50 MW in Asia, South America, Africa and Europe
- · Domestic and international travel on short notice
- · Decades of experience in the on-site power industry
- Member EGSA We provide NDA's and the utmost confidentiality

Please respond to: J.Kellough@EGSA.org (Reference PLND16JB-1)

### SAFETY POWER INC.

Another in Our Series of EGSA Member Company Profiles

#### SAFETY POWER INC.

#### www.safetypower.ca

Safety Power Inc. (SPI) was incorporated in Ontario, Canada in 2005 and is a privately held company with a focus on providing world-class clean technology for large scale diesel and natural gas internal combustion (IC) engines. Safety Power's head office is located minutes from Toronto Pearson International Airport in Mississauga, Ontario with manufacturing in Kitchener, Ontario and a sales branch office in Seattle, WA USA.

Safety Power Inc. (SPI) serves its customers through major OEM engine distributors and an extensive network of leading consulting and environmental engineering firms. The EGSA Member firm's strength is derived from its strong in-house engineering talent and their accomplished research and development competencies, which has resulted in leading-edge technologies with a focus on CO, NMHC, and NOx emissions reduction.

Safety Power is an ISO 9001 certified company and its team of engineers and technicians provides turnkey solutions that include Selective Catalytic Reduction (SCR) for NOx emissions, Diesel Particulate Filters (DPF) and Oxidation Catalysts for reduction of PM, CO and NMHC (VOC's) in accordance with Tier 4 Final (T4F), BACT Compliance and other equivalent global emissions standards. Safety Power's relationship with the customer does not end upon delivery of the equipment. Safety Power also provides installation support services, startup & commissioning services, remote engineering analysis & support services via its proprietary GlobalVu system, and routine onsite maintenance and re-verification services including a custom designed catalyst management replacement plan. All of which supports onsite diesel and natural gas power systems to be operated and tested without restriction, while minimizing the impact on the surrounding environment.

The genesis of Safety Power was the outcome of the post analysis of one of the largest electrical blackouts that North America Safety Power head office in Mississauga, Ontario, Canada.

had experienced in more than four decades. On August 14, 2003 a widespread power outage crippled huge areas of the northeastern United States and Canada. Industry, government and transportation ground to a halt. In some jurisdictions the outage lasted for several days. The weather was extremely hot during the outage. More than fifty million people were impacted. Few commercial facilities and fewer hospitals had air conditioning systems powered by their existing emergency standby generators. Many of those generators were installed to provide a backup source of power for just an eventuality failed to operate due to a host of maintenance related reasons. Emergency agencies in New York City and Toronto reported more than 900 elevator rescues in buildings where the backup generators failed to start and power the elevators to safety.

Power started returning to pockets of the East Coast within 24 hours, but the enormous blackout that struck the region raised many issues about the integrity of the electrical infrastructure including the emergency standby systems meant to mitigate the impact of grid power outages.

The reasons for the large number of failed starts varied but most of the standby engine based generator failures could be summed up as lack of proper maintenance and because they were not adequately routinely tested. Facility owners and operators were reluctant to test these units because of complaints about air emissions.

Following incorporation in 2005, Safety Power positioned itself as a global innovator in the development of technologies that have resulted in a line of state-of-the-art emission control products that meet or exceed the emission limit requirements from the strictest regulatory authorities in North America - US EPA Tier 4 Final emissions control, BACT Compliance, ONT MOE EBR 010-2463, EURO Stage 4etc

From the onset, Safety Power's co-founders, Robert Desnoyers, President & Chief Executive Officer and Bob Stelzer, Chairman & Chief Technical Officer had a vision to develop a clean technology

#### MEMBER PROFILE: SAFETY POWER INC.



solution that would allow owners of large scale diesel and natural gas engines, which are typically being used in standby power, CHP or distributed power applications, to operate the engines freely under load conditions without facing operating restrictions imposed on them by their federal or local regulatory authority. It is proven that routine testing and operation of these engines results in improved reliability and fewer issues than those experienced during the 2003 blackout.

Within its first year of operation, Safety Power installed a fullscale prototype for a megawatt class diesel generator set to demonstrate the emissions control technology and generator dispatching capabilities to key stakeholders. Following the successful launch of the prototype, Safety Power commenced design, engineering and manufacturing activities for the full scale rollout of state-of**Top Left:** Safety Power's compact design allows a full Tier 4 Final emissions control solution to be installed above the engine, indoors in a very tight space.

**Top Right:** Control Technician and Chief Technical Officer, Bob Stelzer surveying installation prior to commissioning.

**Bottom Left:** Carrying out testing & verification protocols as part of Safety Power's ISO 9001 QA/QC activities prior to shipping CP100 SCR Control Panels.

**Bottom Right:** Safety Power's Manager of Controls Technology carrying our pre-commissioning checks on outdoor ecoCUBE® SCR system.

the-art emissions control solutions to reduce the harmful exhaust emissions that previously prevented the use of diesel and natural gas engines for non-emergency use and restricted routine maintenance testing to a few hours per year. Owners of these assets now have a proven solution that gives them the freedom to operate their generating assets for routine maintenance purposes and the option to consider utilizing their diesel or natural gas engines for revenue generating programs such as Demand Response, Peak Shaving or to implement risk mitigation strategies such as storm avoidance operation.

Building off of these initial systems, Safety Power has continued to design new products to meet the demands of the ever changing market place. In the spring of 2011 Safety Power, introduced the ecoCUBE<sup>®</sup> product line. This unique product line













#### MEMBER PROFILE: SAFETY POWER INC.

combined several SCR components and emissions reduction technologies into one compact reactor housing. In addition the ecoCUBE<sup>®</sup> was designed with the most stringent Natural Gas and Diesel regulations in mind. The ecoCUBE<sup>®</sup> product has proved to be a big success within the market place and now has well over 150 installations.

Working closely with world class colleges and universities and by employing a core group of talented, highly skilled engineers, Safety Power has developed an exceptionally effective product architecture utilizing computational fluid dynamics and model-based control algorithms that has resulted in a state-of-theart emissions control solution for many applications and in accordance with the highest standards, including Tier 4f emissions protocols. Safety Power's emissions control systems for diesel and in particular natural gas engines are achieving performance levels not previously realized in the industry within a compact, low cost, highly configurable platform. This winning combination of attributes along with Safety Power's strong commitment to continued product innovation, research & development and talent recruitment ensures that Safety Power will continue to be a Global Innovator in its served market.

#### The EGSA Connection

Since joining EGSA in 2012, Safety Power has been an active EGSA Member. The firm participates by attending our annual spring and fall conferences. They exhibit in our Exhibitor Showcase each year and they support us by sponsoring our activities during these events. They have also advertised in *Powerline* Magazine!

Robert and Brenda have become staples in our EGSA community being fully engaged in what EGSA has to offer. We are proud to have them as members and look forward to their continued success and engagement with EGSA!

**Photo 1:** A beautiful fall day in Quebec just outside of Montreal as the first two of twenty-seven ecoCUBE SCR systems being install on 2.5MW diesel engines.

Photo 2: Sr. Project Coordinator at Safety Power's manufacturing facility in Kitchener, Ontario inspecting ecoCUBE<sup>®</sup> SCR systems designed for natural gas engines prior to loading and shipping.

**Photo 3:** Sr. Control Engineer and crew braving a bitterly cold winter day to connect the control cabling to one of five systems being installed on 2.5MW enclosure diesels for the purpose of demand response use.

**Photo 4:** Safety Power crew aligning SCR system that was just hoisted 44 stories atop a data center in downtown Toronto.

**Photo 5:** "Safety Power provides on-going support & maintenance service to the products sold"

### **INDUSTRY NEWS**

# MIRATECH<sup>®</sup> Announces the Acquisition of the IP of Vaporphase

MIRATECH<sup>®</sup> announces the acquisition of the IP of Vaporphase. Vaporphase is a leading supplier of heat recovery systems for reciprocating engines in North America. The transaction includes the intellectual property of Vaporphase, certain key employees are also joining MIRATECH as part of this acquisition.

"The addition of Vaporphase heat recovery capabilities will effectively round out our exhaust system product offering. This will improve our position in the growing market segment of Combined Heat and Power (CHP) plants which act to reduce the carbon footprint over traditional engine installations", said Dean Glover, MIRATECH CEO. He also added, "Over 3000 Vaporphase units have been produced over their 75-year history, this deep installed base and focus on high quality makes them a perfect addition to the MIRATECH family of products."

The Vaporphase product line includes both hot water and steam production systems, in both horizontal and vertical applications and have proven applications on numerous brands of engines fueled by diesel, gas and synthetic fuels. Warner Bauer, former President of Vaporphase and retained consultant to MIRATECH commented: "Becoming part of the MIRATECH family is a very positive milestone in the long history of Vaporphase, we are excited to integrate our product line into the MIRATECH sales channels both domestically and internationally".

Please visit *MIRATECH.com* for more information.

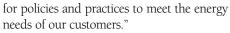
# Duke Energy names Harry Sideris new Florida President

Harry Sideris, Senior VP of Environmental, Health and Safety for Duke Energy, has been named Duke Energy's State President in Florida, effective Jan. 1, 2017.

Sideris, 46, succeeds Alex Glenn, who has been named Senior VP of State and Federal Regulatory Legal Support. Glenn, 51, will be based in Charlotte, N.C.

As State President, Sideris will be responsible for the financial performance of Florida and manage state and local regulatory and government relations, and community affairs. He will also work with Glenn's team and the corporate and regulatory strategy team to advance rate and regulatory initiatives in Florida. Sideris will be based in St. Petersburg.

"Harry's decades of diverse industry experience have prepared him well for this important role," said Doug Esamann, Executive VP, Energy Solutions, and President, Midwest and Florida regions. "More than 1.7 million customers across Florida depend on us. Harry understands that responsibility. In his new role, he will continue to advocate



Sideris joined Progress Energy (formerly Carolina Power & Light) in 1996 and served in numerous operations, maintenance, technical and leadership roles across Progress Energy's generation fleet in the Carolinas and Florida – at both the plant and corporate levels. In July 2012, following the merger of Duke Energy and Progress Energy, he became VP of Power Generation for Duke Energy's operations in the western portion of North and South Carolina, which included coal-fired, hydro and combustion turbine plants. In August 2014, he assumed his current role.

"I look forward to my new role in Florida working with the employees, customers and the community to continue building on our company's legacy and commitment to the Sunshine State," said Sideris. This is an exciting time for Duke Energy due to the transformational change taking place in the energy industry. We're driving innovation, bringing greater value and choices to our customers, modernizing the power grid and generating cleaner energy."

Sideris earned a Bachelor of Science degree in chemical engineering from North Carolina State University and a Master of Business Administration degree from Campbell University.

Please visit www.duke-energy.com for more information.





# **POWERFUL, FLEXIBLE LOAD BANK CONTROL.**

**SIGMA is a multifunctional embedded load control system** specifically designed for ASCO load banks. Flexible, Feature Rich and Cost Effective. It is the best-in-class solution for a variety of applications.

SIGMA gives intelligent, fast, user-friendly control and accurate instrumentation with outstanding test features and data acquisition capabilities. SIGMA brings a cost effective solution to today's power testing requirements which require high level instrumentation, data capture and verification.

The ability to network multiple load banks of differing capacities and combinations all controlled from one hand-held or PC is just one of the many benefits SIGMA brings its users.

For more information please contact customercare@asco.com

www.ascopower.com • 800.800.ASCO



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