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2015 EGSA Fall Conference Review

How Green are We, Really?

EGSA 50th Anniversary Time Capsule Interviews

Genset Engine Heating in a Data Center Environment

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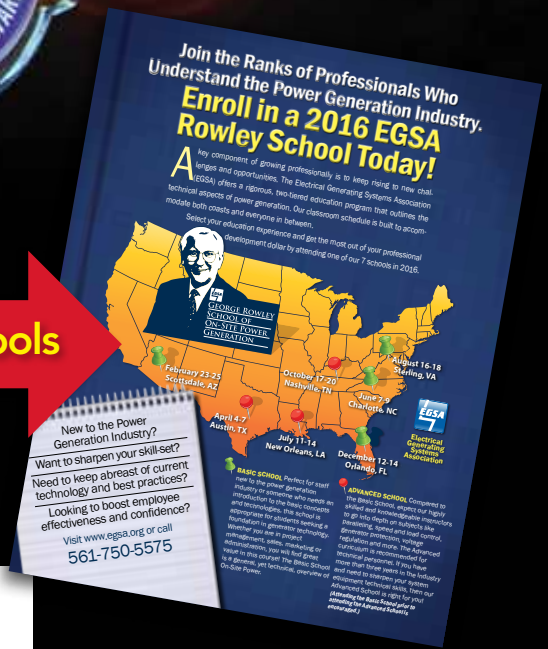

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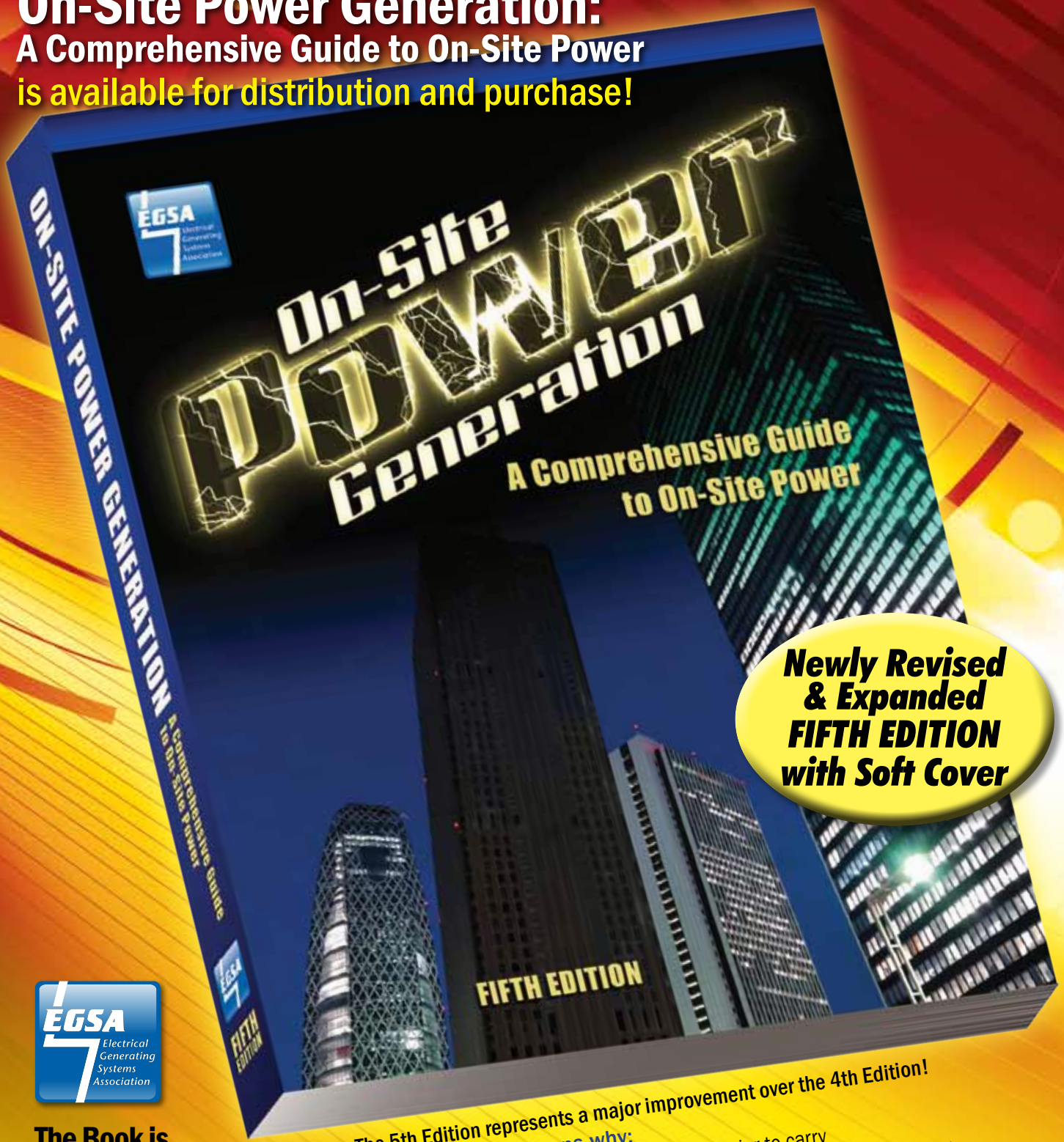

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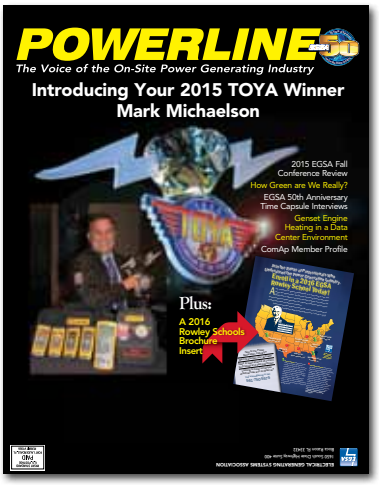
CONTENTS

Volume 50, No.6 • November/December 2015

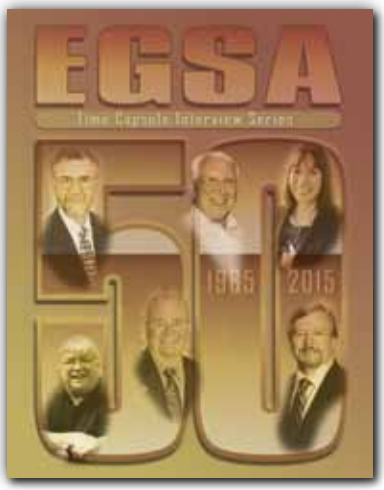
Columns

Features

Departments



On the Cover:
Introducing Your 2015 TOYA Winner, Mark Michaelson; Page 20.



EGSA 50th Anniversary Time Capsule Interviews: Looking Back on 50 Years; Page 36.

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EVENTS CALENDAR

Conferences

EGSA 2016 Spring Conference

March 20-22, 2016; San Antonio, TX

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 2016 Fall Conference

September 11-13, 2016; Sacramento, CA

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.

EGSA 2016 George Rowley Schools of On-Site Power Generation

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Basic Schools

February 9-11 ..... Scottsdale, AZ
June 7-9 ..... Charlotte, NC
August 16-18 ..... Sterling, VA
December 12-14 ..... Orlando, FL*

*To be held concurrently with POWER-GEN International 2016

Advanced Schools

April 4-7 ..... Austin, TX
July 11-14 ..... New Orleans, LA
October 17-20 ..... Nashville (Brentwood) TN

Industry Trade Shows

POWER-GEN International 2016

December 13-15, 2016; Orlando, FL

The world's largest show for power generation, featuring the EGSA On-Site Power Pavilion. For exhibit information, contact Liz Bustamante at (561) 750-5575, ext 206 or via e-mail *l.bustamante@EGSA.org.*

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Ed Murphy
2015 EGSA President
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"I Won't Back Down..."

Mentoring, Membership and the Rollout of an EGSA Ambassador Program

This lyric from Tom Petty is very appropriate for my last article as EGSA President. EGSA Staff and I have joked that there is still great work to get done and how quickly the term has come and gone. This lyric sums up how I'm feeling.

One of the fine traditions that has made the EGSA community so strong, is that with only 365 days as EGSA President, you must come in with your initiatives to accomplish and hope that the ideas get implemented before you leave office.

While a term on the Executive Committee is indeed 5 years, these last 2 go really quickly…which brings me to the topics I selected a few years ago, the ideas that inspired me before I reached this title and what I plan to focus on after January 1, 2016. Mentoring, Membership and the rollout of an EGSA Ambassador Program.

> *"Well I know what's right,*
> *I got just one life*
> *in a world that keeps*
> *on pushin' me around*
> *but I'll stand my ground*
> *...and I won't back down."*
>
> *Tom Petty*

Mentoring

When you think of mentoring as it relates to a volunteer organization like EGSA, each and every individual can and should be a mentor. Being an optimist, the level I'd like us to reach includes challenging you (my fellow members) to attract the kind of members that you'd like to meet. That doesn't mean going out and recruiting your competition, or maybe it does, but first and foremost, it should mean that you take a vested interest in pulling in the right kind of talent to our group. We, in turn, will show our recognition and hopefully reward you in some meaningful and memorable way.

Each of us is rewarded by the individuals that begin to show up at our conferences. The expanding list of exhibitors in the EGSA On-Site Power Pavilion at POWER-GEN Int'l is another great perk. There are a host of other great results that will occur if our members take ownership of the list that we have steadily grown in these past 5 years. We are asking everyone to extend a hand to those who may seek activity, but haven't found their niche within EGSA.

Just as others have come before me, I've searched for creative ways to help members see value from their first interaction with EGSA. There have been several tactics that we've tried this year to see if we could promote healthy change by tweaking things within our control. For example, one of the things we tried in 2015 was inviting our 2nd Timers (from the Spring Conference in Jacksonville 6 months earlier) to attend our New Members/First Timer Reception and impart to the "real" First Timers and New Members exactly why they had returned.

I'm pleased to report that this worked with great success! In looking around the room, I couldn't have been more impressed that everyone in Jacksonville and Denver were engaged in seeking out someone to speak with...there were no wallflowers at either event and I think our 2nd Timers contributed greatly with the tips, testimonials and encouragement. I also appreciated the ownership that our 2nd Timers demonstrated. Very cool.

Special thanks also go to the Fairbanks Morse Engine folks, who have provided an identity for the First Timer/New Member Reception with their sponsorship. As one of our oldest manufacturing members, they stand behind this valuable hour in the lifespan of an EGSA Member. After all, as exhibited in the EGSA Time Capsule Interview series, we all seem to remember our first EGSA event!

The next tweaks that were made this year had to do with the timing of communicating the value of EGSA Committees, as well as the upcoming agendas for each next meeting without ever having met a member for the first time.

As the emcee for 4 years, I've been watching the way that people respond during our Monday Welcome Lunch. Observing the attendance over the years, I've come to the conclusion personally that the luncheon is always packed (i.e. no one misses it) and that people like to cut out at around the 45 minute mark because they need to check in with their respective offices. (i.e. business doesn't stop for the majority of us when we attend an EGSA Conference).

Back to the idea… recognizing that once a member has attended 1 or 2 conferences, it no longer takes convincing to attend one or more committee meetings….after all, it is the easiest way to have a voice and to get a great EGSA overview in a short amount of time. Committees also seem to put like-minded people and programs together.

With that in mind, spend time with a 1st or 2nd Timer. Learn about them personally and then guide them to a committee that they could have some input and impact on. There are benefits to both the organization and the individual. This is how we will continue to grow EGSA during our Conferences.

In a group of 150 people say, (the First Timer/New Member Reception for example) it's also a lot more personal and a lot more manageable. That's why we no longer use valuable networking time at the Welcome Lunch with our Committee Chair pitches. Those pitches are now made in the New Member/First Timer Reception, where they count! The results were truly evident in Denver. More than a handful of our committees reported record attendance or committee growth, as we like to call it. When we have to bring in more chairs, you know someone did something right.

Helpful Hint When Registering for an EGSA Conference

It's so helpful when registering for the conference that you select your committee attendance. It lets us know how many chairs to put in the room, what size the room should be, as well as the layout of the room. Additionally, it helps fellow attendees see where you are going, by wearing the committee ribbons provided at registration, and that may be just the right encouragement someone needs.

The EGSA Ambassador Program…coming to an EGSA Conference near You!

Harnessing energy, we certainly know a lot about that subject, but when it comes to applying those rules to people, the same laws do not apply. People (and the act of recruiting them) are one area that I personally know a lot about.

So, just how do you go about recruiting new members for an organization that is 50 years in the making? One would assume we might have reached saturation of the market, but that's not true. Every day, Staff is looking for innovative ways to reach markets that our Strategic Long Range Plan (SLRP) has identified as potential growth markets for EGSA. With that in mind, and at the great suggestion of my fellow Board Member, Katie Evans (Diesel & Gas Turbine Publications), I'm pleased to report that EGSA is moving forward with an EGSA Ambassador Program that we will implement and champion.

In our initial rollout, we will enlist people like Katie, who, at the end of her Board term in 2015, still wants to be actively engaged and serve as a resource for new members. Our EGSA Ambassadors will be hand selected and identifiable; they will assist new members in becoming active in our work and social activities.

Membership

Since the early 1990s, I've been a member of EGSA. During that time, I've tried several different committees, have worn a lot of different hats and have always been interested in this industry. EGSA has provided me with a firm foundation in on-site power, a great list of accomplishments that I feel a part of and several lifelong friends.

The only thing that could make this list any better is to encourage other members to gain the same valuable set of tools and industry knowledge. That's why, once again, I'm shifting my focus and want to spend my volunteer time on EGSA Membership… whether it is soliciting new members, the creation of membership tools that will help us reach new industry professionals or simply by adding zest to the Membership Committee meeting.

In closing, I'd like to thank you for allowing me the opportunity to represent this organization for the past year. It's been my honor.

If you have ideas to incorporate into any of these areas of concern, let me hear from you at *e-mail@EGSA.org*. Don't sit on the sidelines! It is time to bring EGSA into our next 50 years of service to On-Site Power! ■

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m.pope@EGSA.org

Failure IS ~~NOT~~ an Option – and it Isn't All Bad

Interesting statistics have come from our Technician Certification program; only 44% of the technicians that have taken the Journeyman test this year have passed and become EGSA Certified. Historically, the pass rate has been 75 – 80%. So what caused this dramatic change? The test and the required passing score changed. We raised the bar.

The EGSA Technician Certification Committee, chaired by Jack Petro (ASCO Power Technologies) is a small, dedicated group comprising manufacturers, distributors and certified technicians. During 2014 they determined that the test needed updating to include some new topics and technologies and many of the questions needed fine tuning. The Education Committee, chaired by Tom Wein (Generac Power Systems) also provided some valuable input and direction.

The required **passing score was raised** from 75% to 80% so 160 correct answers out of 200 questions is now required – up from 150. The test is definitely more technically challenging and requires studying, field experience and a solid grasp of the subject material in order to pass.

"Armchair technicians" need not apply!

And the take-away from these stats?

1. Technicians that are **preparing to take the test** should do so with the EGSA Study Guide and the 5th Edition of ***On-Site Power Generation*** close at-hand. Technicians preparing to retake the test will be able to learn from their incorrect answers and know the areas of on-site power generation where more studying and education is needed.
2. The generator technicians that become **certified at the Journeyman** level are GOOD; in fact, they are the best of the best. They have the knowledge and experience to analyze and correct almost any generator system fault.
3. **Employers of EGSA Certified Technicians** have certified proof of high competency within their service team. And the test results can be used by the technician to indicate to the employer where additional training may be needed.
4. Journeyman may be key teachers and trainers of other technicians – as exemplified by our Technician of the Year Award winners (TOYA). Distributors and Dealers that have EGSA Journeymen on staff certainly have something to brag about and advertise – **WE EMPLOY EGSA CERTIFIED TECHNICIANS.** This sets them above other companies in their area that have not gone beyond their own and manufacturer training - and especially if they are able to add a qualifying clause to generator set specifications. See below.
5. **Facility managers and generator set users** are assured that when their equipment is serviced by an EGSA Certified Journeyman Technician it will perform as designed, and whenever needed.

If you would like to see what a technician needs to know, the study guide may be purchased for a small fee of only $50 at EGSA.org. You will find it to be a useful training tool.

IMPORTANT FOR TECHNICIANS

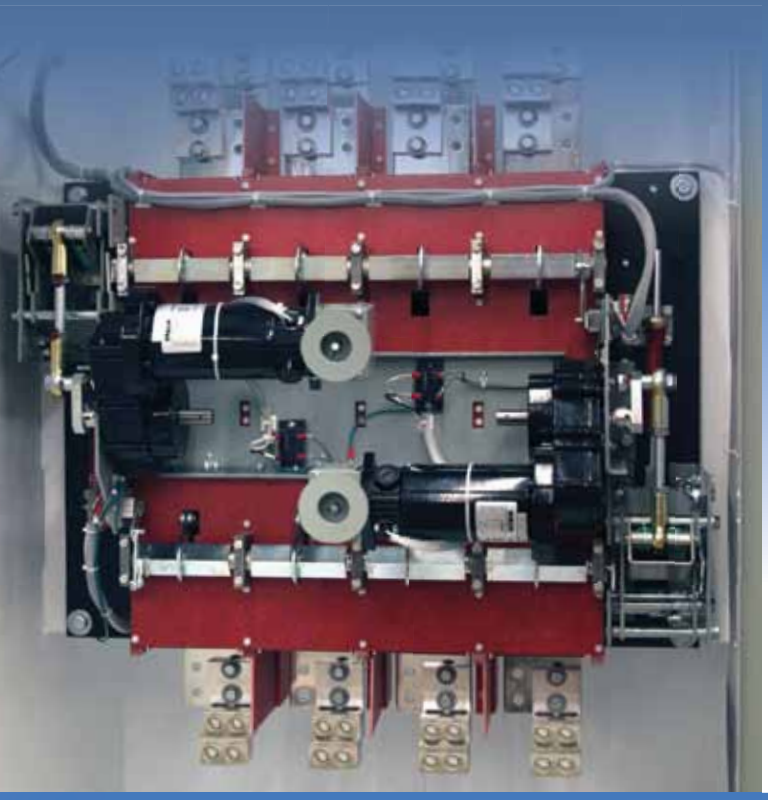
If you have previously passed the test and need to re-certify, or if you are going to take the test for the first time, **do not expect to pass if you don't use the 2015 Journeyman study guide.** Years of field experience will help but that alone is no guarantee that you will pass this exam. It is, deliberately, a TOUGH test. More techs have failed the test than have passed it the first time and become Certified. Consider it a challenge!

IMPORTANT FOR EGSA DISTRIBUTORS/ DEALERS

Would you like to have a competitive edge with your generator set sales? Have an additional qualifier inserted into the electrical specifications. A number of distributors have already suc-

Continued on page 59

The best line of automatic transfer switches provides a choice of 30-cycle or 3-cycle closing and withstand ratings



Most transfer switch manufacturers offer some combination of 3-cycle and short-time closing and withstand-rated switches.

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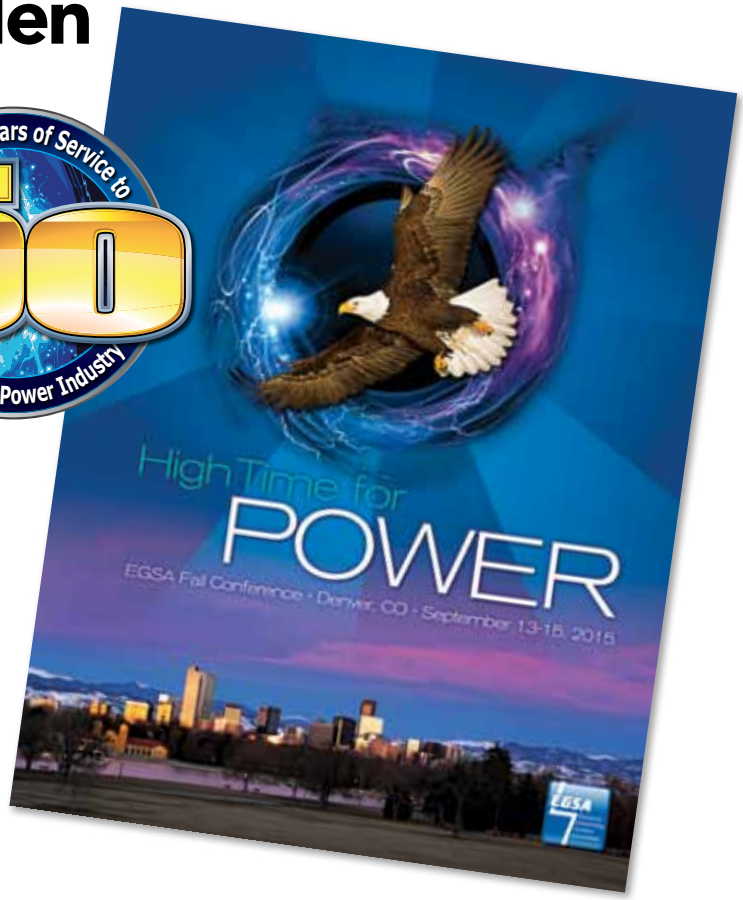
With a recorded 326 conference attendees, we welcomed 70 First Timers and 9 New Members to EGSA at our Fall Conference.

Celebrating Our Golden Anniversary in the Centennial State

Since 1978, EGSA has visited the great State of Colorado 3 times. We say that the third time is a charm! With lovely weather, a superior speaker slate and networking at its finest, EGSA hosted our 50th annual Fall Conference at the Hyatt Regency in Downtown Denver at the Convention Center.

With a backdrop featuring the Colorado Rockies, amidst the urban surroundings of the 'Mile-High City,' our Members focused on active participation and being immersed in on-site power during the 3-day event. "There were several great 'moments' during the conference, but I think the one that was most special to me was seeing the EGSA TOYA receive his award Monday Night. What a great accomplishment!" shared Rick Morrison (Nixon Power Services) EGSA Board Member, who, along with Katie Evans (Diesel & Gas Turbine Publications), Walter Petty (Atlantic Power Solutions) and Lanny Slater (GFS Corp.) each received their Outgoing Directors plaques for a job well done these last 3 years as BOD Members from 2013-2015.

2015 EGSA President, Ed Murphy presents Outgoing Director plaques to Walter Petty, Rick Morrison, Katie Evans and Lanny Slater.



How about their replacements? Beginning January 1st, the incoming Board Members (refer to page 60 for a list of incoming Board Members) will continue the tradition of providing continuity of leadership for EGSA by volunteering for the next 3 year term, from 2016-2018, as members of EGSA's Board of Directors.

In addition to these new Board Members, we will also welcome Todd Lathrop (Eaton), as our 2016 incoming Secretary/Treasurer.

The Fall Conference Speaker Slate

Dakota Meyer is one of a small and elite group, as a living US Medal of Honor recipient. He was our keynote speaker on Monday, sharing his motivational and personal story on both accountability and achievement. He was inspiring as a speaker and as an American. Dakota's presentation captivated our audience, with many of our members asking questions and creating a dialogue on how to make the most out of the hand that you are dealt. As a young man, Dakota was faced with difficult choices and ultimately, faced the worst day of his life at the age of 21 years old. He shared his personal story and message on what it really means to make sacrifices.

Directly following our first Exhibitor Showcase break, where 40 of our member firms hosted tabletop displays, Jason Knedlhans (UL LLC) provided his unique member presentation on the development of a global standard and how we, as EGSA Members, have a voice in influencing the industry as a whole. Did you miss all of the action? This presentation can also be viewed via our EGSA YouTube channel!

Photo A: EGSA Emcee (and 2015 Vice President) Charlie Habic introduces local 5th grader, Mia Keene, to the EGSA stage to sing America the Beautiful. Gillette Generators, Inc. also sponsored this special performance.

Photo B: Keynote Speaker, Dakota Meyer.

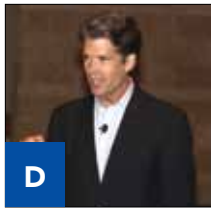


Photo C: Jason Knedlhans Photo D: Rick Farrell

Photo E: David Avrin Photo F: Joe Fiorito

Photo G: Diesel Fuel Maintenance Panel: (L to R) Brian VenHorst, Luke Jaynes, Dan Bigelow, Brian Boezi and moderator, Kurt Summers.

Our Conference Planning Committee kept the action going with the closing presentation Monday with Rick Farrell of Tangent Knowledge Systems, who harnessed his sales presentation on how selling has absolutely nothing to do with selling.

The next morning, our members had a full breakfast (hosted by Woodward) followed by branding expert, David Avrin, who began his comprehensive presentation on personal branding, "It's Not Who You Know, It's Who Knows You."

We rounded out Tuesday's General Session with two additional EGSA-member hosted presentations, the first, a best practices panel that included a well-rounded mix of EGSA members, Luke Jaynes (United Alloy), Brian VenHorst (Tramont Manufacturing LLC) and Dan Bigelow (Separ of the Americas, LLC), along with EGSA First Timer and New Member, Brian Boezi (B3C Fuel Solutions) joined in on a Fuel Maintenance Panel Discussion, moderated by Kurt Summers (Loadbanks of America).

Last, but certainly not least (and believe us, it was planned this way), Joe Fiorito (Caterpillar Inc.) provided a superior overview of Mobile Generators and the Rental Market in North America. Complete with video, Joe was quick to point out some of the lessons learned in 'riding the storm out' as several examples referenced Superstorm Sandy. For the past 15 years, Joe has been an OEM, providing support and strategy globally in the power rental market. Joe was also a First Timer at the EGSA event.

Several of these EGSA-Member presentations can also be viewed on our EGSA YouTube channel, please check them out!

EGSA Committees – the Ones to Watch

"Wondering how you might purport the industry, the Association and do some heavy lifting?" asks Walter Petty, the incoming 2016 Chair of the EGSA Membership Committee. "The Membership Committee has got something for you. We plan to shake it up in 2016, focusing on recruitment, member retention and the future of our EGSA membership roster. We are seeking committee members that want to breathe new life into our membership program and help others see the value and return on investment for being active in this Association. If you are looking to partner in the success of on-site power and our global trade association, then we are looking for you!"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3


4


5


6


7


8


9


10


11


12

13


14


15

Photo A: Tuesday's Meeting of Members: EGSA Committee Chairs report on the previous day's activitities at their respective Committee meetings.

"I am always interested in Codes & Standards as an enclosure manufacturer, but my involvement in EGSA includes immersion in the subject as Chair of the Codes & Standards Surveillance Committee. One of the subjects that our committee has focused on for a couple of years is to make the work of our partners like UL and Intertek seem less daunting…and to also make the subjects that our organizations have in common more approachable. It was great to see this effort continue in Denver with the UL presentation and the lively discussion that followed," reports Mike Witkowski, Pritchard Brown, LLC.

What to Watch For in 2016

So what do we have to look forward to now, you may ask? "We're going to be **'Spurring on the Next 50 Years'** in San Antonio next March," says Charlie Habic. "We have strategic value already built into the 2016 Spring Conference schedule. No matter which side of the fence you sit, both the Democrat and Republican primaries conclude no later than the second week of March. That puts EGSA in a unique position during our March 20th - 22nd dates, with Tucker Carlson already secured as our keynote speaker."

Tucker Carlson is the anchor of Fox and Friends Weekend and the editor-in-chief of The Daily Caller. He is also a former co-host of Crossfire on CNN and a longtime newspaper and magazine writer, reporting from places such as Iraq, Pakistan, Lebanon and Vietnam. He has been a columnist for New York magazine and Reader's Digest. His most recent book is entitled, Politicians, Partisans and Parasites: My Adventures in Cable News and he is going to be taking the EGSA General Session stage to bring his unique perspective to the 2016 Presidential election.

We hope you will join your fellow members next year. We plan to continue our tradition of providing superior member value at our conferences in 2016. Don't miss out on the action, save those dates!

Photo B: Rick Hodgkins (Phoenix Products) wins the iPad Mini (sponsored by Separ of the Americas, LLC) on Monday morning. Dan Bigelow conducted the drawing and awarded the prize.

Photo C: Medal of Honor Recipient, Dakota Meyer with Jim Wright. (EGSA President 1990)

"I thought the Fall Conference in Denver was one of the best in recent memory! Great location; great speakers; and great friends! I heard so many positive comments from members attending the conference. EGSA did it again!"

EGSA President 2006, Dale Slemp

"The Fall Technical Conference provided an excellent finality to EGSA's 50th anniversary year. I enjoyed the "give and take" during the Q & A period following Jason Knedlhans' Global Standards presentation, especially the comments regarding overlapping standards resulting in increased costs to manufacturers having to be certified by more than one Standards writing body.

I also enjoyed the Education Committee meeting, and the planned expansion of the Technician Certification program to add Load Bank Testing Certification. This is an area that needs special skills and understanding of the various testing methods."

EGSA President 1990, Jim Wright
(photographed above with Dakota Meyer)

1: Daniel Herring, Matt Miersch, Dave Murphy & Russell Glenn 2: Herb Daugherty & Dennis Pearson 3: Greg Linton & Lyndon Risser 4: Brendan Filby & Lanny Slater 5: Bill Havrilla, David Brown & Bob Apple 6: Cal Dufault, Kevin McKinney & Nic Phillips 7: Brad Affeldt & Todd Lathrop 8: Dan Bigelow, Charlie Habic & Tim Geary 9: Addie Mathes & Richard Knittel 10: George Kuczenski & Bob Lewis 11: Leslie Beasley, Kim Giles, Ed Murphy, Kim Hafich & Michelle Murphy 12: Donna & Gary Bance 13: David Cutro, David Stringer & Daniel Herring 14: Jack Burke & Don Kujawski 15: Doug McGaughy, Tom Wein & John Kelly Jr.

That Day at the Plains End Power Plant!

Our EGSA Gearheads showed up in full force on Tuesday, as 34 of us hopped a bus (ok, a luxury coach) to Golden, CO thanks to ComAp, who sponsored the transportation that afternoon.

Imagine this…at the end of a dusty road, literally, the Plain's end, our motorcoach pulled into a gravel road lined with abundant sunflowers and small native scrub trees. There were no tumbleweeds rolling by, but this moment could have easily turned comical if we had played the epic musical score from (the Clint Eastwood classic movie) "The Good, the Bad and the Ugly." As desolate and eerily quiet as it seemed in the lot, as soon as we entered the building, we were met by the warm and gracious staff of 13 at the Plains End Power Plant (who actually weren't kidding when they labeled our Gearhead tour fascinating!!).

This facility boasts 26 Wärtsilä 20V34SG engine gensets, totaling 230 MW of quick-start load. When asked how often the staff there hears the engines start up, both the Plant Manager, Tommy Arnett and the Assistant Plant Manager, Chris Gaines, reported that it was within 1% of the time. These gensets meet the need of the reduction of fluctuations in power that the renewable power (wind and solar) impose on the power grid. You could say that these gensets meet the vital need of picking up the slack. You can also imagine our gearheads' combined shock when the switchgear room came alive! Several looked to Tommy, asking if this was his way of providing an extra special tour component, just for EGSA, and he just shook his head, "I might have offered to start one, but not 14," he laughed.

Since we had already broken into more manageable groups of 6-8, each tour group got their own unique tour experience. Some were in the transfer room when the engines started, some were on the catwalks above the engines as the turbo power

Continued on next page

Photo A: EGSA Members enjoyed an eventful tour at the Plains End Power Plant on Tuesday afternoon.

Photo B: Here is where the magic begins, the Switchgear room!

Photo C: Where were you when the power came on?

Photo D: Several of our members got to see their own products in real world applications, for example this switchboard with DEIF instrumentation.

Photo E: They weren't kidding with this signage!

Photo F: The Wärtsiläs

Photo G: You Must be At Least This Tall to Ride This Ride - the safety and security briefing included important precautions and instructions.

1: Brent Stephens, Mark Hardwich, Rick Morrison & EJ Ochoa 2: Jeanie & Andy Briggs 3: Jim Gallagher & John Meuleman
4: Josh Lunde & Richard Johansen 5: Paul Feld, Deb Laurents & John Garcia 6: Jarrod Hicks, Glen Howard & Rick Hodgkins
7: Jake Salzl & Christian Lujan 8: Michelle Murphy, Paul & Sue Feld, Kim & Kirk Hillbig 9: Kathy Bynum & Thad Papciak
10: Joe Fiorito, Tricia Schweiss & Bill Laubach 11: Justin McMahon & Chris Mooberry 12: Mark Steele, Jeff Custer & Jeff Servis
13: Maria Surprise & Steve Sappington 14: Mark Jentges & Jack Harris 15: Steve Stoyanac, Walter Petty, Bill Kaewert & Jacob Petty


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kicked in and some were outside and heard the gas begin "glug, glug, glugging."

They boast the best simple cycle efficiency compared to all other technologies, including gas turbines and aero derivatives. Their engines can burn a wide variety of fuels from multi-fuel applications to natural gas only engines, all with the latest environmental systems and controls.

Here are a few highlights, as reported by our Members:

"As a 1st Timer, I was very impressed by Xcel Energy's investment in power redundancy to ensure their customers are never left in the dark! Oh, and its clean NG burn also…"

Paul Chytka, UNIVERSAL Acoustic & Emission Technologies

"Great to see (and hear) a power plant start up when you are taking a tour, big power! I even got a lead from the Plant for equipment they needed! The Gearhead Tour was a very entertaining field trip."

John Dutch, Crestchic Ltd.

"It was a very cool experience to be in the switchgear room when the Plant came to life…then running out to the main facility area to see all the generators warming up to full power."

David Jesberger, Mosebach Manufacturing Co.

"As a guy who has spent a majority of time around 1800 RPM or faster generator sets, when 20 of the Wärtsilä 18V34SG 5.7MW units started, I wondered in the back of my mind, 'when are they going to come-up to speed?' That's when I realized they already were at their rated 700 RPM. As a gearhead, there is only one word to describe the feeling of all that horsepower… 'Amazing'! What a great way to spend an afternoon!"

Mark Michaelson, Collicutt Energy Services, Inc.

"Seeing a couple dozen big engines lined up like that is a rare and amazing sight; hearing them start up and run was an unexpected bonus. The Plains End staff were truly gracious hosts to EGSA, and also terrific partners with Woodward."

Paul Johnson, Woodward, Inc.

"Seemed like enough power in all those gen-sets to move a Rocky Mountain!"

Keith Page, Selkirk Corp. / Pressure Stacks

"I am always looking for a chance to be around large engines when they start up. It all began when I was 13, on a visit to the British Rail Western Region depot in Westbury, UK. I got the opportunity to inspect a Class 47 Brush diesel electric locomotive with a Sulzer V type engine. The driver started the engine for me and from that day on I was fascinated by the sound, smell and raw power from these types of engines.

While some of us were in the switchgear room at Plains End, we were suddenly alarmed by the sound of medium voltage breakers closing in rapid succession. We were told to move out of the room as we experienced the final engines firing up, using the on board air starters. The sound is like a high-pitched whine, as high pressure air turns the turbine blades in the starter motors. The subsequent ramp up of the remaining large 5.7 MW generating sets reminded me of my childhood and that long ago eventful day!"

Dave Stringer, DIEF, Inc.

So, we suspect that our EGSA Gearheads are mostly like Dave Stringer, in that once you catch the bug to see and hear engines like these; it is hard to get out of your system!! On that note, stay tuned for a cure for that bug at our Spring Conference in San Antonio, as the EGSA Gearheads have another great tour planned for Texas!

We will be visiting the campus of the Southwest Research Institute (SwRI). The tour will include their Locomotive Emissions Testing Center. Here, up to 3,000 hp locomotives are brought to their siding, where the results of emission control technologies can be measured and evaluated. More details will be forthcoming when we launch the EGSA 2016 Spring Conference micro-site!

1: Tom Wein, Kim Giles, Bob Hafich, Katie Evans & Greg Linton 2: Vaughn & Leslie Beasley 3: Walter Petty & Babak Mohajerani
4: Will Ferrigno & Glen Prisciak 5: Michelle Murphy, Rick and BB Morrison 6: Steve & Barb Stoyanac and Richard Johansen
7: Josh Lunde, John Svendsen & Paul Wilhelm 8: Todd Riemann, David Oshefsky & Brian Cahill 9: Tom Cook & Isabel Ramos
10: Warner & Donna Bauer 11: Mike Witkowski, Bob Duffy, Martin Peko & Patti Albright 12: Kurt Summers & Michael Pope
13: Greg Linton, Joe & Linda Hafich 14: Robert Simmons & John Hoeft 15: Peggy Nunez-Piske, Bob Piske & Rafael Kolic

Interview With Our 2015 TOYA Winner, Mark Michaelson

Mark Michaelson has been a generator technician for more than 30 years and is considered a Master Technician in our field. He is passionate about the on-site power industry and has a zest for learning how things operate. 'a real Gearhead' as his wife, Renee, told us, Mark finds great satisfaction in fixing complex power generator equipment for Collicutt Energy Services.

As the winner of our EGSA 2015 Technician of the Year Award (TOYA), Mark joins Todd Vaughan (Kelly Generator and Equipment, Inc.) as our second winner of the industry award that honors one generator technician who not only possesses the well-rounded skill-set requirements of electrical and mechanical acumen, but also to the singular person who has consistently gone above and beyond for an entire career.

"Technicians are the unsung heroes in On-Site Power," says 2015 EGSA President, Ed Murphy, "as first responders, we hope this award will continue to be held in high regard by the generator technician community, especially with our EGSA Certified Techs." Recognizing that this segment of our industry did not have a formal awards program to showcase the strengths, talent and skills it takes to be the best, the EGSA TOYA also showcases the amount of time and attention that our technicians put forth for power generation systems and packaged engineered solutions.

The award was presented during EGSA's 50th annual EGSA Fall Conference in Denver, CO during the Monday evening Awards Reception and Banquet. Thanks to our generous industry sponsors of the program (including Gigawatt Sponsors Generac Power Systems, Inc. and Leroy Somer); Mark and Renee were able to join us to accept the award in person. In-kind donations were also presented as a part of the awards package, with Weidmuller sponsoring a tool belt, complete with insulated tools and FLUKE provided every generator technician's favorite asset, the FLUKE 3000 Industrial Kit.

Several members of the Collicutt Energy team were on-hand to celebrate. Steven Collicutt, CEO & Chairman, had this to say when presenting the TOYA to Mark, "At Collicutt Energy, our brand promise is 'Raising the Standards.' Mark, having a technician like you on staff is one of the ways we are able to uphold that promise to our customers. Having started in this industry as a technician myself, almost 30 years ago, I can truly say without a doubt you deserve and have earned this recognition."

Collicutt Energy is one of the largest power generator sales and services providers in the West. Recently, they signed a distribution partnership agreement with MTU Onsite Energy. Through the distribution agreement, Collicutt Energy broadened its geographical footprint, streamlined product and service delivery for customers, and is now poised to be on the forefront of innovation and advancements in the industry. Mark is a key component to this success.

The Man, the Guy, the Gearhead, the Tech Service-oriented… Professional…Responsive…Team leader…Mark has worked in more than twenty states and 6 countries. According to his peers, he has selflessly and determinedly given his time and attention to the power generation systems and packaged engineered solutions industries. "I have known Mark a long time and he has always strived to exceed the highest level of honesty, integrity, professionalism and accountability," shares David Brown, President of Collicutt Energy Services.

Since beginning his career with the U.S. Air Force in 1981, Mark has worked as a technician, supervisor and instructor, he has been a team leader with the ability to influence, motivate and lead colleagues through both hands-on training, as well as personal interaction skills. During Mark's time in the service, he was responsible for troubleshooting and repairing aircraft ground support equipment. He also supervised and trained repair technicians, and achieved the rank of E-7 Master Sergeant in his 22-year military career before entering the private sector.

"Technicians like Mark are responsible for servicing, maintaining, selling parts and providing customer assurance, but the ability to think and act under pressure is what separates elite technicians from the rest," adds David Brown. "Mark has worked on a number of emergency situation projects, sometimes working through the night to systematically diagnose a series of compound failure modes and restore power to the unit at full operating capacity. With his elite skill, ability and perseverance, Mark has served multiple metropolises in the world to repair the 'lifeline' to many."

Continued on next page

1: Jerrod Hicks, Hutch Hutcherson, Saul Garcia & Scott Martel 2: Sara Berg & Jil Holmstrom 3: Deb Laurents & Ed Murphy
4: Scott Andersen & Dan Andrus 5: Sebastien Peutat, Jonathan Oliviera & Dean Weigand 6: David Stringer, Adam Bartos & Vic Tohak 7: Robert Gore & Pat McKinney 8: Lanny Slater, Debbie Schilling & Paul Chytka 9: Rick Overheu & Doug Kindig
10: Marilyn Tarbet, Jack Burke & Katie Evans 11: Laura Elwell-Ham & Ted Fleming 12: Mike Rosbrook & Chad Youkers
13: Nic Phillips & Mike Murray 14: Randy Sadler & Mike Jurich 15: John & Debbie Kelly and Tom Wein


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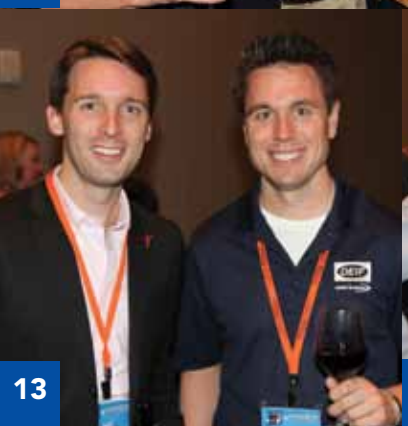
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In addition to his service with the military, he also served as a field technician, technical trainer and has also achieved the Master-Technician level with several manufacturers over his career. His diverse skill set has made him a commodity in the industry and he is often asked to travel long distances for projects due to his skill in power generation products, responsiveness and delivery of technical products and services.

Mark and his wife, Renee, along with their daughter, Rochelle, who is turning 10 this year, reside in Oceanside, CA. Mark also has a son, Chad, who is 29 and lives in Dallas. Chad works in the hospitality industry. Mark also has hobbies outside of power generation like paddle boarding, off road vehicles and classic cars. He also enjoys owning a couple of muscle cars, a 1966 Nova and a 1965 Nova SS, and the toys don't stop there! He is also a member of an enduro club; he boats and is an all-American husband and dad.

EGSA Staff sat down with Michaelson in early November to talk about the TOYA award and answer questions submitted by our membership. We received several inquiries via our EGSA Distributor Dealer Committee LinkedIn Page and we appreciated the member participation in celebrating Mark's achievement.

And with that, we begin the interview with our Member questions…

Photo A: Richard Knittel (Prime Power Services, Inc.), who led the process last year as Chair of the TOYA Working Group, and his wife, Addie Mathes pose with Mark and Renee the night before the Awards Dinner!

Photo B: The Collicutt Energy Team were represented well during our 50th Fall Conference! (L to r: Steven Collicutt, Mark Michaelson and Dave Brown (not pictured: Bill Havrilla, who also attended the event).

Photo C: To the victor goes the spoils…Mark was presented with the 2015 TOYA during the Monday Night Awards Presentation. To see a great video that recaps all of the action, visit our EGSA YouTube Channel at https://youtu.be/QMQXSEdzvmY.

Photo D: Our 2015 TOYA Working Group Chair, Al Powers (Powers Generator Service LLC), Mark and Bob Piske (Arizona Generator Technology, Inc.) spent time together after the formal awards presentation.

The following 3 questions were provided by Chad Youkers, VP Rentals Division - Sunbelt Transformer Ltd., EGSA Distributor/Dealer Committee Secretary

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

Mark Michaelson: "There simply isn't one job that stands out over such a long career, but indirectly, I feel the Master Technician role fulfills me in multiple ways. Even with my years in the military, I have kept things running to get a mission completed as a part of my job, I don't feel entitlement."

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

Mark Michaelson: "Everyone is talking about attracting young men and women that come out of college. My suggestion is we start with high school and begin to build apprentice programs to match up a student's skills and interests and align and recognize the future skills a student might need and help them attain the base knowledge as they go.

This technician role has multiple levels of learning and applied knowledge. The electronic side may seem much more important going in, but all of the skills are really needed, including the mechanical side, and then there is part that you really can't train on in my opinion, the 'MacGyver' side where you must think on your feet and handle great pressure to get the power on.

When it comes down to it, I really think you have to enjoy the pressure and the satisfaction for a job well done. It isn't easy to translate that to young people without spending a lot of time with them."

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

Mark Michaelson: "Getting and holding on to quality technicians to me is the biggest challenge we face in our industry. I don't think I am alone in that thought though.

I also see technology changes becoming an issue down the road. The technology that's out there now is going to change and that will probably mean relying less on reciprocating engines. In places like Southern California or New York, we may see inverter technology in more emissions sensitive areas."

Continued on page 25

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

Mark Michaelson: "I think I would do it all again, but I would do it differently. I would go out and finish my degree and have more impact as an Engineer. I would start over right before I started high school, finish college and then go into the military. I was lucky to find this niche, but I would have preferred to have had more prep going in."

The following 3 questions were provided by Rick Morrison, Sales Manager, Integrated Solutions, EGSA Board Member 2013-2015

"Why did you get in the generator business?"

Mark Michaelson: "Well, initially out of the military, I took a job in defense with McDonnell Douglas, but before I even went to work the industry was hit hard. So I went into nuclear power taking a position with Westinghouse Nuclear Services Division and I was gone 260 plus days of the year working 7x 16 hours. I was refueling reactors, everything from removing & replacing spent fuel assemblies into the reactor core, working with underwater cameras, refueling work started on the reactor head, which was very hard work, it was then that I decided that I could not do that my whole life. So I interviewed with the Cummins distributor (OC Power) that very year."

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

Mark Michaelson: "Internally, I think that I like to be the guy to prove everyone wrong that claims something can't be fixed. That is what really drives me. I want to know and fix a problem before anyone else shows up. From my experience, it feels like fuel and battery related issues are 90% of the problem, the rest are induced by the customer and/or end user and I like the satisfaction of solving all of these types of scenarios.

I also enjoy understanding the system(s) and reviewing it with an open mind and delivering solutions. People don't really want to have to think about their emergency power systems, they want them to work, that motivates me to get it right."

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

Mark Michaelson: "I have not been doing a very good job with that lately. My wife puts up with a lot of absences from me. For example, right now I have been gone for the last 17 days, so I don't get to do what I want to do on my days off, I have to be in tune with what my family needs and wants me to do. I would love to be home every night after a day at work, so we really focus on balance when I am there."

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?"

Mark Michaelson: "First and foremost, I don't think that I know everything. It is humbling enough to continue to keep my knowledge base up, but it is also in my opinion more about job satisfaction than it is about ego.

I don't know all the answers, but I am resourceful and know how to solve problems. I think that is how I continue to experience growth 30-plus years in the biz. I also recognize that I will always have this to fall back on because of this highly skilled trade. I think I can more effectively manage people and live up to the Master Technician skill-set if I know how to do the things I am requesting others to do. Whether it is filling out a warranty claim or fixing a system, there are so many variables in this industry...so that alone keeps you humble."

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

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

Mark Michaelson: "I am going to say yes, all the time. However, if you are asking if I had any memorable requests, I always found it a great story that for almost 6 years, I single-handedly took care of Johnny Carson's house back in the 1990s. He had 2 gensets on his property in Malibu, one for the primary resident and one for his guest house. He wouldn't let anyone else touch them."

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?"

Mark Michaelson: "Well, the biggest advancement was when they digitized everything and moved to (digital) integrated controls. That was when the industry kind of eliminated and combined things that were previously separated... everything from voltage controls, governors, regulators, etc. and redesigned the systems into all-in-one compact and more accurate controls. Don't forget that engine technology changed as well."

The following question was 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?"

Mark Michaelson: "It wasn't that hard for me, seriously. When I was in high school, I spent the last 2 years focused on getting ASE-certified as an auto mechanic. I have always loved to take things apart and fix them, from go carts to mini bikes, to lawn mowers.

Learning the electronic portion came during my years in the military and then later on, as a technical training instructor it made it easier for me to have the foundation to learn more on my own."

EGSA Interviewer "Mark, is there anything you would like to add?"

Mark Michaelson: "I would just like to say thanks so much to everyone who had a hand in this process. I am so grateful for the opportunity to get to know the EGSA organization better after winning the EGSA Technician of the Year Award!

I also received phenomenal tools and while I already owned several FLUKE meters, I am a big fan and nothing prepared me for that industrial set. The Weidmuller toolkit has also been used several times already. It hasn't been cold enough to wear my new leather jacket, but in a few months, I will surely get some great use from it.

It was such an honor to be recognized by my employer, Collicutt Energy, and my peers in the industry. As far as the trip to Denver for Renee and I, that was really amazing. My wife and family are very proud of me. I met so many great industry professionals and have such respect for the organization that I am definitely honored to receive the 2015 TOYA."

Thanks to our members who took the time to take part and have a voice in providing these interview questions! Please stop by the EGSA Booth at POWER-GEN Int'l, we have a token of our thanks waiting for you all who submitted the questions above!

Green Energy: Threat or Opportunity?

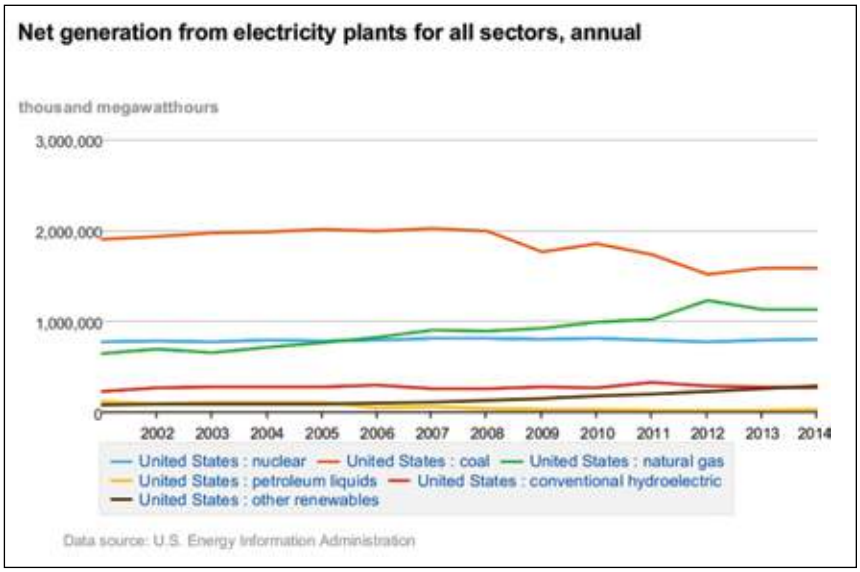
This is the first in a series of articles leading up to the EGSA Spring Conference in Texas where we will have a panel looking at this very question. The first article in this series looks at where we are in the process of "Going Green" and the rising influence of green energy technologies. Future articles will look at the effects green energy technologies are having on the grid, environmental/EPA concerns, The Smart Grid and future business opportunities.

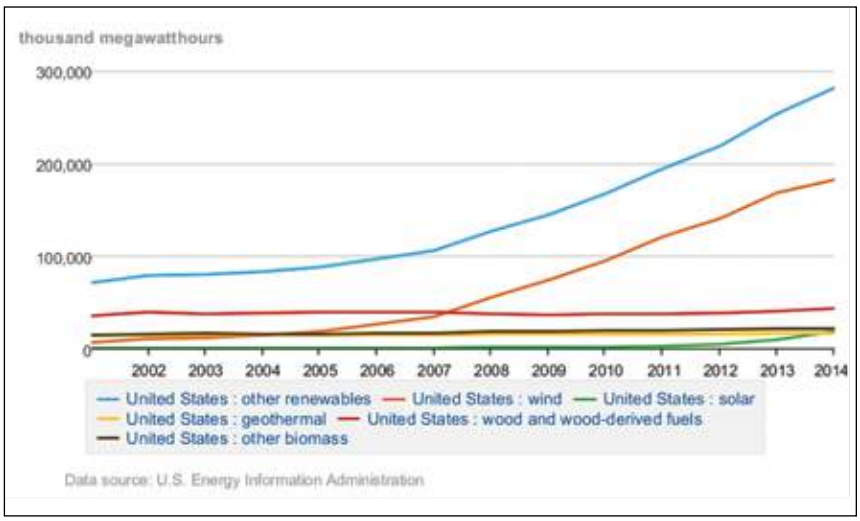
How Green Are We, Really?

By Steve Evans, Director of PCS Business Development, ASCO Power Technologies, an Emerson Network Power Business © 2015

Every day there is something in the news relating to electrical energy. We are in the midst of an energy revolution. Windmills pop up like corn stalks in the West and Midwest and solar panels cover rooftops and pastures from Florida to Hawaii. What does all this mean to the RICE-based (reciprocating internal combustion engines) Distributed Generation Industry?

Let's start by looking at where our power comes from. (top right) All utility companies, utility power plants and non-utility power producers over 1MW (aggregated, not each generator), including qualifying co-generators, small power producers, and independent power producers that sell electricity are required to submit electrical energy data to the Energy Information Administration run by the Department of Energy. Looking at the "Net generation from electricity plants for all sectors, annual" chart, historically coal has been the primary energy source for electrical power production in the USA. For more than a century coal has been king. It will still be a key source for many years to come, however one day this past April natural gas passed coal for the first time as the largest source of energy for electricity production. Then again, during July and August, more electricity came from gas than coal for a day. Then in July coal and natural gas almost even out for the month at 139,000,000 MWhr (139TWhr) produced from each source. August shows gas ahead 138,000 to coal's 135,000 MWhrs. Was July the turning point on this century-old tradition? Will gas lead coal from now on? All indications are these trends will continue.





Now look again at the same chart. Take note of the brown line near the bottom of the graph representing Other Renewables. That includes all power produced from solar, wind, geothermal, and biomass. In July 2015, commercial wind power plants produced 13,632 MWhr, solar 2,813 MWhr, or 3.4% and 0.7% respectively, of the total MWhr produced. *Only about 4% of the energy produced was from solar and wind combined!* The chart (bottom right) expands just Other Renewables so we can see that wind has the largest gain over the last few years in the category and solar, although increasing and with all those panels we see everywhere, continues to be just a fraction of 1% of the total.

For all of 2014, wind produced 4.4% and solar (PV plus thermal) produced 0.4% of the MWhr consumed in the US. While these technologies may be important politically, wind and solar could disappear completely and the grid would hardly notice.

Installed Capacity: kW vs kWHr

Now let's look at installed capacity in MW instead of energy actually produced in MWhrs. 2014 data from www.eia.gov shows an installed capacity of 1,001,289 MW combined for coal, natural gas, nuclear and hydro for a total of 86% of all available power generation. Wind energy has 5.2% or 60,172 MW of the installed capacity. This differs slightly from the American Wind Energy Association www.awea.org that reports 65,877 MW installed and operational at the end of 2014. Solar photo voltaic plus solar thermal combined have 0.57% or 6,674MW of installed capacity.

Summarizing 2014, wind has 5.2% of the installed capacity MW and produces about 4.4% of the energy in MWHrs. Solar has 0.57% of the installed capacity in MW and produces about 0.4% of the energy in MWHrs.

Capacity Utilization and Related Measurements

Two of the most commonly used measurements are capacity utilization (or capacity factor) and availability factor. Both look at the power produced compared to total possible power that plant could produce. Annual Capacity Utilization (ACU) has been defined for years as [energy produced in WHr] / [365*24* installed capacity in Watts]. For example, a 1MW genset running (24 x 365 =) 8760 hours will produce 8760MHrs per year at 100% ACU. Using Energy Information Administration data again for consistency, nuclear power plants are the highest ACU with typical numbers between 89 and 92% ACU. Coal plants usually average 57-62%. Gas combined cycle plants are in the 40-60% range. Wind power typically runs between 10 and 34%, but some installations have reported as low as 6.25% *(data from India wind installation)*. Using 2014 AWEA data, with 65,877MW of capacity and the energy produced in 2014 was 181,791,000MWhrs results in an ACU of 31%. Solar, which can never exceed 50% with an average of 12 hours per day of sunshine, usually runs about 25% ACU.

ACU has been debated in the generation industry recently. Up until a few years ago, it was widely accepted to calculate ACU based on nameplate watts times 8760 hours per year. But some felt a better measure is theoretical maximum amount of possible power, not the nameplate times hours in a year. For example, a solar panel will only see an average of 12 hours daylight per day, the maximum possible hours is 12x365=4380 hours. Using 4380, 25% ACU becomes 50% Availability Factor. Sounds better for marketing, certainly, but does it better reflect the availability? Perhaps. But it makes it more difficult to do financial comparisons between various energy sources.

Some wanted even higher numbers so they created a measurement called Performance Factor to include the actual solar energy (irradiance and latitude), panel efficiency, installation factors such as inter-panel shading, the angle of the panels, aging, dirt, and several other variables. Like politics, "Figures don't lie: liars figure" and as the numbers are spun, the consumer is left to dig through a quagmire of numbers to compare one energy source to another.

Solar Panel Efficiency

Solar cell efficiency is calculated based on the power produced at Standard Test Conditions of 25 degrees C cell temperature, irradiance of 1000W/square meter and Air-Mass of 1.5.

With typical energy densities about 16 watts per square foot, to generate 160 kW would require about 10,000 sq ft or about ¼ acre. Most commercially available and affordable solar panels are between 16 and 22% efficient, that is, they convert 16-22% of the solar energy available into useable watts. There are solar cells that reach 46% efficiency, but those are very expensive and generally only used in spacecraft or experimental applications. The National Renewable Energy Laboratory in Golden, CO has been testing and tracking solar panel research from 4 decades of research and their chart *Best Research-Cell Efficiencies*, on page 33, shows how solar cell efficiencies have improved for different composition types of cells over the past 40 years.

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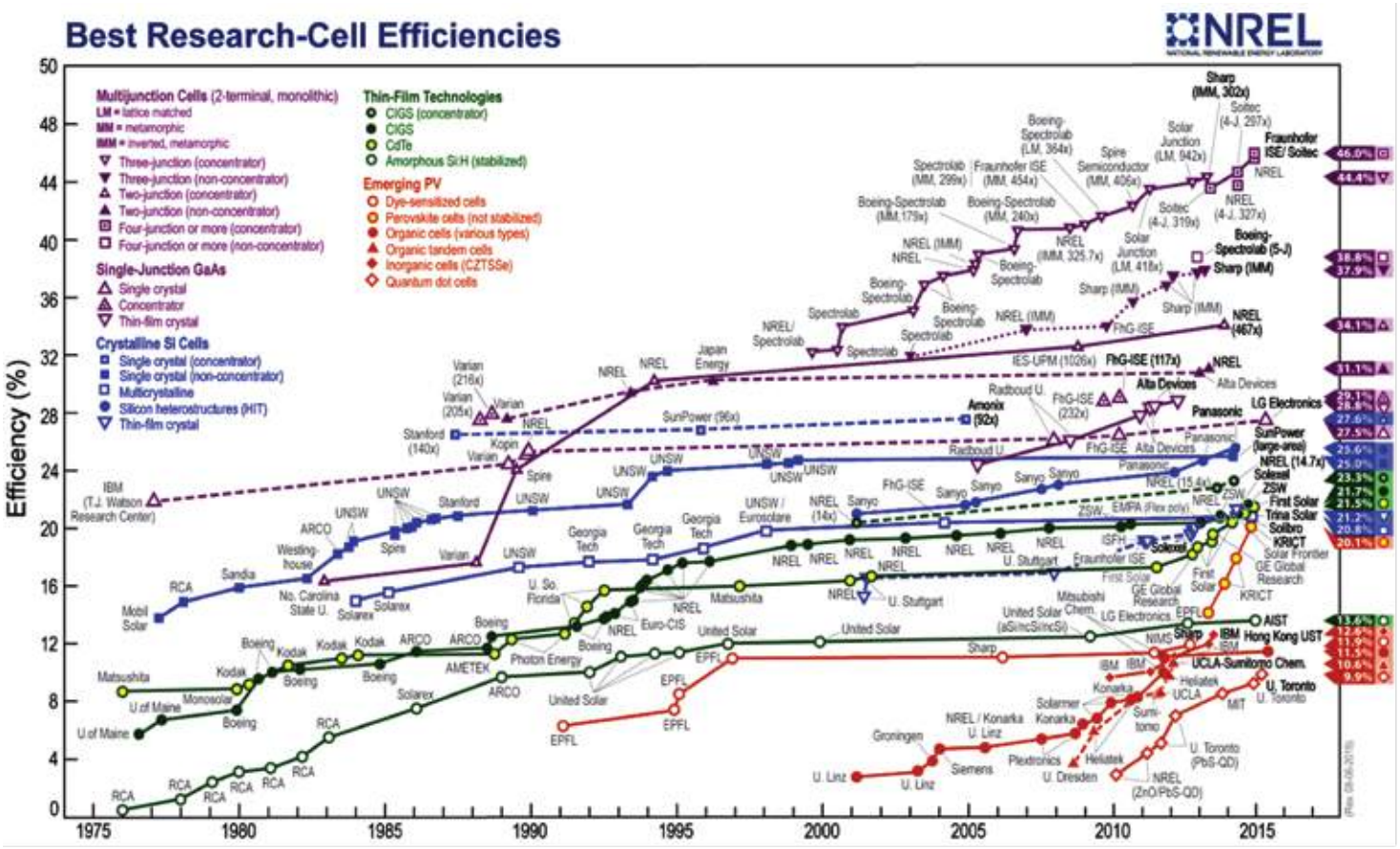


One can see from the chart above that, after a few flat years, solar power technology is evolving again. Some technologies have peaked with their efficiencies while others are still progressing. While solar power is not new, recent interest has brought on significant changes in the past 10 years or so. Federal tax incentives have given solar power the return on investment needed for it to become popular. The uncertainty of politics and tax incentives could cloud over future solar development and deployment.

The actual amount of solar energy being produced is less than expected originally, sometimes significantly increasing Return On Investment (ROI) times. When a system is purchased outright and counting all the tax incentives, "Customers typically see a positive return on investment within 7-10 years," says www.solarcity.com. The Government Services Administration spent 40 million of our taxpayer dollars on the installation of a solar PV system at the Denver Federal Center. With no federal tax incentives available because the owner is the federal government, the engineers working for the federal government on the project calculated the ROI to be over 40 years! By the way, the life expectancy of solar panels is estimated to be 20 years. Sound like an investment you would like to make? Well, we did! *(Source: CBS4 News Denver)* Our efforts to be green should not cloud our financial acuity.

Wind Energy Efficiency

Conversion of wind energy to mechanical energy was studied beginning in 1919 by Albert Betz, a German physicist. He proved the maximum theoretical efficiency of a wind turbine is 59.3%. Not unlike solar and their "Performance Factor and in an effort to give their turbines better numbers, many manufacturers are stating their efficiencies in relation to this theoretical maximum. That is, a claimed 70% efficient wind turbine is actually 0.7 x 0.593 = 41% efficient.

Wind turbines start operating at wind speeds of 4 to 5 meters per second (9 MPH) and reach maximum power output at around 15 meters/second (34 MPH). At very high wind speeds, i.e. gale force winds, (25 meters/second or 56 MPH) wind turbines shut down by feathering the blades and setting the breaks. A modern wind turbine produces electricity 70-85% of the time, (not ACU, but closer to solar's Availability Factor) but it generates different outputs depending on the wind speed. *(source: Global Wind Energy Council)*

Summary

Solar and wind energy today account for less than 5% of the total electrical energy produced. Solar only works during daylight hours, is cyclical seasonally, historically topping out about 20% or less ACU. Wind can work anytime day or night, but historically averages about 31% ACU. One wind turbine takes about 1 acre of land, but most of that can be co-used for agriculture. One turbine is about equal to 16,000 solar panels or 320,000 sqft or 7 acres. But they are still intermittent energy sources.

The real key that is holding back all intermittent energy sources is cheap, reliable, environmentally friendly energy storage. This will be the center topic in a future article.

Back to our first question: will renewables ever really threaten the reliable, affordable RICE genset? Certainly there are companies and individuals that will add renewable energy to their systems, creating their own microgrid.

Tax incentives will be required to financially support renewable energy technologies. Smart Grid and utility acceptance will be needed in the form of net metering, peak shaving, or buy back (export) contracts with the local utility. But many local utilities are starting to push back, sometimes very hard, on connecting new solar or wind to the grid for several reasons including financial and energy management. Future articles will discuss energy management and issues like California's Demand Duck and Hawaii's Nessie, but the easiest to understand is the financial aspects of net metering.

With net metering, every solar kWHr is purchased at the same price it is sold. Imagine you were a retail store and were required by law to sell ½ of your merchandise at the same price you paid for it. You would need to raise the price you charged for everything else to stay in business. In August this year, Las Vegas's Nevada Energy froze any new solar installations pending a new rate structure that will include lower buy-back rates and probably connection fees and demand charges ."Nevada Energy said … that rooftop solar customers cost [the utility] money, which it is forced to pass on to nonsolar consumers — around $8 to $12 million in expenses for every 3,000 new rooftop solar customers." *(Las Vegas Sun newspaper)* Again with the figures and the liars; those figures seem high but the argument is vaild. The opposition argues it is just a ploy by the utility to make more money.

Wind energy tax credits, both the Investment Tax Credit and the Production Tax Credit, expired at the end of 2014 but were reinstated in July of this year. It is widely accepted that without these tax credits, wind energy would freeze or even cease in the US, resulting in thousands of jobs lost. Again, the ROI without these credits is too long or even non-existent. Back to the retail example, imagine your competitor across the street did not have to pay any taxes on 2/3 of his products: thus he could sell 2/3 of his products for less than you can. But you are required by law to stay open and limit your profits to a set amount. How do you do it? Raise prices on the products you sell that he does not.

Raising electric rates and taxes on electricity will be the result and how these programs are financed. Estimates are as high as 10 Billion in taxpayer dollars are needed to fund these tax incentives. Of course, politics are at play, too. The opposition to these tax credits are often funded by fossil fuel providers and those that do not get the tax breaks claim unfair competition.

Bottom line is that if you are not earning money with solar or wind, you are paying for those that are. We will leave the final judgment to the ages, but without government support, programs like the Rural Electrification Administration would not exist and we would not have the nationwide grid we have today. Certainly there are two sides to every issue.

Looking forward, between January 2015 and December 2020 there are 182 coal and nuclear units with a combined capacity of 34,575 MW, or about 3.5% of the total installed capacity scheduled to be retired. *(source: EIA-860 annual detailed data for 2014)* This will, in addition to 'softening the grid,' create a demand for replacement power, probably primarily gas, solar, and wind.

One more time: back to the question at hand. Even with all these issues, will renewable energy be a threat to RICE DG? Probably not right away. If major advances are made in solar efficiencies, wind turbine technologies, and energy storage technologies and if tax incentives continue, then maybe renewables will become a

threat. These technology advancements will be newsworthy and take time, so the individual dealer, distributor, and/or manufacturer will have ample warning. All indications today are that initial installed cost will still greatly exceed the old reliable RICE genset.

Postscript:

In the interest of full disclosure, please note the limitations of the EIA data. Although data is required to be reported, it is self-reported with little or no verification, meaning, of course, it is not 100% accurate.

It does not include non-utility power producers with a net generation of under 1MW. EIA defines "Distributed Generation" as "generation over 1MW being connected to the electrical grid and intended to directly offset retail sales" and "Dispersed Generation" as "generation being used off-grid and often used for remote applications where grid-connected electricity is cost-prohibitive."

Included in their data is "Distributed Generation" (their definition) but the EIA has no way of knowing how much power is produced via "Dispersed Generation" or what is commonly known as Emergency Standby in this industry. They have no way of knowing if a consumer decides to switch themselves to "Dispersed Generation" by, for example, activating the On Line test of an ATS or going to Storm Mode on a parallel system. (Running the gensets in parallel supporting the local load so the net import = 0 kW.)

Dispersed Generation

How much "Dispersed Generation" is out there? If every Emergency Standby genset in the country was on-line tested at the same time and every parallel system set to zero power transfer, peak shave or export mode, what would the effect on the grid be? Best data available is only a guess: in 2008 Carnegie Mellon's Electricity Industry Center guessed 12 Million backup gensets with a combined capacity of 200 GW. If this data was known accurately, maybe it would create demand for more energy management / Smart Grid contracts for the end users, resulting in more business for EGSA members?

Not all private residential, commercial, or industrial generation or roof top solar systems "downstream of the meter" may be included. Certain private systems, often called "Outlaw Generators," those that have not notified their local utility and do not have net metering: on site generation simply slows down or stops, or in some cases even reverses, the power meter. For example, if you have a refinery and know your plant never consumes less than 10MW and you install a 1MW RICE to burn waste gases. Would you even bother to tell your utility provider? By EIA definition this would be "Distributed Generation" and should be reported.

While all these are small in comparison to the total, they are recognized as possible sources of minor inaccuracies in the data. ■

About the author:

Steve Evans – Director of PCS Business Development, ASCO Power Technologies, a company of Emerson Network Power, a division of Emerson Electric.

Steve is a past board member of EGSA, an instructor with the George Rowley schools of On Site Power Generation, and author of the chapter on Power Management and co-author of the chapter on Synchronous Generators in the 5th edition of the EGSA *On Site Power Generation – A Comprehensive Guide to On-Site Power.* He has authored several technical articles for *Powerline* and other magazines, domestic and international.

Steve has been involved with electrical power generation, transmission, distribution, conversion, and control for 35 years. He has contributed to standards development with IEEE 1547.

In his current role with ASCO, Steve is supporting various sales efforts and new product development.

EGSA

Time Capsule Interview Series

Gary Kidwell – ASCO Power Technologies

EGSA President 2001 & 2007 - Active Member 1978-2011

EGSA Sits Down with Gary Kidwell, ASCO Power Technologies, our only two-time EGSA President, to find out how life "after EGSA" is going!

While you may never have questioned it personally, we feel we should preface this interview with a little relevant EGSA history and tradition. For the last 50 years, when an EGSA Member commits to a position on the EGSA Board of Directors (BOD), they (and their employer) are committing to a 3-year term of office. In order to reach the Executive Committee level, a member commits to a 5-year plan, and must have had previous Board experience. With that said, when you look at any EGSA Past President, it is a given that this person has volunteered roughly 7-8 years active years in order to reach this pinnacle. Gary Kidwell is the only exception, having served in a leadership role in EGSA for 11 years, and twice as EGSA President.

As one might suspect, Gary has been tireless in his energy and support for EGSA, as his length of EGSA Membership extends far beyond his years in a leadership role. Gary chaired the Education and the Communications & Conventions Committees, served 2 terms on the Executive Committee and was instrumental in founding the Strategic Long Range Planning Committee (SLRP). He is also the recipient of the Leroy Carpenter Award (2004) for his long and outstanding service and in 2012, Gary was selected as the Gordon Johnson Life Achievement Award recipient, one of only 23 people to receive that honor to-date.

"In 2005, Harold Mawdsley (EGSA Vice President at that time) stepped down from his position at Deere & Co. (now John Deere) and retired early. It was decided by the Board that they would tap someone who had previous experience, both on the BOD, as well as the Executive Committee. I guess I fit the bill! Armand Visioli supported the decision and once again, I spent an additional 3 years fulfilling that commitment," Gary recalls.

Gary began his career working for a switchboard manufacturer while he attended college. "Starting in sheet metal fabrication, I was soon transferred to the Wiring Dept. and then 'wound up' in Engineering. I stayed on for several years, and then decided to start my own manufacturing firm. It was a pivotal point in my career. A few years later, I joined an engine generator assembler in a sales management position for Stand-by and No-Break systems. Several years later, I accepted a position with Delta Switchgear, a firm which ASCO acquired, and my adventure with ASCO began as their Western Regional Sales Manager. I never looked back!"

Gary and his wife Darlene have been very faithful through the years, coming to several EGSA Conferences since his retirement in 2009. They continue to wave the EGSA banner from their home in Murphys, CA. "Darlene attended almost all of the conventions, and like many of the spouses, she developed lasting friendships. She has always been impressed and appreciative of how EGSA reached out to the spouses and how it made her feel an important part of the convention. The most memorable convention was in Maui, when I was President. We had all of our children and grandchildren with us. I don't know how it gets any better than that. Each Convention was the best of times and I was blessed to share those events with my partner," Gary adds.

With that, our interview begins!

Who was the most influential person in EGSA at the time when you were active? Why do you think that is true?

Gary Kidwell: "There were many individuals that had a positive impact on me through my years at EGSA. When I became an active member, I would pay attention to the stalwarts of EGSA, Arthur Coren, John Winbery, Leo LeBlanc and Roman Gawlowski, as they conducted EGSA business in a very professional manner.

Later, during my term on the Board, I was impressed with Greg Linton (JRS Custom Fabrication then, now Kelly Generator & Equipment, Inc.), Ron Hartzel (Eaton), and Steve Stoyanac (Kim HOTSTART then, Chillicothe Metal now). They brought a "let's get it done" attitude combined with a personal demeanor that I have a great deal of respect for. Then, there was Charlie Habic (Gillette Generators, Inc.) who brought a different perspective to the Board, intelligent and at times a little quirky (especially when performing his dance moves during a banquet); but a real valued EGSA Member, who has played a significant role in signing up new EGSA Members. Then, there was my co-worker, Herb Daugherty (ASCO) always there, always giving; always a good friend. Finally, last but certainly not least, Jalane Kellough who is not a member, but as our Executive Director, has been a key part of EGSA's success. Even through difficult challenges, it was easy to lean on Jalane, as she always had the bases covered."

What was your first impression of EGSA?

Gary Kidwell: "I started attending EGSA, actually EGMSA, in 1978. My interest was mainly to develop contacts and expand my customer base. I became really active in the late 80s & chaired the Education and Communications & Conventions Committees.

Back in the late 70s and early 80s, my initial impression was the organization had quality companies as members, and experienced individuals that represented their organizations and the industry as well. What was missing (in my opinion) was an effective management plan. When I became EGSA President, the Strategic Long Range Planning Committee was formed. That was honestly one area that I wanted to make a difference. I was lucky to

Gary Kidwell – ASCO Power Technologies

have Deb Laurents 'volunteer' to chair the committee and Deb and her team got it done!

I also knew fairly early on that I wanted to be more involved in an EGSA leadership capacity, and at one point, the chemistry and dynamic of the Board of Directors was the direction I wanted to move in. As you probably read in Armand's interview (in the last issue of Powerline) that he was an active employer within EGSA. He was also influential, encouraging me to get involved and stay involved.

After I served on the Board the first time, I recall that it was John Winbery (Con-Select), who called to tell me that I had been nominated to serve on the Executive Committee. That, and the subsequent term I served, will always hold cherished memories for me. There is always a sense of accomplishment when a group of individuals band together for a common cause above and beyond their own individual goals and aspirations."

Any great rivalries or fun stories to share?

Gary Kidwell: "EGSA has travelled to Maui twice in 50 years. At our first Maui Convention, a group of us rented Harleys and toured the Island. Paul Dolinar, Leo LeBlanc, myself and several others with our spouses. We had a couple of near misses though...Paul laid his bike down at the end of the first run, and I hit a gravel spot and spun out a bit, but Darlene and I held on." No harm, no foul!

I remember Olga Dolinar said something to the effect of 'why did I get on this d_ _n bike with Paul anyway?' Darlene joined in, shouting in my ear as made our way back, 'watch out for anymore gravel, dummy!'

As an aside to this occurrence, there were a series of 'hair jokes' that have circulated for years, starting with Leo's presidency and ending with Paul's run. If you knew Paul, there was never a hair out of place...even that day when he took off his helmet after laying the bike down. Leo, being mane-challenged, and I rode without a helmet, but obviously the wind blowing freely in your hair didn't apply for Leo....that's how it went for years, constant ribbing and fun ever since that day."

If you could tell a prospective member one thing about your experience as a Member, what would you impart to them?

Gary Kidwell: "We walk this road only once, and if you are connected in any way with the Power Generation Industry, you need to become a Member of EGSA. The benefits are many, as you will not find a better forum for connecting with industry leaders.

EGSA provides the best opportunities to stay in step with the industry's progress and evolution. On a personal note, I will always remember on convention banquet night, looking out at all the attendees during the invocation, saying to myself how fortunate that I was to have had this journey with so many talented and wonderful people."

Top Left: *EGSA Fall Conference, Maui, HI 2007 - Gary joked with Staff, "That's me on the right at sunset".*
Top Center: *Gary and Darlene enjoy a motorcycling event named "Wild One Reunion" in Hollister, CA. The event commemorates the movie, "Wild Bunch" with Marlon Brando. The event drew 5000 bikers (and only a few fights).* ***Top Right:*** *Gary and Darlene traded in their motorcycle gear and here is the #1 reason why! Titan is a Friesian Quarter mix; he is 16 hands tall, weighing 1400 lbs. and at 15 years old, is well trained for trail riding. Gary has bonded with Titan, as they are both spirited and proud animals!!*

Were you a Member of any particular Committee? If so, do you have a particular story you would like to share about that experience?

Gary Kidwell: "While I was Vice Chair of the C&C Committee and David Coren was Chair, I was tasked with getting Principals from several consulting engineering firms, to present their perspective regarding interconnect issues that challenged our industry and utilities respectively.

I was able to secure 2 speakers from well-respected firms to present their position and those of the utilities industry during our Palm Springs Convention in 1999. Just before the introductions, I told David that we may be up against it as one speaker may be a 'no show'! He turned to me and said; 'Not a problem Gary, if he doesn't show, you present their position, and then walked away.' Thankfully (for me and EGSA), the consultant showed up minutes before I introduced the panel to the membership, and as I scanned the audience, I spotted David with a big smile on his face as if to say, 'No worries, Gary.' David will always be special in my memory."

So, how is retirement treating the Kidwells? Gary jokes that he has become a Professional Recreator, golfing several times a week. He also claims that his game has improved with age! "I'd like to credit Armand for the literal upswing in my game too, as he threatened to fire me several times if I didn't help ASCO win EGSA golf tournaments," Gary jokes. "I'm also into fly fishing, and travel to Montana several times a year to fish the Big Hole and Beaverhead Rivers for Browns and Rainbows (all 'catch and release').

Darlene and I rode my Harley for many years, but now we ride our American Quarter Horses on the trails in the Sierra Nevada Mountains. It's a special bond one has with his horse as long as I'm in the saddle and not on the ground. I'd have to say that the most pleasure I receive at this point in my life is being with my 5 grandchildren. I'm thankful each day for having such a wonderful family and good friends."

As with all good friends, we hope these two will continue to grace our doorstep well into retirement! Thanks for the memories, Gary!

Debra Laurents – Cummins Power Generation

EGSA President 2013 - Active Member 2003-Present

EGSA Sits Down with EGSA's First and Only Woman President, Debra Laurents, Cummins Power Generation.

Debra Laurents is a Global Systems Implementation Leader for Cummins Power Generation and has been with them for more than 22 years. She began her career in on-site power following several positions in international banking. She was hired to work with Cummins' Latin American distributors, and progressed to more responsible roles in the sales support function. Her recent roles with Cummins have involved sales force automation and new system implementations.

A Minnesota native, Deb has resided in the 'Land of 10,000 Lakes' for her entire life. She is also somewhat of a history buff, having caught the bug from her mother. "My Mom did a lot of work on our family history. I picked up where she left off." Deb also enjoys travelling and interestingly enough, Spain is one of her favorite destinations and she has also traced her own family heritage to Spain as far back as the 1500s. "My uncle was a famous fur trader in his day," Deb adds.

Deb has been involved in several meaningful ways with EGSA. She began her volunteer path for the organization at the Committee level, working on the EGSA Technician Certification Committee, Membership and the Strategic Long Range Planning Committees. "While I've enjoyed participating in all of them, the Strategic Long Range Planning Committee was particularly memorable. EGSA President Gary Kidwell asked me to lead the strategic planning process while I was serving on the Board of Directors. I tried to convince him that I was not the right person for the job. Apparently he had his mind made up! I am grateful that he would not take 'no' for an answer. We put together a great team: Joe Hafich, Ron Hartzel, John Kelly, Greg Linton and Jalane Kellough. I appreciate the team's commitment to the work, as well as the many meetings we had developing that initial plan," Deb recalls.

As a member of the EGSA Board of Directors and later, as a member of the Executive Committee, Deb had the opportunity to be involved in the daily operations of the Association, review EGSA's finances, monitor our programs and ensure that EGSA was moving towards achieving the goals of the Association. "It was a great honor to become EGSA's first woman President," Deb adds.

And with that, our interview begins...

What was your first impression of EGSA?

Debra Laurents: "The first EGSA Conference I attended was in Nashville, TN during the Fall Conference in 2003. My first impression was that everyone was very friendly. I signed up for a Sunday afternoon tour of the Nashville, and it was a great way to get to know other EGSA members, as well as their spouses. I remember meeting the Board of Directors at the First Timer's Reception. Back then, I think we had more board members than first timers. That is no longer the case! I also remember sitting down in the meeting room on Monday morning. A coworker and I barely took our seats and Joe and Bob Hafich turned around to introduce themselves. I felt very welcome!"

What have you enjoyed the MOST (thus far) about being a Member of EGSA?

Debra Laurents: "I think what I enjoy most is the opportunity to contribute to our industry; it provides a good growth opportunity outside of my day-to-day work."

Did you aspire to be in a leadership position within EGSA?

Debra Laurents: "I thought it would be interesting and fun to be in a leadership position, and I was pleasantly surprised when I was nominated. It was an honor to serve on the EGSA Board of Directors, as well as on the Executive Committee."

Where would you like to see EGSA headed in the next 50 years?

Debra Laurents: "When you think of how much EGSA has changed during our first 50 years, it's hard to imagine what the next 50 years will bring! There are so many possibilities. I would hope that strategic planning continues to be a focus for us. The effort we've put into the planning process has been very worthwhile. It has helped us set our direction and prioritize our efforts.

One of our goals is to continue to add value to our membership. I would like to see us look for opportunities to expand collaboration between our members. Another area of opportunity is codes and standards. We already have working groups focusing on codes and standards, and with some effort we can take that collaboration to the next level.

I would also like to see more women get involved in the organization, which will lead to having additional women in leadership positions."

Debra Laurents – Cummins Power Generation

How do you think new members can benefit most from their involvement in EGSA?

Debra Laurents: "Our Spring and Fall Conferences are a great way to get to know other members. New members should take advantage of these opportunities! In addition to meeting new people and seeing old friends, I can always count on learning something new and gaining new inspiration. I would also strongly recommend that new members get involved in a committee. It's a great way to meet people, as well as contribute to the organization."

What do you think the most powerful contributor has been to your success with EGSA thus far?

Deb Laurents: "For me, it has been leadership. I am grateful to those who have encouraged and supported my participation in EGSA. I have always had the support of our leaders at Cummins Power Generation, as well as their encouragement to increase my level of involvement. I also want to thank the many EGSA colleagues who have supported and encouraged me along the way."

Deb actively attends and participates at all EGSA Conferences (both Spring and Fall). When she is not busy with work, you can find her hiking or driving her ragtop convertible if the weather is right! Thanks for your active participation, Deb!

Top: (L to R) *Jeff Maggied, Gary Johansen, Greg LaLiberte, Deb Laurents, Scott Strudwick, Randy Engelmann, Jim O'Rourke, Terry Seger at our 2013 Fall Conference in Seattle, WA.*

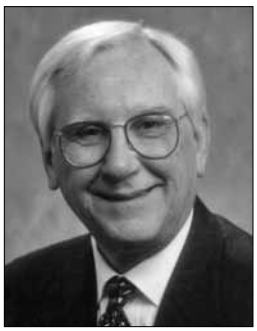
Bottom Left: (L to R) *This picture could have been called, "Future leaders of EGSA" (l to r: Al Prosser, Joe Hafich, Ed Murphy, Randall Nunmaker, Vaughn Beasley (standing), Missy Nunmaker, and Deb Laurents in 2008, in Santa Ana/Pueblo, NM.*

Bottom Right: (L to R) *Pauline and Michael Pope, Jalane Kellough, Kim Hafich, Ed Murphy, Michelle Murphy, Deb Laurents, Vaughn Beasley, Bob Hafich and Leslie Beasley).*

George Rowley – EGSA

Active (Staff) Member 2001- 2012

EGSA Remembers Our First Education Director, George Rowley, as Part of Our EGSA Time Capsule series.



George Rowley joined the EGSA Staff in 2001. When we first found out about him, George was living in Maryland and our Executive Director reached out to David Alley (Anna Inc.) to see if he wouldn't mind conducting the initial interview with George. David agreed, and as a Director on our EGSA Board, the Chair of the Education Committee, an EGSA School Instructor and also a resident of Annapolis, it seemed like a perfect fit.

David recalls, "I remember we met for lunch at Louie's Crab House in Greenbelt, MD. On first impression, I could tell that George was a very personable guy and could speak to a lot of the issues of education, topics like accreditation for example, things that I was only partially familiar with at that point, but it was abundantly clear to me that George had what it took for the job. He was the kind of guy that would know how to take our courses to the next level, among other things. I took away two benefits that day," he laughs, "I got a glimpse of what the future of EGSA Education Programs could be, and I got that great 'free' lunch at Louie's Crab House."

With his Master's Degree in Education, George had just the right credentials that EGSA was seeking, even if his background was in the healthcare industry. Sure enough, power generation wasn't such a long leap, as we remember fondly that George revealed later, "I didn't know a volt from a watt when I came onboard."

George was a collaborator. He branched out with multiple projects as our Director of Education and really 'dug in' on each of our EGSA Education Programs, services and products. From the David I. Coren Scholarship Program, *On-Site Power: A Reference Book* (the 4th Edition), the EGSA (Basic and Advanced) Schools, George even developed a continuing education program for our school instructors, hiring a consultant to coach them on topics like presentation skills, consistency in course material, there was even a section of the training that focused on the correct body language for the classroom! A central component of his ability to collaborate was his skill to reach consensus or gain 'buy in' from stakeholders. "George was a real pro at getting the sign off and examining a problem from every angle," shared Jalane Kellough, EGSA Executive Director. "His legacy during his 11-year tenure with EGSA was truly herculean. Education has always been a key area of focus in our Strategic Long Range Plan and George's tireless efforts on behalf of EGSA Education Programs can be remembered with great success. In just a short time, George had developed Learning Outcomes, an Author Selection Process a Chapter Review Committee to name a few. He also brought a similar process to the schools in regard to Continuing Education Units (CEUs)."

In 2012, George and his wife, Beth, planned a fantastic cruise to Alaska. By this time, George was working remotely for EGSA from the Villages, FL and was hyper-focused on two specific eLearning modules, Power Generation 101 and EGSA 101. He had also spent the months previous coordinating the volunteer authors for the 5th Edition of *On-Site Power: A Reference Book*. The night before his long-awaited cruise, he experienced a tragic fall in the middle of the night in Seattle. The trauma hospital there is considered one of the best on North America, but unfortunately, this fall was a very serious accident and George was forced to retire and move to a convalescent home in Eustis, FL where he later passed away.

His leadership and guidance and accomplishments will be long-remembered by EGSA well into our next 50 years. Here are what a few of his peers and friends had to say about George's legacy...

Warner Bauer, Kickham Boiler - EGSA President 2008

"Since I focused my committee volunteer efforts elsewhere (other than Education), I didn't have a close working relationship with George Rowley. However, I did have dealings with him on the David I. Coren Scholarship Committee. George would always go the extra mile by performing a thorough review of the applicants and take the time to break down their qualifications for the Committee, which took the heavy lifting out of it for the members of the Committee. George was a very gracious thoughtful person, a quiet individual who was an absolute pleasure to know and work with."

Bob Hafich, Emergency Systems Service Co. -
2016 EGSA President Elect

"After much thought, my best memory of George is how he treated me from the beginning. I was fairly new to the organization and did not know nearly as many people as I know now. I almost felt like he took a special interest in me. He took the time to talk to me at the receptions and functions and really listened to what I had to say. He valued my opinion and made me feel important. I believe that it was George who picked me to be on the original Technician Certification Committee. He pushed me into leadership and was

George Rowley – EGSA

a mentor to me within the organization. I feel that he would be very proud of me today being on the Executive Committee and working my way up to President."

John Kelly, Jr., Kelly Generator and Equipment, Inc. – EGSA President 2011

"George made such a memorable and positive impact on each of our education programs and products because he loved the work he was doing and knew the value it would bring to EGSA. He could be counted on for leadership, as well as personality. Truly, he was the face of our EGSA Education Programs, a job he took very seriously and delivered with excellence."

Top Left: *George presents a program overview to the 2012 EGSA Board of Directors.*
Top Right: *George and his wife Beth enjoy networking with the Popes during our Spring 2010 Conference in St. Petersburg, FL.*
Bottom: *George and Jim Wright in Spring of 2011 in New Orleans, LA.*

Todd Lathrop, Eaton – EGSA Secretary-Treasurer 2016

"It's hard to put into words what George meant to me. He was so kind and gentle, but was a real man (hence the Burt Reynolds 'stache!). He wanted nothing more than to better the EGSA (then) On-Site Power Schools.

George understood the importance of the EGSA Basic and Advanced Schools and did everything to improve the program by providing training to our instructors and delivering concise instructor content. He took it upon himself to ensure that each instructor was properly trained in how to teach adults. That was a huge task, as we, the instructors, are not easy people to train.

When I came on board as an instructor, George made me feel welcome as if I were part of the team. Confidence booster! He was great to be around and always had good things to say, regardless the subject. George was a staple in EGSA, and his shoes will never be completely filled. You are missed, George!"

Dennis Pearson, Woodward - EGSA Board Member 2014-2016

"George was a true gentleman. He had the ability to make everyone feel at home, at ease and welcomed. George was a true master of education with EGSA. When I joined the Education Committee, Andy Ulavege, who was Chair, told me that George does it all. Andy's comments were very true. George would have all kinds of activities going, and be the conductor... smooth, even and always unruffled. At the conferences, George was everywhere, and he knew everyone. Always smiling, gracious, knowledgeable and polite, George was a true EGSA Ambassador. We all were blessed to have known George Rowley."

Jack Petro, ASCO Power Technologies – EGSA Technician Certification Committee Chair

"When EGSA decided to form the Technician Certification committee as a special EGSA committee with seven members, my boss, Armand Visioli, wanted ASCO to be represented on this Committee (as we had a 125+ technician service company). I was the VP & GM of the service company, so I was drafted to be on the Committee. It was hard work getting together with a college and putting together a DACUM panel to make up a test. In addition, there were many other things that all had to come together to make the EGSA Certified Technician Program a reality. It was a 'first time thing' for all the original members of the Committee. The person who pulled it all together and helped us all along the way was George Rowley. Because committee members were located around the country, George was the man who kept the process going and he worked closely with Ferris State University to put everything together.

After the initial set-up, George issued monthly reports with data on the testing program so in between EGSA meetings, the Committee knew exactly where we stood. I have

been on this Committee since its inception, and am now the Chair. I can say without hesitation that George was an integral part of the Committee and to this day, his efforts and enthusiasm is missed."

Michael Pope, EGSA Education Director – EGSA President 2012
EGSA Education Chair 2002-2006

"In 1999, our Board of Directors recognized that the EGSA Education Programs were good, but that in order to progress it would be necessary to add a full-time Director of Education to the EGSA Staff. George came to EGSA knowing almost nothing about on-site-power generation. His area of expertise was education and how to arrange educational programs and that is what we needed. George was able to bring a dramatic improvement to all of our educational programs: he created and implemented procedures for the David I. Coren Scholarship program; for the updating of On-Site Power Generation: A Reference Book (4th edition); he managed the schools, started the CEU program and worked with the Technician Certification program to bring it to fruition.

It is difficult to imagine the mental devastation caused by almost total physical paralysis. George's attitude, after the shock of his accident subsided, was to accept what he could not control or change, and concentrate on making the best of his new situation. During our many phone conversations after the accident, the only indication that he wasn't his normal 100% was his somewhat labored breathing. His positive attitude, sense of humor, warmth and concern for others and EGSA remained unchanged. He was an inspiration to those that stayed in contact with him – and especially to those who had similar situations at his critical health care facility.

All the EGSA educational programs have George's influence built in to them; new programs are established with his guidelines. And EGSA is a better organization for it."

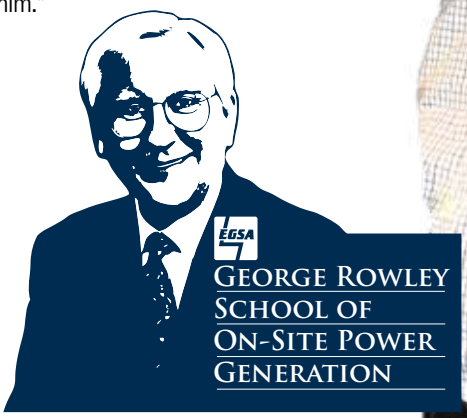
Dennis Roundtree, Onsite Power Inc. – EGSA Board Member 2007-09, EGSA Education Committee Chair 2007-08

"My favorite memory of George is the easy-going way that he was able to manage so many competing priorities and responsibilities. I also remember what a good job he did managing some of the more intense personalities on the Education Committee (me included). George was one of the most instrumental and pivotal figures in the history of EGSA due to his oversight of the total transformation of our education program. That is what he should be remembered for."

Steve Stoyanac, Chillicothe Metal, USA – EGSA President 2004

"As the Chairman for the "On-Site Power Manual" Sub-Committee George Rowley and I worked closely to begin the process of revising the 4th Edition of the reference book with the ultimate goal of releasing the 5th Edition. He was instrumental in creating and organizing the processes for which this would be done. It was a monumental task involving many spreadsheets, author evaluation forms, chapter reviewer forms, vendor contracts, phone calls, e-mails, off-site meetings, etc... I was amazed at how well George organized this entire process while at the same time, keeping many other balls up in the air such as "Tech Certification, the On-Site Power Schools and writing articles for Powerline. As challenging and time consuming as the book revision process turned out to be for both of us, the groundwork that George laid out in the very beginning guided us to success and the final release of the 5th Edition well after his passing. We used George's original documents and procedures throughout the entire process. George was always a professional and courteous leader showing compassion, understanding, and patience for the many people involved."

The recently released 5th revision "On-Site Power Generation" book was initiated by George Rowley and serves as a tribute to him."



Bill Young – Industrial Power Systems, Inc.

Active Member – 1984 – 2015

It Turns out EGSA Has Many Gearheads in our Midst, Who Knew Bill Young Was One of Our Biggest?

He may have just retired this year, but you can't stop Bill Young from tinkering! "As long as I can remember, I have always had an interest in mechanical and electrical gadgets and while others were snow skiing and ice fishing, I was taking apart old radios and televisions, building model trains and airplanes, and working on my Studebaker," he shares.

Bill grew up in Neenah, WI, a small town in central Wisconsin, about 40 miles south of Green Bay. He left there in 1961 to attend the Milwaukee School of Engineering (MSOE), where he received, as he put it, a "hands on" education there. "I recall paralleling 2 alternators in the motor lab, using lamps for synchronization verification. Little did I know at the time, that this lab experiment would be the foundation of my whole career," he marvels.

Bill continues, "Being both good luck and Divine Guidance, I started my career in 1966 with Cutler Hammer in Milwaukee, where I worked as a product supervisor for industrial motor controls products; including MCC's (Motor Control Centers), across-the–line combination motor starters and reduced voltage motor starters through NEMA size 9. (Largest motor starter manufactured at that time)."

The next year, in 1967, Bill married his wife of 48 years, Judy. "We met at a fraternity party on the east side of Milwaukee, back in 1963. I sold my Triumph TR3 to purchase the wedding rings."

In 1970, Bill was asked to relocate from the Cutler Hammer air conditioning chiller motor starter manufacturing process in Milwaukee to the Cutler Hammer assembly plant in Atlanta, GA. So, he and Judy relocated to Atlanta, where he also earned his Electrical Engineering degree from Southern Polytechnic State University and their son Mark was born (1972).

In 1973, Bill moved the family again...this time to Jacksonville, FL, where they have been ever since. He began working with several companies designing and manufacturing industrial controls for the water, waste water, irrigation, materials handling, machine controls and the process systems market. In 1974, they had their second child, daughter Allison.

In 1981, Bill and Judy established Industrial Power Systems, Inc. (IPS). The company began as an electrical panel shop, but quickly expanded into the engine/generator controls and switchgear business. Working with engine/generator projects led to a growing business in the marine electrical products for new ship construction. As a system's integrator, IPS was able to package switchboards, drives, transformers, instrumentation, and automation products into a complete system. "Just about all our customers and vendors were member companies of EGSA," Bill recalls.

In 2011, Industrial Power Systems, Inc. (IPS) was acquired by the New IEM LLC (Fremont, CA). "An interesting note on this story, a good friend named Bruce Baumann, who was at that time with ABB, Inc., called on both IPS and The New IEM, LLC (of which Ed Rossi was President).

Bruce felt that Ed and I were not only similar people, but that there was synergy between our two businesses, even though they were on one coast and we were on the other," Bill laughs. "Bruce knew I was well into my 60s and that it would be a great benefit to get together and at least discuss the possibilities. Our business focus was primarily engine/generator paralleling controls and automation systems and theirs was primarily manufacturing panelboards, switchboards and switchgear equipment. Ed was expanding their product offerings to include the kind of systems work we were doing. So Bruce introduced Ed and I at the ABB Automation and Power World conference in Orlando in 2011.

The next morning, Judy and I were at breakfast, and I said "Is that Ed Rossi sitting over there?" Judy motioned for him to come join us. "We should do something together," Ed says. I will never forget Judy's response, she looked him right in the eye and said, "Make us an offer, Ed" and he said "You know, Judy, I am going to do that."

In 2014, IPS was integrated into IEM Power Systems LLC. The company continues providing products and services to the on-site power generation industry. "Ed put together the plan for Judy and I and it looked good for us and fair for both companies. We did our due diligence and closed on the deal 4 years ago that sold our company to the New IEM LCC. We both remained onboard and so did our children, operating under the name IPS until 2014, and then we rolled out the new branding, IEM Power Systems, LLC, about a year ago," Bill continues.

Bill and Judy Young have enjoyed a rich 30-year plus history with EGSA. They have both supported the organization in numerous ways through the years, and over time, even both children have become involved. Judy retired in June 2012. Bill retired in January 2015. "I first became really involved in the early 80s. EGSA was starting to write standards and that was exciting to me. It was also a source of frustration too, he laughed sheepishly, "we struggled to find common ground on many of the standards written at that time because of self-interest."

Bill continued "In 2005, when George Rowley began putting the EGSA Technician Certification program together with Ferris State University in earnest, we were asked if we could send one of our lead service technicians up to assist. Judy, being our Human Resources Director, worked with Bob Raczak (one of IPS' lead technicians) and we sent him up to assist with the final touches on the exam and the program. The EGSA Technician Certification pilot test rolled out 2007 and we were proud that we had a hand in that development."

And with that, our interview begins...

What years were you active in EGSA?

Bill Young: "1980 to present. I am now in the Associate Membership–Retired class"

Why did you decide to join EGSA?

Bill Young: "Some 40 years ago, as a young electrical engineer, I was working with a small company here in Jacksonville, FL, and was asked by my longtime friend, Tom Palmer, Coastal Power Products (now Florida Detroit Diesel-Allison) to build some metering panels for the generator sets he was packaging. That was my introduction to the on-site power generation industry. Over the next couple of years, as I expanded my technical knowledge, I realized that I needed to learn a lot more about the on-site power generation market, and EGSA was the organization to join."

What was your first impression of EGSA?

Bill Young: "When I joined, EGSA was a much smaller organization and consisted of mainly larger corporations. At the time, I was a bit overwhelmed associating with companies like Detroit Diesel, Cummins and Caterpillar and competitors like ASCO, Russelectric and Zenith. I soon realized that these were people like me, working to build the best product for the customer, and we were really not competitors at all, but all in the same business. Being a member of EGSA made me feel like I was part of the industry and could be successful."

Who was (were) the most influential person in EGSA at the time when you were active? Why do you think that is true?

Bill Young: "EGSA is all about the membership. Many people influenced me with their professionalism and commitment to the industry. Those that made me feel welcome included Paul Dolinar, Tom Richards, Warner Bauer, Ken Niekamp and John Winbery. I learned my business model from folks like Arthur Coren, Ron Seftick and Herb Daugherty. I had some fun times with Leo LeBlanc and Vali and Sheila Vivi. My longtime friend, Vaughn Beasley, defined and helped me maintain the highest vendor/customer relationships."

Were you a Member of any particular Committee? If so, do you have a particular story you would like to share about that experience?

Bill Young: "In the early years, I was active in several committees. I believe that the committees are essential to the EGSA process and are the best way to immediately become active and part of the organization."

Where would you like to see EGSA headed in the next 50 years?

Bill Young: "EGSA and its member companies have focused on providing on-site electrical power when the primary source of power has failed. Although there has been some degree of energy storage available, the cost is high and capacity has been somewhat limited. We have spent a great deal of time and effort to provide reliable emergency and backup power to our customers using diesel and gas generators and have been most successful.

There has not been a practical way to store significant amounts of energy, however, it now seems that companies like Tesla are bringing megawatt capacity battery systems to the market.

I think EGSA will expand its base of membership companies to include solar, wind, hydro, fuel cell and energy storage. There will be significant opportunity to integrate all these technologies into on-site power systems with a combination of engine/generators, renewables, and megawatt capacity storage.

I can easily look back 50 years, when I was in college studying vacuum tubes and slide rules. The advances in technology are amazing. I think we can expect an equal amount of discovery and new products that will change how we generate and distribute electrical power."

If you could tell a prospective member one thing about your experience as a Member, what would you impart to them?

Bill Young: "As a member of EGSA, you can get to meet and know all the players in the onsite power generation industry. In addition to meeting the manufacturers and distributors, you can get to know all the vendors of the products we all use to make the systems work. You will advance your education and knowledge, and have some fun along the way.

Did you bring your spouse to EGSA events and if so, please share anything you might wish to about their experience or that subject in general?

"The Spring and Fall Conferences are always held at great destinations. Judy has attended many conventions with me and participates in the spouses program. She has always liked the keynote speakers and the banquets. Her EGSA friends included Nancy Whittall, Maureen Powers, Donna Bauer and Judy Niekamp.

Bill Young – Industrial Power Systems, Inc.

Top Left: *Bill and Judy Young enjoy our EGSA Convention in Maui.* ***Top Center:*** *Bill's Austin-Healey 100, an Austin-Healey 3000 and a Bugeye Sprite.* ***Top Right:*** *Bill Young is most definitely a gearhead!*

Judy worked with me in the business, and the conventions gave her the opportunity to meet the people and companies we did business with over the years. It makes a big difference when you can put a name and a face together.

One of our favorite conventions was the time we went to Hawaii. We extended our trip with a 7-day cruise around the islands. In addition to all the educational events at the conference, we learned about the farming and processing of Hawaiian coffee, vanilla and chocolate."

Tell us about your hobbies and interests outside the Power Generation Industry. They can be past hobbies or what you are up to at the moment!

"I have owned Austin-Healeys for 48 years and have an Austin-Healey 100, an Austin-Healey 3000 and a Bugeye Sprite. I am one of the founding members of the St. Johns Austin-Healey Club and I am active in many club events.

I also participate in the annual Amelia Island Concours de'Elegance. This event draws almost 300 of the world's finest automobiles to Amelia Island Florida in March each year. I am a lead judge for this event, usually judging the 'sports car' category.

Like many electrical engineers, I always have been interested in amateur radio. I hold a general class FCC amateur radio license (W4WWY) and at times, I am active on the amateur radio frequencies. When I became interested in radio communications, you had to take tests, learn Morse code and understand the most fundamental levels of communication.

The amateur radio hobby is an interesting hobby, and it actually keeps growing. As a member of the Amateur Radio Emergency Services (ARES), the bottom line is that if everything else fails, we are still active. We can relay all of the necessary communications. It is really the last line of defense if you think about all of the cell towers being out of service! I can turn on my equipment here, with both generator and battery backup power, and can communicate and keep informed in the event of catastrophe. I also sign on weekly and assist in performing emergency testing of the system.

I also have had a lifelong interest in traditional Dixieland Jazz. The musical period in the United States from 1918 to 1930 produced a significant amount of traditional and American popular music. I collect records, tapes, and CDs, but most recently enjoy the audio streaming available through the internet, providing musical programs dedicated to this era.

At times, you may just find Judy and I at the Suncoast Jazz Festival enjoying the music with long time EGSA friends, Herb and Nancy Whittall.

We have been to New Orleans numerous times for Jazzfest (and for Bourbon Street), where there are still a few traditional Jazz clubs that are active.

We also have a weekend condominium in Welaka, FL, (The Bass Capital of the World), and soon, I am going to buy my first boat, and maybe learn how to fish."

Bill and Judy have been married for 48 years. The have two grown children, two grandchildren and live in Switzerland (St. Johns) Florida. While they are both technically retired, Bill still enjoys doing contract work to keep busy. Both Allison and Mark still work for the IEM Power Systems, LLC, so the legacy continues. Mark is a software developer and continues actively developing software for their monitoring product, Telegauge . Allison is actively involved with Sales support and in their ERP system (Enterprise Resource Planning). She resides in Jacksonville and her brother and his family in St. Augustine.

"The hobbies and the grandchildren keep us busy! Mark and his wife Janelle, have Sam (age 4) and Anna (age 2) and the 2 of them take up a lot of our time and we like it that way," he concludes like the proud grandpa he is.

Thanks Bill and Judy! We hope you will continue to come to EGSA conferences and join in on the fun!

Ed Murphy – Power Search, Inc.

EGSA President 2015, Active Member – 1996 – Present

Ed Murphy, EGSA's 50th President, Sits Down with EGSA to Discuss Recruitment, Retention and Remaining Active Long Past His Leadership Days

Fresh from the EGSA Executive Committee bullpen, Ed Murphy is serious about not fading away. "I need a real succession plan here as I enter the 5th year on the Executive Committee. What comes after Past President?" he kids, but is totally deadpan. "How would you feel?" he asks.

Originally from Massachusetts, Ed is the President of Power Search, Inc, a nationwide recruiting firm that places talent for our industry. For more than 20 years, Ed has been a member of EGSA, having been recruited by Leo LeBlanc sometime around 1994-95. Ed's passion is helping people find the job of their dreams in power generation. He has strength in maintaining excellent relationships with industry professionals, whether they are seeking new talent or not. He is also a 'people person' and enjoys welcoming New Members and First Timers at every EGSA opportunity. He takes pleasure in making people feel comfortable and this keeps them coming back!

He and his wife Michelle (coincidently, Leo LeBlanc's daughter) have enjoyed a long relationship with EGSA and for the first time, are facing the 'empty nest' syndrome. "For several years, Michelle was unable to join me because of our children, Erin and Conor. Now that the kids are grown and either working, or in college, it has freed up her time to be much more active in the last 4-5 years. It's great for both of us," he adds.

And with that, our interview begins...

Where would you like to see EGSA headed in the next 50 years?

Ed Murphy: "I'm confident that we have a current and relevant handle on our EGSA programs (via the work we have done in the last 4 years on the Strategic Long Range Plan). The missing link I see is that there is a lack of engineering talent coming into the ranks.

Our industry has a need for bringing in engineering talent, literally degreed engineers, and making them aware of this industry (on-site power) and what the potential is for them to have a fulfilling engineering career in power generation. How do we bring this awareness? Our industry is also experiencing a dwindling workforce as the Baby Boomers retire and there isn't a Millennial or GenX'r to take his/her place.

I also predict that there will be great technological advances that will continue in our industry for the next 50 years. It is not the 'sexiest' position for someone coming out of college, because they want to accomplish everything, but let's face it, the power grid is archaic. I remember when Aaron Jagdfeld, President of Generac Power Systems, gave us an in-depth presentation on North America's failing and aging power grid. That information stuck with me on how much further we, as an industry, can go."

How do you think new members can benefit most from their involvement in EGSA?

Ed Murphy: "I might say it a lot, but there are two words that bring benefit to a New Member in my opinion...Get Involved! Everyone needs to start somewhere. You get involved, you get recognized, and next thing you know you're asked to be in a position of authority. With that comes responsibility. If you do a good job, you go to the next level. Some are very comfortable right there, and that's great, but others want to reach higher. I feel very fortunate that I had a couple of senior mentors that pushed me to want to attain that next level. I hope I can inspire someone to do the same!"

Do you recall a story that epitomizes EGSA colleagues working together for the good of the industry (not just themselves or the firms that they work for)?

Ed Murphy: "I certainly do and it was also personal. I was honored to be a part of the EGSA Working Group that made our 2013 Executive Leadership Summit come to fruition.

At the Fall Conference that year, we were able to bring the 5 largest manufacturers together on the EGSA stage, an unprecedented feat.

First off, we formed a lean and mean working group that worked together to set up the format and provide each of the 5 industry giants and help EGSA. Secondly, we polled our members and really made every attempt to let them have a voice in the questions that would be asked that day, while being sensitive to the fact that most people need advanced preparations in order to be effective.

Everyone pulled their weight and the results were epic. We received great feedback from our members. Everyone had a voice and at the end of the day, we strengthened relationships with some of our largest manufacturers and the people who run these industry-leading companies."

What have you enjoyed the MOST (thus far) about being a Member of EGSA?

Ed Murphy: "For me, the biggest personal accomplishment so far, has been my run as the EGSA Conference & Communication Committee Chair for 4 years. While it may not look so tough, I've enjoyed the deadlines and going after the speakers on each speaker slate from 2011 until 2014. That was a big deal. I also learned a lot about public speaking. So much so, that I actually paid for a program to assist me in overcoming the 'fear of the podium.'

The amount of time and personal development during that period was very rewarding. I'm also very proud to have been EGSA's 50th Presi-

Ed Murphy – Power Search, Inc.

Top Left: *(L to R) EGSA creates fierce competition in certain circumstances, one is our EGSA Fishing Tournament. (l to r: Bob Hafich, Ed Murphy and Joe Hafich).* ***Top Right:*** *(L to R) EGSA President Ed Murphy, surrounded by a bevy of EGSA beauties, enjoyed hosting the President's Reception in the Fall.* ***Bottom:*** *EGSA President Ed Murphy enjoys showing off his full head of hair every chance he gets. Here he is, enjoying time with his daughter, Erin.*

dent. We had the opportunity to plan a year-long celebration that included a few extras to really make for an impactful celebration, both in the Spring in Jacksonville and Denver in the Fall."

Did you aspire to be in a leadership position within EGSA?

Ed Murphy: "I really didn't. After my term on the EGSA Board of Directors, I would have been very happy to remain Chair of the C&C Committee and remain the EGSA emcee for the Spring & the Fall until I retired.

When 2015 rolled around and I was in my 4th year of the 5-year term on the Executive Committee, I couldn't do both. I kind of feel like they had to drag me away from emceeing kicking and screaming. When it came time to step up and be the 50th EGSA President, I felt honored to serve during such a historic year, as well as represent Associate Members as one of the first of this membership type to have the role of EGSA President."

Any great rivalries or fun stories to share?

Ed Murphy: "They may kill me for saying this aloud, but the Tennis Tournament became nonexistent once Arthur Coren, Leo LeBlanc and Herb Whittall slowed down. At that point, Steve Stoyanac (Chillicothe Metal) seized the opportunity to promote the hell out of golf, thinking that he would have a monopoly. Unbeknownst to him, along came Vaughn Beasley (Ring Power Corp.) introducing fishing as a formidable challenger. He has made tremendous strides creating a great rivalry for Tuesday's closing reception. The torch has now been passed and Rick Hodgkins (Phoenix Products) has taken over for the Golfers and Vaughn, interestingly enough, who Rick reports to, maintains the role of Fishing Tournament Chair, so it will be interesting to see what develops in 2016!"

If you could tell a prospective member one thing about your experience as a Member, what would you impart to them?

Ed Murphy: "I've said it before, but I enjoy having ways to jog my memory, so here goes...

INFORMATION! There is a tremendous amount of information available to you before you show up, for example, the EGSA website & micro-site(s):

CONNECTIONS! Attendee lists, this shows existing customers, potential customers, competitors, people you want to connect with by company name, by last name and if they brought a spouse or significant other, they will be acknowledged too. It's all about Networking. Take advantage and utilize the tools;

EDUCATION! You're surrounding yourself amongst the most knowledgeable people in the On-Site Power Industry. Utilize your connections - Ask questions!

ENGAGEMENT! Committees, Committees, Committees! Find one that best suits your strengths and your part of the industry and attend, listen and volunteer. The sooner you get involved, the more you will feel a part of the team...that's where the benefits start evolving; and finally

PREPARATION!: There's only one question your superior will ask, as a result of your attendance at an EGSA Conference, 'What did we get out of this?' Know your goals before going in!

Ed will continue into 2016 as our Immediate Past President. After his duties on the Executive Committee are over, we know Ed will continue to serve EGSA as one of our hardest working volunteer members. Ed enjoys sharing his views on why we are a great organization. Feel free to approach him and ask him offline! He never meets a stranger.

Dennis Roundtree – Onsite Power, Inc.

Active Member - 1998 to Present

Dennis Roundtree Sits Down With EGSA to Talk About the Benefits of Serving the On-Site Power Industry Through His Membership in EGSA

Dennis Roundtree and his wife Cee Cee are what you might call 'regulars' at our EGSA Spring and Fall Conferences, as well as in the EGSA Family. Dennis began his relationship with EGSA before he really ever even knew it was happening. The story goes a little like this...

Industrial Power Systems (IPS) of Denver, CO was Dennis' employer at the time in 1998, very early in his career. The leadership there recognized that his great strength lay in working with people (and great weakness was in managing operations), so Dennis went from Branch Manager to Sales Manager and Dale Slemp was hired to be the Branch Manager (his boss).

"IPS had never been involved in EGSA, until Dale joined the company. One day, Dale popped into my office and he asked if I had ever thought about being a school instructor," Dennis remembers, "I will admit that I was somewhat resistant and gave it considerable thought before I circled back with him a few days later. When I went back to give Dale an affirmative, 'That's good, because I already told them yes' was Dale's response," he continues. Thus began what Dennis calls 'the most personally rewarding aspect of my EGSA involvement, being an instructor in the Rowley School.'

Dennis likens himself to a graduate of the school of hard knocks and details how he came to on-site power. "Originally, I set out to work on cars. I had no idea at that time that I would be in a power generation-related field. I went to Arizona Automotive Institute and was working as an automotive technician prior to gravitating to the industrial engine business.

"As an auto mechanic and gearhead, one of the biggest things that made me switch to on-site power sales was not only the opportunity to keep my hands clean; I truly gravitated to industrial sales because the car dealer atmosphere wasn't a big motivation for me to stay." Now, Dennis and Cee Cee own their own manufacturer's representative firm, Onsite Power Inc. in Aurora CO.

While it may have taken Dennis awhile to find our industry, he was lucky when it came to finding love! When we asked how he met Cee Cee, he told a story about the now defunct Win Win Business Forum. "The Win Win Business Forum was a group that I belonged to starting in 1987 that was really a great social outlet for me. The members seemed to have a higher calling; it was ethical and almost spiritual. Well, one February in 1988, they hosted a Valentine's Day Dance," Dennis laughs, "Frankly, I was about to leave, and there was a tap on my shoulder and she asked me to dance. We started to talk and talk and all of the sudden, it was 2:00 am, the dance was over and the band had packed up. We stayed in the group for awhile with the claim to fame of being the only couple to marry from the group; they even asked us to speak one time, but ultimately, the Win Win Business Forum broke up after awhile. It was probably my precursor to EGSA."

So Dennis began teaching at our EGSA Schools (now named the George Rowley School of On-Site Power Generation) in 1998 and has been an active member of the Education Committee from its inception. He has always felt that our education programs are our most significant contribution to the industry. "We have had some excellent leadership on this committee during my time with people I have grown to be friends with through the years—Dave Alley, Andy Ulavege, Michael Pope to name a few. My time spent as Chair was one of the most rewarding and cherished personal experiences," he adds.

Dennis has worn several hats during his tenure with EGSA. In addition to his tenure as an EGSA School Instructor since 1998, he has served as a Committee Officer (Education) from 2004 until 2006; Dennis Chaired the Committee from 2007-08 and from 2007 until 2009, he was a member of the EGSA Board of Directors.

Dennis was awarded the Timmler Award in 2009 for his work on the Education Committee, which is awarded for excellence on behalf of one of EGSA's Committees, but his all-time favorite moment was being the recipient of the James Wright Educator's Award in 2006. "If I had to go on record with my favorite EGSA moment, it was receiving the Jim Wright Award. Education is the thing that I am most passionate about and that is what I got the recognition for!"

And with that, our interview begins...

Who was the most influential person in EGSA when you initially joined? Why do you think that is true?

Dennis Roundtree: "It is very difficult to name just one, because there have been so many who have both helped me and taught me. Dale Slemp brought me into the organization and, as my boss everyday, helped me see things about myself that were limiting my success. Steve Stoyanac (Chillicothe Metal) and Dave Alley (Anna Inc.) have been friends, mentors and teachers. Charlie Habic (Gillette Generators) is a great inspiration with his love of fun that belies a strong sense of purpose and genuine love for the work of EGSA. Warner Bauer (Kickham Boiler) is a warm and congenial guy who is never stingy about sharing from his extensive knowledge base in both his field and the industry in general. George Rowley, who, more than anyone, transformed our loosely-organized seminar into a professional and respected educational program. However, if I have to pick one, it is Mike Pope (Clariant Corp). Mike has exceptional integrity, a quiet dignity that contrasts with my more, shall we say, heavy-handed style, and is just in general, who I would like to be when I grow up."

Dennis Roundtree – Onsite Power, Inc.

Top Left: *(L to R) Jit Roop, Dennis Roundtree and Dale Slemp enjoy our 50th annual Fall Conference in Denver this past September, 2015.*
Top Right: *Close Encounters of the Third Kind? Not exactly, but here Cee Cee and Dennis enjoy sightseeing at the Devil's Tower in Wyoming (made famous by the movie of course!)* ***Bottom:*** *(L to R) Don Becker, Cee and Dennis. Cee Cee and Dennis have not missed a conference since 2000. The Spring Conference in Jacksonville gave them the opportunity to renew old relationships, like seeing friends like Don Becker (Kohler Co., retired).*

Where would you like to see EGSA headed in the next 50 years?

Dennis Roundtree: "I think the organization needs to continue to define its role within the Industry. The evolution of member companies through consolidations, changes in ownership and the same changes we see throughout the business and political landscape will make it critical for EGSA to be clear in its mission and be able to communicate that mission to a new generation of business leaders whose values and goals will be a far cry from what us 'old guys' hold dear.

Continuing to recruit young, energetic and dedicated people who are in leadership positions in these evolving organizations is going to be very important, and answering the question "what's in it for me (or my company)" is going to be a focal point. There also should always be a place for the smaller businesses as well—one of the inspiring things about EGSA Conferences is seeing an executive from a Fortune 500 company sitting in a committee meeting alongside a husband and wife who own a generator repair shop, both working for the good of the Industry.

It is going to become harder to maintain that sense of selfless service and camaraderie that EGSA epitomizes, and I hope future EGSA leadership is successful in achieving that balance."

How do you think new members can benefit most from their involvement in EGSA?

Dennis Roundtree: "Honestly, it took me a while to figure out how to really 'fit in' to the work that EGSA does. You don't come to EGSA conferences expecting to walk away with a fistful of purchase orders. It takes dedication and a willingness to wade in and get involved to really see great benefit.

If you just show up to every second or third conference, skip the committee meetings and just generally try to 'hit and run' you will never appreciate what this organization will do for you personally and professionally. You have to wade in, get involved and stay involved."

Do you recall a story that epitomizes EGSA colleagues working together for the good of the industry (not just themselves or the firms that they work for)?

Dennis Roundtree: "I think the effort to develop the 5th Edition is the most telling example. It took a lot of time and a large number of people, all showing unselfish dedication to the process. I was very proud to have a small role in that effort."

What do you enjoy the MOST (thus far) about being a Member of EGSA?

Dennis Roundtree: "The camaraderie is the singular thing I have enjoyed the most thus far. I belong to a lot of organizations, but there is more of a genuine sense of family in this organization, more than any other I have been associated with. Some of our closest friendships have been formed in EGSA."

Tell us about your hobbies and interests outside the Power Generation Industry. They can be past hobbies or what you are up to at the moment!

Dennis Roundtree: "Cee Cee and I camp, bike and hike a lot, if you call hanging out in a 40-ft fifth wheel camping. I have always been a dedicated auto racing fan, and we make it to several out of state events every year, including at least one NASCAR race. We love to travel, and our job makes it both possible and necessary to be on the road a lot. We have a 6-state sales territory and it is not unusual to see us mix in a sales trip with a pleasure trip."

Do you bring your spouse to EGSA events and if so, please share anything you might wish to about their experience or that subject in general?

Denis Roundtree: "Cee Cee is an active partner in our business, and I often introduce myself as 'the guy who escorts Cee Cee to EGSA.' I think most people know her, and her enthusiasm and networking skills make her both an exceptional asset to the business and a genuine pleasure to have with me. We are truly teammates in every sense—I am very fortunate in that I get to work every day alongside my best friend. Cee Cee looks forward to EGSA conferences more than anything else we do professionally."

Dennis and Cee Cee enjoy a great reputation within EGSA. As he has said many times, one of the reasons that they participate is that it is a chance for them both to serve (our industry) and learn. "The value we get is not from the fist full of purchase orders, it is the chance to learn and contribute, and there is great value to me in that. To get the full benefits, you have to climb in!"

Thanks to both Dennis and Cee Cee for their attendance and active participation! We'll see you in Las Vegas for POWER–GEN International 2015!

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Genset Engine Heating in a Data Center Environment

Performance Analysis of Forced Circulation Heaters Versus Thermosiphon Heaters Installed on Standby Generators

By Devin Parker, HOTSTART

Figure 1. Generator sets housed in the data center facility. Each of the four generator sets is rated for 2 MW and is powered by a CAT 3516 engine.

Executive Summary

Real-World Comparison Testing

In the generator set market, forced circulation heating systems are often touted as being a forward-thinking, environmentally-friendly, high efficiency alternative to the traditional thermosiphon engine heater. However, these claims often lack quantitative evidence. Facilities managers, tasked with purchasing engine heating systems for data center generators, must then decide whether the high efficiency claims of a forced circulation system outweigh the inexpensive and uncomplicated legacy technology of the thermosiphon heating option.

To put numbers to this comparison, HOTSTART partnered with a major data center, located near Minneapolis/ St. Paul, Minnesota and Ziegler CAT — the regional Caterpillar dealer. For most organizations, data centers are critical to everyday operations and must be equipped to sustain maximum uptime. A typical data center relies on multiple onsite backup power generators. In turn, each of those generators must be equipped with an engine heating system to enable the generators to start and assume a full power load quickly enough to ensure uninterrupted data center operation. Because backup power is critical in these applications, testing in a data center environment presents the perfect opportunity for a true real-world comparison of thermosiphon and forced circulation performance and energy efficiency.

HOTSTART technicians set up a test to monitor two engines — one heated with a single HOTSTART HOTflow 6 kW CSM forced circulation heating system and the other employing two standard 6 kW thermosiphon heaters. Performance data (engine temperature and energy consumption) was collected and analyzed.

Testing revealed the forced circulation CSM to be a much more efficient heating system. However, our test data also indicated that the CSM actually outperformed the two 6 kW thermosiphon heaters in terms of heat distribution: The CSM consumed less energy while heating the engine more effectively.

For forced circulation systems, including the HOTSTART CSM, high-efficiency claims only tell half of the story — the data shows that *forced circulation systems are more efficient and more effective heating systems overall.* Therefore, facilities managers choosing a heating system must factor in ROI based both on the benefits of lower energy consumption and the benefits of better performance to ensure data centers in their care have the best possible generator set engine heating systems available.

Test Parameters

Test Location

This test was performed at a major data center located near Minneapolis/St. Paul. While Minnesota's winters are known for their severity, our test generators were housed indoors in a heated generator room; the lowest ambient temperature the room was expected to experience over the course of a year was about 55 °F.

The data center generator room housed four generator sets rated at a two megawatt output; each was powered by a Caterpillar 3516 four-stroke diesel V-16 engine — 4210.64 cubic inches in displacement (69 liters).

Each generator set was preheated by two 6 kW vertically mounted thermosiphon heaters. To evenly distribute heat throughout the V-type engine, one 6 kW heater was mounted and plumbed to each side of the engine. The thermosiphon heaters were intended to be operated in unison for heat distribution purposes only; both units provided heat while the engine was shut off. This configuration was not intended to provide redundancy in the event of a single heater failure.

On hand to conduct and monitor the test were HOTSTART's Jeff Thompson, HOTflow market manager and engine heating efficiency expert; Russell Maw, the CSM's product design engineer; and Ziegler CAT's Bob Eisenschenk, field service project

Figure 2. HOTSTART 6 kW CSM heater, showing tank, pump and control box.

manager. Data center management staff members were also onsite to directly observe and review testing.

Test Heater

The test heater was a 6 kW HOTSTART HOTflow CSM unit. While thermosiphon heaters rely on the natural expansion and rising of heated fluid to drive circulation, the CSM uses a centrifugal pump to circulate heated coolant, continually pumping coolant throughout the engine's water jacket and activating the heating element when the temperature falls below a preset limit. This continual circulation is designed to increase energy efficiency and heat distribution by minimizing hotspots and promoting uniform and consistent heating.

In an indoor environment with a minimum temperature no lower than 55 °F, HOTSTART technicians expect that a 6 kW CSM will adequately heat a 69 liter engine, such as the CAT 3516, and maintain a minimum internal engine temperature of 90 °F.

Test Premise

The testing was intended to quantitatively answer two questions:

- Can a single forced circulation heater distribute effective heating throughout the engine block when compared to a pair of thermosiphon heaters operating in unison?
- Can a single forced circulation heater heat efficiently and deliver measurable cost savings in the form of energy conservation?

Test Tools

To measure heating performance and efficiency, HOTSTART technicians used the following equipment:

Thermocouples

Thermocouples are electronic heat-sensing devices. Each thermocouple is designed to be attached to a surface by adhesive and converts temperature data to an electrical output. For thorough analysis, temperature data from multiple thermocouples was collected and recorded.

Current Transformer Sensors

Current transformer (CT) sensors are electronic devices designed to record the energy usage of a particular device or system and are commonly used in the energy utility industry. CT sensors were placed on both the thermosiphon heaters as well as the CSM's pump and element to measure how much electrical energy each heating system consumed during testing.

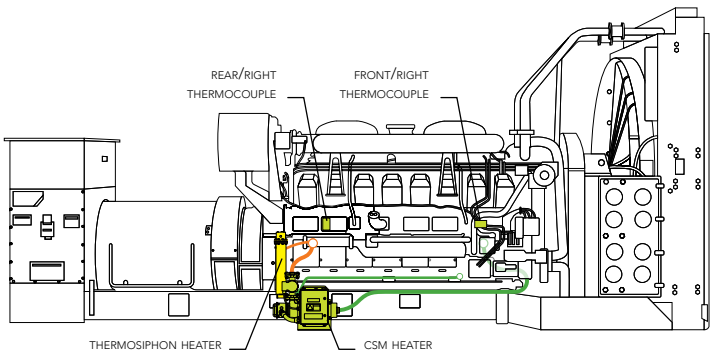


Figure 3. The test engine's right side, showing CSM, thermocouples and thermosiphon heater. While the right thermosiphon heater remained in service at the facility manager's request, it provided a negligible amount of engine heating.

Figure 4. The test engine's right side with installed CSM and thermosiphon heater. Both heaters share a single return port using a Y-fitting.

Figure 5. The test engine's left side showing CSM supply port. The supply port is mounted to the opposite side to ensure even heat distribution.

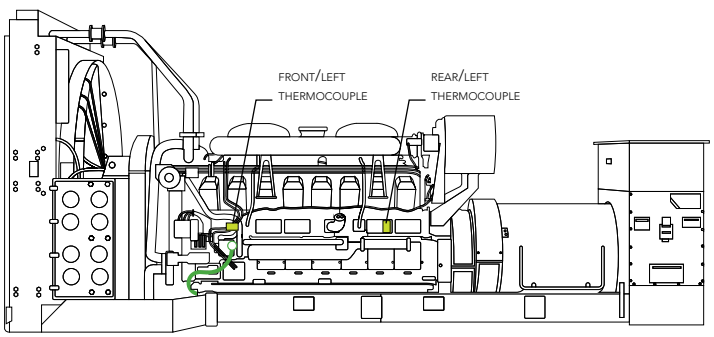


Figure 6. The test engine's left side, showing CSM supply port and thermocouples. To ensure effective heating was applied to both cylinder banks of the V-type engine using a single heater, the CSM supply port was installed on opposite side.

Fig 7. Thermocouple shown attached to the test engine block (above). Temperatures from all points were captured using a temperature data logger (below).

Thermal Imaging Camera

To view heat distribution in real-time, HOTSTART technicians viewed test generator sets with a thermal imaging camera. A thermal imaging camera uses the infrared spectrum to translate heating energy as a color-coded image. Thermal imaging cameras can visualize heat distribution during engine heating — detecting hot spots that may damage heater plumbing or cold spots inside an engine's water jacket.

Test Plan & Procedures

Methods

To conduct the test, HOTSTART technicians removed one 6 kW thermosiphon heater from the designated test engine and replaced it with a single 6 kW CSM. By request, the remaining thermosiphon heater mounted to the right side of the test engine was left connected and energized, although the CSM's forced circulation system ensured that it would provide most, if not all, engine heating. To determine whether the thermosiphon heater impacted the performance of the CSM, HOTSTART technicians collected data from the test engine heaters' CT sensors and test engine block's thermocouples.

To establish a performance baseline, thermocouples were also placed on an identical adjacent generator set as a control. The control engine was left with both 6 kW thermosiphon heaters operating normally. To establish a baseline energy consumption level, CT sensors were also placed on the control engine's thermosiphon heaters.

CSM Installation

To accommodate the CSM, the thermosiphon heater on the right side of the test engine was rotated 180 degrees and remounted in the same location. A Y-fitting was installed at the oil cooler and both the right thermosiphon and CSM return ports were routed to this location.

To allow the single CSM to effectively heat the entire engine block, the CSM's supply line was installed on the opposite (left) side of the engine block. HOTSTART recommends this type of cross-installation for V-type configurations; cold coolant is drawn from the far bank of cylinders, while heated coolant is returned to the near cylinder bank. As the pump continuously circulates coolant, heat is effectively distributed across the entire engine jacket, eliminating the need for multiple heaters to preheat a single engine block.

The data center representative requested that the thermosiphon heater connected to the right side of the test engine remain active due to concerns with heater redundancy during testing as all four generators remained in service during the testing and could potentially be called into action during a power event. While not a HOTSTART recommended installation configuration, the thermosiphon heater on the right side remained installed and activated to address these concerns. Although our technicians expected the CSM to provide the bulk of the test engine's heat, the remaining right thermosiphon heater was monitored during testing to measure how much, if any, engine heating it provided.

The thermosiphon heater that was previously connected to the left side of the test engine was removed for the entire test duration.

Heating Performance

The first temperature measuring point was the ambient temperature of the room, to establish a baseline for testing. To measure temperatures across the entire water jacket, four thermocouples were attached to each engine block; one thermocouple was placed toward the radiator end of the block and one toward the flywheel end on each side of both the test and control engines.

To measure the temperature of the heaters, a thermocouple was placed at the inlet and outlet of all four heaters. The ambient temperature of the room and the temperature of engine block sections were also recorded for analysis.

Energy Consumption

To measure energy consumption, CT sensors were placed on the element power connections for the three thermosiphon heaters (one for each thermosiphon heater attached to the control engine, and one for the thermosiphon heater attached to test engine). To measure the CSM's energy consumption, a CT sensor was placed on the power source for the element as well as the pump motor. For a more in-depth analysis, HOTSTART technicians sought to measure how much energy the CSM was drawing to circulate the fluid using its pump versus heating the fluid using the element.

Duration and Conditions

Data, from both the CT sensors and thermocouples, was collected from July 17th to August 17th — a total of 32 days. Each day, temperatures were recorded at one minute intervals and averaged for the 24 hour period. Daily averages were also collected for energy consumption.

During two consecutive days of the test, July 21st and July 22nd, the generators were activated during approximately 30% of each day. This period is reflected in the test data, showing a decrease in engine heating provided by both the thermosiphon heaters and CSM as the engines supplied their own heat during operation. (All CSM heating systems are equipped with a relay intended to shut down the heating system during engine operation.) Once the engines were shut down, engine heating resumed as normal.

The thermosiphon heater installed on the left side of the control engine suffered a malfunctioning CT sensor and our technicians were unable to collect energy consumption data for this unit after July 22nd. However, once the data was reviewed,

HOTSTART was able to estimate the energy consumption of this unit based on data collected from the two remaining thermosiphon heaters.

During testing, ambient temperatures were as expected for an enclosed generator room in Minnesota during July and August; temperatures in the room ranged from a low of 84 °F to 102 °F. These relatively high room temperatures meant the heaters were not tasked with raising the internal engine temperature above a low ambient temperature. Instead, the heating performance comparison centered on the heaters' ability to maintain a consistent and even block temperature prior to engine start-up.

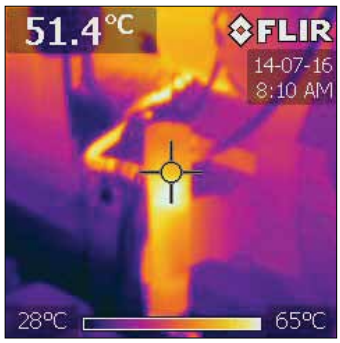


Figure 8. Thermal image of the outlet section of a thermosiphon heater. Consistently high average temperatures as recorded at the control engine's left (170.6 °F) and right (158.5 °F) thermosiphon heater outlets may reduce hose and coolant longevity.

Test Data

Average Engine Block Temperatures

The following table shows the daily average temperatures of the control engine block and the test engine as measured with attached thermocouples during testing:

Day	Control Engine				Test Engine			
	Left/ Front °F	Left/ Rear °F	Right/ Front °F	Right/ Rear °F	Left/ Front °F	Left/ Rear °F	Right/ Front °F	Right/ Rear °F
17 July	118.0	122.7	117.6	119.7	101.6	102.1	101.8	103.4
18 July	119.7	124.2	119.5	121.3	101.7	102.0	102.1	102.9
19 July	120.4	124.8	120.2	121.9	100.3	100.6	101.0	101.3
20 July	121.0	125.5	120.9	122.5	100.0	100.2	100.8	100.9
21 July*	144.6	138.6	111.6	110.7	107.3	132.2	134.8	132.0
22 July*	142.4	131.6	92.1	91.2	95.4	134.4	138.2	135.0
23 July	118.6	119.9	83.6	86.6	93.2	102.1	104.2	103.3
24 July	117.4	118.5	82.0	83.7	100.6	101.3	103.2	102.7
25 July	116.7	118.8	84.0	84.3	100.5	100.9	103.0	102.2
26 July	120.8	122.7	88.9	88.4	99.0	99.3	101.2	100.1
27 July	116.4	118.0	82.6	82.6	100.1	100.8	102.8	102.1
28 July	118.3	117.5	80.8	82.5	100.7	101.4	103.6	102.9
29 July	114.3	115.2	79.2	80.9	100.7	101.5	103.6	103.1
30 July	114.3	115.6	79.0	80.6	100.8	101.6	103.6	103.3
31 July	115.3	116.5	80.2	81.7	100.7	101.4	103.4	103.0
1 August	115.4	117.1	80.7	82.0	101.1	101.7	103.7	103.3
2 August	115.9	117.9	81.3	82.3	100.9	101.6	103.5	103.1
3 August	116.0	118.4	82.3	83.3	101.2	101.9	103.7	103.4
4 August	115.3	117.2	81.9	83.0	101.1	101.7	103.7	103.2
5 August	114.7	116.7	80.5	81.9	101.0	101.8	103.7	103.3
6 August	115.4	118.0	80.5	81.9	101.1	101.8	103.6	103.4
7 August	116.3	119.1	81.0	82.1	101.2	101.9	103.8	103.4
8 August	115.3	118.1	81.2	82.2	101.1	101.8	103.8	103.3
9 August	114.3	116.9	80.4	81.5	100.8	101.7	103.6	103.2
10 August	115.2	117.9	80.9	81.7	101.1	101.9	103.8	103.4
11 August	114.5	115.1	77.5	79.4	100.9	101.8	103.9	103.6
12 August	114.8	115.8	77.3	78.9	100.8	101.6	103.7	103.4
13 August	115.5	117.9	79.2	80.4	100.8	101.6	103.7	103.3
14 August	116.6	118.9	79.9	80.7	101.3	101.8	103.7	103.2
15 August	118.8	121.2	85.8	85.7	102.0	102.4	104.1	103.6
16 August	119.4	121.5	87.3	87.2	102.0	102.3	103.9	103.3
17 August	119.2	122.1	87.0	87.7	102.2	102.6	104.1	103.6
Average	116.8 °F	119.0 °F	86.8 °F	88.0 °F	100.7 °F	101.6 °F	103.3 °F	102.9 °F
	117.9 °F		87.4 °F		101.15 °F		103.1 °F	
Total	102.6 °F				102.1 °F			

Heating performance is comparable between the test and control engine blocks: the total block average temperature is within five tenths of a degree. However, when examining heat distribution throughout the blocks more closely, the test engine shows even heat distribution across all sections of the block. The difference between the hottest section of the block (front/right at 103.3 °F) and the coolest section of the block (front/left at 100.7 °F) is only 4.6 °F.

In contrast, the difference between the hottest section of the control engine block average (rear/left at 119.0 °F) and coolest section of the control engine block (front/right at 86.8 °F) is 32.2 °F. This large difference in temperature suggests that not all portions of the control engine may be at optimal temperature during an engine start-up — potentially causing unnecessary wear over the engine's operating life.

Heating system performance itself may also be negatively impacted by uneven heating. Because thermosiphon heaters rely exclusively on thermal expansion to circulate coolant, outlet temperatures may be consistently higher than a comparable forced circulation system. These

Table 1. Average engine block temperatures for both the control engine and test engine.
** The data from July 21 and July 22 was not included in the average temperatures. During these days the control engine and test engine were active and supplying power. Temperature data from these days was altered due to the engines' own heat generated during operation.*

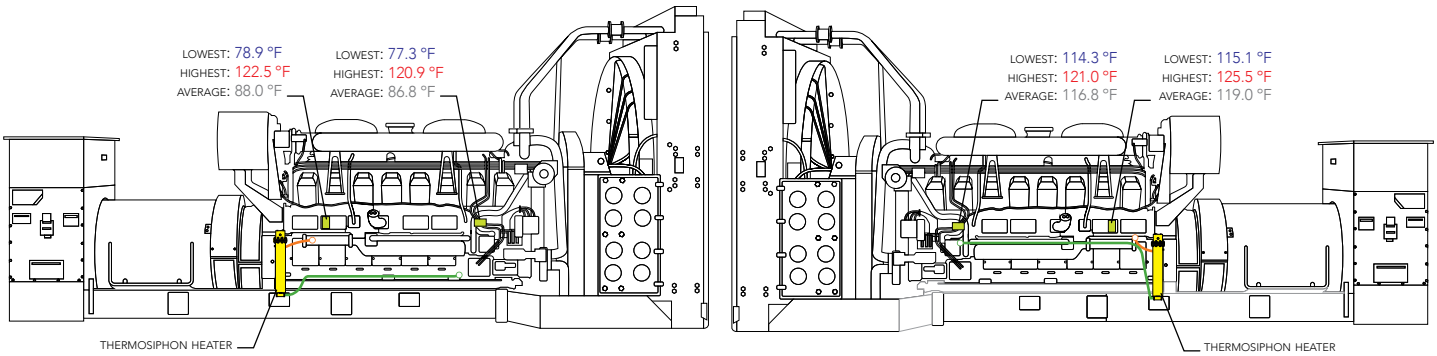


Figure 9. The control engine right side (above) and left side (right), showing thermosiphon heater, thermocouples and recorded temperatures.

While each thermosiphon was intended to supply heat evenly to the V-type engine, heating temperatures varied greatly across all sections of the block. The collected average temperatures suggest that difference in temperature from the warmest average section of the engine block (rear/left) and the coolest average section of the engine block could be as much as 32.2 °F.

While the engine's onboard temperature alarm may not signal a low temperature, the temperature of the coolest section of the engine block may be below the recommended 90 °F limit during start-up. Repeated engine starts at low temperatures may increase engine wear and reduce the engine's operating life.

high temperatures may reduce the heating system's hose longevity, resulting in more frequent heater service. As Ziegler CAT's facility field service project manager, Bob Eisenschenk observed, "The one thing we see in systems that are poorly maintained is heater hose failure because it's so hot all of the time. Whereas with a powered flow heater everything is consistent — you get a lot longer life out of your hoses and coolant as well."

Average Heater Energy Consumption

To establish a baseline for energy consumption, the power consumed by the control engine's two thermosiphon heaters was measured. While the thermosiphon heaters are intended to operate in unison, in real-world scenarios it is likely that one thermosiphon heater will be active for longer periods of time and consequently will draw more power due to variances in installation and hose routing. Additionally, some sections of an engine block may lose heat more rapidly than others.

Control Engine Heater Energy Consumption

As indicated by the data, *(chart on opposite page)* the thermosiphon heaters on the control engine showed an approximate 60/40 split in energy consumption. However, the average block temperature for the right side of the control engine was about 19 degrees lower than the left side. This suggests that the right side of the engine may have lost heat more rapidly, causing the right thermosiphon to consume more energy to maintain an average temperature of only 87.4 °F. While the scope of this project did not entail discovering the cause of the heating discrepancy, this example of asymmetrical heating and power usage is expected even from similar heaters mounted in unison. Factors such as engine water jacket configuration, port selection, and hose routing may greatly alter a thermosiphon heater's effectiveness and efficiency.

Test Engine Heater Energy Consumption

When measuring the energy consumption of the test engine, HOTSTART technicians also carefully monitored the remaining thermosiphon heater to ensure that it did not interfere with the direct evaluation of the CSM's performance. The following table shows the energy consumption of the test engine's thermosiphon heater and installed CSM.

The CSM's pump drew a consistent amount of energy as it continuously circulated coolant throughout the engine's water jacket while the CSM's element shows fluctuating energy consumption — energizing only when the CSM thermostat measured a coolant temperature at or below its preset range. And

Control Engine Heater Energy Consumption

Day	Control Engine		Test Engine		
	Left Thermosiphon kWh	Right Thermosiphon kWh	CSM Element kWh	CSM Pump kWh	Right Thermosiphon kWh
7 July	55.98	87.46	35.83	2.06	7.71
8 July	51.32	81.12	25.28	2.06	11.64
9 July	49.79	77.00	12.35	2.06	21.56
0 July	48.49	74.22	6.13	2.06	24.55
1 July†	–	–	–	–	–
2 July†	–	–	–	–	–
3 July	51.39*	70.46	24.86	2.06	14.63
4 July	51.39*	82.39	44.88	2.06	12.64
5 July	51.39*	92.82	27.26	2.06	17.14
6 July	51.39*	93.87	0.00	2.06	32.72
7 July	51.39*	94.67	46.89	2.06	14.13
8 July	51.39*	97.79	56.79	2.06	8.13
9 July	51.39*	114.32	57.00	2.06	7.97
0 July	51.39*	102.20	58.70	2.06	7.22
1 July	51.39*	112.95	56.97	2.06	8.64
August	51.39*	112.12	46.80	2.06	8.48
August	51.39*	110.21	53.24	2.06	8.84
August	51.39*	103.54	45.59	2.06	8.95
August	51.39*	106.91	46.22	2.06	9.19
August	51.39*	108.49	56.48	2.06	6.94
August	51.39*	98.15	55.42	2.06	7.64
August	51.39*	85.84	54.29	2.06	7.06
August	51.39*	95.88	49.12	2.06	7.54
August	51.39*	106.39	55.28	2.06	7.19
0 August	51.39*	98.71	53.65	2.06	6.82
1 August	51.39*	106.43	69.91	2.06	4.32
2 August	51.39*	102.52	62.54	2.06	5.80
3 August	51.39*	91.08	59.11	2.06	6.64
4 August	51.39*	86.90	51.38	2.06	7.90
5 August	51.39*	82.19	26.00	2.06	11.57
6 August	51.39*	79.19	21.04	2.06	12.69
7 August	51.39*	76.60	28.01	2.06	11.40
Average	51.39*	94.41	42.90	2.06	10.92
			44.96		
Total	145.8 kWh per day		55.88 kWh per day		

Table 2. Energy consumption of the control engine heaters and test engine heaters.

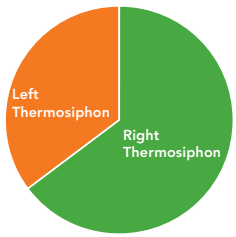
** The control engine's left thermosiphon energy consumption after July 22nd is estimated due to a CT sensor malfunction.*

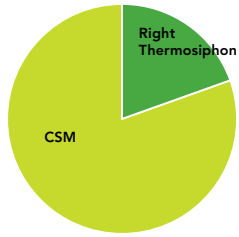
† The data from July 21 and July 22 was not included in the average temperatures.

Test Averages	Control Engine		Test Engine	
	Left Thermosiphon	Right Thermosiphon	CSM	Right Thermosiphon
Block Temperature	117.9 °F	87.4 °F	103.6 °F	
Energy Consumed	51.39 kWh	94.41 kWh	44.96 kWh	10.92 kWh
Energy Percentage	35.25%	64.75%	80.46%	19.54%

Table 3. Test averages for block temperatures and energy consumed. The control engine shows a split between left and right sides of the engine, both in the average heat as well as the energy consumed by the thermosiphon heater on that side.

When the CSM is added to the test engine scenario, the right thermosiphon, which we would expect to consume 81.12 kWh, consumes only 10.92 kWh as the CSM assumes the bulk of the engine heating duty.





while the CSM provided the majority of the engine heating and consumed most of the energy, the test engine thermosiphon is represented here as well — showing an approximate 20/80 split in energy consumption with the CSM.

To put the test engine's thermosiphon heater's consumption into context, the average daily energy consumed by the test engine's right thermosiphon was compared to the control engine right thermosiphon heater. With the introduction of the CSM, the right thermosiphon heater (which normally would consume 81.12 kWh) consumed only 10.92 kWh, or only 13.46% of its expected energy consumption. This suggests that while the test engine thermosiphon heater remained connected and active, it consumed only a fraction of the power and provided a negligible amount of overall engine heating. The CSM forced circulation system was effectively preheating the test engine unassisted.

Heater Energy Consumption Comparison

With the power consumption of both engines' heating systems captured, HOTSTART technicians compared the two engines side-by-side; this comparison would answer how efficiently the CSM had heated the engine and predict how much savings customers may be able to realize.

These averages show significantly more energy consumption by the control engine's two thermosiphon heaters. In contrast, the test engine heaters (primarily the CSM) consumed 38.3% less energy over the duration of the test — while delivering engine heat throughout the block more consistently.

According to the U.S. Energy Information Administration, the average commercial electricity rate for Minnesota (as of January 2015) is $.0907 per kWh. Applying this rate gives us the estimated cost of operating the engine heating systems for both the control engine and test engine over various intervals.

Interval	Control Engine	Test Engine	Savings
Daily	$13.22	$5.07	$8.15
Monthly (31 days)	$409.82	$157.17	$252.65
Annual	$4,825.30	$1,850.55	$2,974.75
5 Year	$24,126.50	$9,252.75	$14,873.75

Table 4. Estimated operating costs for the control and test engine heating systems using the Minnesota average commercial electrical rate as of February 2014. See www.eia.gov/state/ data.cfm?sid=MN#Prices for more information.

Minnesota has a relatively low commercial electricity rate when compared to the national average of $.1067 per kWh. In the event that upgraded heating systems are installed at facilities where the electricity rate may be higher, greater savings can be realized. For example, if heating systems were upgraded in data centers in other locations, such as Michigan ($.1076 per kWh); California ($.1323 per kWh); or (New York ($.1749 per kWh), cost savings would be magnified due to those locations' relatively high commercial electricity rates.

Test Outcomes & Takeaways

Post-Test Upgrades

Since hosting the comparison test, the customer's facility has since upgraded all backup generator heating systems to the HOTSTART CSM. As part of the upgrade, the customer was able to take advantage of local utility rebates offered in their area. Rebate programs like these are a true win-win for all parties involved: The utility benefits from a more resource-responsible energy consumer, and at the same time, the customer is able to offset the cost of implementing new, energy-efficient technology.

As a direct result of the comparison testing in their Minnesota facility, the customer has also upgraded heating systems beyond the original data center, working with Ziegler CAT and other regional CAT dealers. As Bob Eisenschenk stated, "… they have since now started updating other data centers as well — not in Minnesota — but other states. So we made a pretty good impression."

When it comes to data centers, maintaining maximum uptime is of the utmost importance; keeping the backup generators in a constant ready state is essential. However, what's often overlooked is the cost of maintaining that critical level of readiness, both in terms of energy consumed and the maintenance resulting from wear and tear on the generators themselves. While generators sit idle, their heating systems are constantly drawing power, impacting the data center's bottom line. And, when called upon to provide backup power, generators can be susceptible to wear and tear resulting from uneven or ineffective heating.

"...they have since now started updating other data centers as well -- not in Minnesota -- but other states. So we made a pretty good impression."

-Bob Eisenschenk, Field Service Project Manager, Ziegler CAT

This comparison testing reveals the need to properly assess forced circulation heaters when choosing an engine heating solution. When directly compared head-to-head against legacy thermosiphon heating solutions, forced circulation systems offer advantages in terms of lower energy consumption and lower maintenance costs — offering a significant return on initial investment.

For more information regarding this comparison test or to learn more about HOTSTART HOTflow engine heating solutions, visit *www.hotstart.com.* ■

Continued from page 10

ceeded in getting an EGSA Certified Journeyman Technician clause added to genset specifications.

Here is a sample sentence that you could use:

New equipment specification:

The [generator set supplier] [emergency power system provider] is required to have Electrical Generating Systems Association (EGSA) Certified Technician(s), Journeyman Level, on their staff in order to properly supervise or perform the installation, commissioning and future service and maintenance of this equipment.

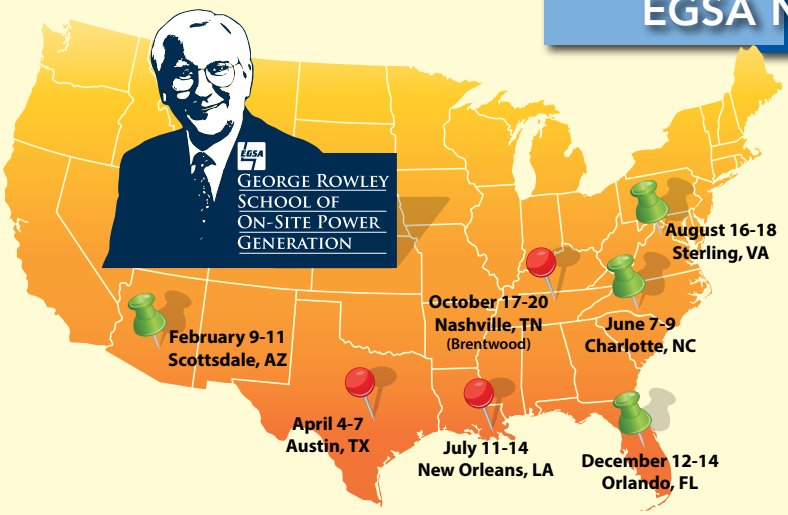
Service contract specification:

The provider of maintenance services under this maintenance contract is required to have Electrical Generating Systems Association (EGSA) Certified Technician(s), Journeyman Level, on their staff in order to properly supervise or perform service and maintenance of the equipment covered by this service contract.

If you are consulting with a specifying engineer, electrical contractor or the end user, point out the many advantages of this requirement, which include:

- Shade-tree mechanics with a nice website are not qualified to work on their vital equipment. It may be difficult to qualify technicians without a national, brand independent testing organization.
- EGSA Certified Technicians have been tested on all aspects of a generator system. Some manufacturer certifications only test the technician on their generator set, not other manufacturers' equipment - such as transfer switches, day tanks, load banks, etc.
- EGSA Certified Technicians' knowledge is not brand specific so their knowledge is broader in scope.
- The EGSA test is not easy to pass! Only 44% have been able to pass it this year. A really high level of competency has been established by EGSA.
- The EGSA Certification program is the only industry-wide, generic, national testing program in existence.
- There are over 1,400 EGSA Certified Technicians in the USA and Canada. Technicians from other countries have also used the EGSA program to establish proof of their knowledge. To see where they are located go to *http://egsa.org/EducationbrCertification/TechnicianCertification.aspx* and click on the map.

Please let us know at *e-mail@egsa.org* if you have succeeded in having an EGSA Technician clause added to a specification! ■



EGSA Schedules Seven George Rowley Schools of On-Site Power Generation in 2016

EGSA has announced a schedule of four basic and three advanced George Rowley Schools of On-Site Power Generation for 2016. For full details and registration information, visit *www.egsa.org.* ■

Basic Schools

- February 9-11 ..... Scottsdale, AZ
- June 7-9 ..... Charlotte, NC
- August 16-18 ..... Sterling, VA
- December 12-14 ..... Orlando, FL*

**To be held concurrently with Power-Gen 2016*

Advanced Schools

- April 4-7 ..... Austin, TX
- July 11-14 ..... New Orleans, LA
- October 17-20 . Nashville (Brentwood), TN

EGSA Announces 2016 Board Election Results

The Electrical Generating Systems Association proudly announces the election of officers and 4 new Board Members for 2016. These new Board Members will assume their offices on January 1, 2016.

The 2016 EGSA Executive Board Members are:

President – Robert Hafich, *Emergency Systems Service Co.*

President-Elect – Charlie Habic, *Gillette Generators Inc.*

Vice President – Dave Brown, *Collicutt Energy Services Inc.*

Secretary-Treasurer – Todd Lathrop, *Eaton*

Immediate Past President - Ed Murphy, *Power Search, Inc.*

Also elected to the Board of Directors at large, please welcome our incoming (2016-2018) Board Members:

Paul Feld, *Penn Power Systems*

Bob Piske, *Arizona Generator Technology, Inc.*

Steve Sappington, *Caterpillar, Inc.*

Kurt Summers, *Load Banks of America*

These 4 incoming Members of the EGSA Board of Directors will join the following Directors, who remain on the Board of Directors through the coming year:

Ole E. Haaland, *Anna Inc.*

Bill Kaewart, *SENS (Stored Energy Systems, LLC)*

Dennis Pearson, *Woodward*

David Stringer, *DEIF, Inc.*

Tom Wein, *Generac Power Systems*

Application for Membership

ELECTRICAL GENERATING SYSTEMS ASSOCIATION

1650 South Dixie Highway, Suite 400, Boca Raton, FL 33432 • 561-750-5575 • FAX 561-395-8557
E-Mail: *e-mail@EGSA.org* • Website: *www.EGSA.org*

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.

EGSA MEMBER CLASSIFICATION & DUES SCHEDULE (Choose appropriate membership below and enter amount in box #3 on reverse)

FULL MEMBERSHIP	Annual Dues	Initialtion Fee	TOTAL DUE
❑ MF **Manufacturer Membership** Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria: 1. They manufacture prime movers for power generation. 2. They manufacture generators or other power conversion devices producing electricity. 3. They manufacture switchgear or electrical control devices. 4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution. 5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.	$870	~~$200~~	**$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.			
❑ CI **Contractor/Integrator Membership** 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	~~$100~~	**$310**
❑ MR **Manufacturer's Representative Membership** 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.			
❑ EM **Energy Management Company Membership** Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.	$210	~~$100~~	**$210**

Initiation Fee Waived Through 2/29/2016

ASSOCIATE MEMBERSHIP	Annual Dues	Initialtion Fee	TOTAL DUE
❑ **Associate Regular Membership** *(Select Appropriate Category Below)*	$210	~~$100~~	**$210**
❑ **Associate Full Membership** Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to **enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors.** Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates. *(Select Appropriate Category Below)*	$310	~~$100~~	**$310**

PLEASE SELECT ASSOCIATE MEMBERSHIP CATEGORY

Associate Membership Categories - Select One				
❑ AA **Trade Publication Membership** Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership–Trade Publications.				
❑ AB **Trade Association Membership** Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership.				
❑ AC **Engineer Membership** Any consulting or specifying engineer may apply for Associate Membership–Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.				
❑ AD **End-User Membership** Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership–User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.				
❑ AE **Service Membership** Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership–Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.				
❑ AG **Educational Institution Membership** Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership–Education Institution.				
❑ AM **Military Membership** Any individual who is currently enlisted, or who has been discharged, or has retired from the US or Canadian Military may apply for membership within this category. Proof of military engagement is required by either current Military ID card or honorable discharge documents.	$50	N/A	**$50**	
❑ AR **Retiree Membership** Any individual who retires from a member company may apply for Associate Membership–Retired. This classification does not apply to any individual who is employed more than 20 hours per week.	*Complimentary*		**$0**	
❑ AF **Student Membership** Any individual currently enrolled at an academic institution may apply for Associate Membership–Student.	*Complimentary*		**$0**	

1. Contact Information

Company _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Phone _____ FAX _____

Official Representative _____ Title _____

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

How did you hear about EGSA? ❑ Web site ❑ *Powerline* magazine ❑ Colleague ❑ POWER-GEN ❑ Other _____

Why are you joining EGSA? ❑ Certification Program ❑ CEU Program ❑ Power Schools ❑ Buying Guide Listing ❑ Other _____

2. 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 (MR)
- ❑ Energy Management Company (EM)

Associate Memberships

- ❑ Regular Associate Membership →
- ❑ Full Associate Membership →

(Select Appropriate Catagory)

- ❑ Trade Publication (AA)
- ❑ Trade Association (AB)
- ❑ Engineer (AC)
- ❑ End User (AD)
- ❑ Service (AE)
- ❑ Educational Institution (AG)
- ❑ Military (AM)
- ❑ Retiree (AR)
- ❑ Student (AF)

3. Membership Dues

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

Membership Dues	$_____
Membership Plaque (optional)**	$ 55.00**
On-Site Power Reference Book (optional)**	$ 140.00 **
Florida Residents: Add 6% Sales Tax to ** items	$_____
*** Shipping and handling is included for Continental US Residents.*	
Non-Continental US Residents should call EGSA	$_____
*Headquarters for shipping charges for **items.* **TOTAL**	$_____

4. Payment Method

(Payable in US$ drawn on U.S. bank, U.S. Money Order, or American Express)

❑ Check #_____ Amount Due $ _____

❑ Mastercard ❑ Visa ❑ American Express

Card # _____ Exp. Date _____

Signature: _____

Print Name: _____

5. Products/Services

Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

_____

_____

_____

_____

Do you buy AND sell equipment? ❑ Yes ❑ No Do you manufacture packaged equipment? ❑ Yes ❑ No

Available Codes:

01 ---Batteries/Battery Chargers
02 ---Control/Annunciator Systems
29 ---Education
30 ---Emission Control Equipment
04 ---Enclosures, Generator Set
05 ---Engines, Diesel or Gas
06 ---Engines, Gas Turbine
07 ---Engine Starters/Starting Aids
08 ---Filters, Lube Oil, Fuel or Air
28 ---Fuel Cells
03 Fuel Tanks and Fuel Storage Systems
09 ---Generator Laminations
10 ---Generator Sets
11 ---Generators/Alternators
12 ---Governors
13 ---Heat Recovery Systems
14 Instruments and controls, including meters, gauges, relays, contactors, or switches
15 ---Load Banks
16 ---Motor Generator Sets
17 ---Radiator/Heat Exchangers
18 ---Relays, Protective or Synchronizing
19 Silencers/Exhaust Systems/Noise Abatement
20 ---Solenoids
21 ---Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
22 ---Trailers, Generator Set
23 ---Transformers
24 ---Uninterruptible Power Supplies
25 ---Vibration Isolators
26 ---Voltage Regulators
27 ---Wiring Devices or Receptacles

Enter codes here: (Limit 10 codes per category)

Products sold:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Products rented:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Products serviced:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

6. 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 _____ Date _____

NEW EGSA MEMBERS

MF=Manufacturer DD=Distributor/Dealer CI=Contractor/Integrator MR=Manufacturers Rep
EM=Energy Management Co. AA=Trade Publication AB=Trade Association AC=Engineer
AD=End-User AE=Service AG=Educational Institution AM=Military AR=Retiree AF=Student

A Contact Electric Rentals, LP. . . . . AE
Houston, TX
Kelly Gregory, Business Development Director
A Contact specializes in the electrical rental of heavy power distribution equipment of all kinds.

Airsan Corporation . . . . . MF
Milwaukee, WI
Phil Cherrico, Director of Sales
Airsan Corporation designs and manufactures permanent air filters for industrial and HVAC use and also noise reduction filters and turning vanes.

AN&M International Corp. . . . . DD
Miramar, FL
Moises Miranda
Sales of industrial equipment, electric motors, water pumps, generators, parts and electronics pieces compounds, technical services after sales and support.

Cavalier Industries Ltd. . . . . DD
Sturgeon County, AB Canada
TJ Johnson, President
We provide equipment and tool solutions across Canada, offering a broad range of products designed to service a variety of markets and industries.

Critical Energy Services LLC . . . . . AE
Roseland, NJ
Erich Sisco, President
Critical Energy Services LLC is the leading service provider for the on-site startup, maintenance and repair of mission critical fuel supply systems. Offering services such as consultation and evaluation, maintenance, fuel testing and fuel polishing. CES works with engineers, contractors, generator suppliers and owners assuring uptime performance and regulatory compliance.

Energy Dynamics LLC CI
Woolwich, ME
Leon LeBlanc, Customer Relations Manager
We are a supplier of OEM engine parts and a rebuilder of various engine components.

Fidelity Manufacturing, LLC . . . . . MF
Ocala, FL
Brad Dinkins, Owner
Packager of power generation, pump, and compressor equipment. Manufacturer of UL listed fuel tanks, weather and sound attenuated aluminum tube frame or formed panel enclosures, and aluminum stair sets. DOT approved integral tank and open deck trailers to 45,000lb. Ready to meet your packaging needs. 3 year warranty standard.

Ricky Godbolt . . . . . AM
Belcamp, MD

Grandwatt Electric Corp.. . . . . MF
Suffolk, VA
Patrick Everett, Sales Manager
Grandwatt is a manufacturer of diesel and natural gas generators from 1 kW to 3 MW. We also manufacture mobile light towers.

Hoyt Electrical Inst Works Inc. CI
Penacook, NH
Joseph Legerstee, Sales Director
Hoyt is a distributor of instrumentation and metering for the generating industry. We also carry low and medium voltage transformers.

WL Jaggars . . . . . AE
Abilene, TX
Commissioning manager/technician

Murata Energy Solutions Americas . . . . . EM
Plano, TX
Tim Cutler, General Manager
Murata Energy Solutions Americas' PowerConnect EPSS provides an end-to-end wireless and cloud-based solution helping hospital, data center, and commercial building facility managers automate schedule, test and monitor Emergency Power Supply Systems including generators, ATSs, and other energy storage devices. The solution increases reliability, simplifies regulatory compliance and reduces operating expenses.

Chizoma Onyems. . . . . AC
Auburn, CA
Installation of power generators.

Pioneer Critical Power, Inc. . . . . MF
Minneapolis, MN
Vincent Visconti, General Manager - Strategic Sales Group
Paralleling switchgear - low and medium voltage, open protocol PLC controls, new and retrofit applications. Automatic transfer switches, generator remote monitoring system, GenMax - removes harmful 3rd harmonics when paralleling dissimilar pitch gen-sets.

Powercity Electromechanical & Equipment Co. Ltd. . . . . MF
JinJiang City, Fujian, China
Jintong Lai, Production Manager
Manufacturer of diesel generator sets from 10 kVa to 1500 kVa, auto transfer switches and switchgear load banks from 10 kW to 1200 kW. We are an ISO9001:2008. We sell our products worldwide with an exclusive distributor in the Philippines.

Pure Power Generators. . . . . DD
Northbrook, IL
Aran Szackamer
Sell and service standby generators.

Sure Power, Inc.. . . . . DD
Ridley Park, PA
Paul Merrick, CEO
Sure Power provides innovative battery back-up solutions for business. Including battery distribution, maintenance and installation. We distribute EnerSys, C&D and East Penn batteries. Our UPS rental division provides standalone and trailer mounted UPS rentals 50 kVA through 1.5 mVA.

Tenneco . . . . . MF
Grass Lake, MI
Michael Jurich, Director
Tenneco is one of the world's largest designers, manufacturers and marketers of clean air products and systems for automotive and commercial vehicle markets.

Twenterprises, Inc.. . . . . DD
Billings, MT
Mike Greene, Service Manager
Generac industrial dealer, Toshiba UPS sales and service.

Universal Technical Institute . . . . . AG
Scottsdale, AZ
Charles Barresi, Senior VP, Customer Solutions
Universal Technical Institute is the leader in post secondary technical education for auto/diesel/collision/motorcycle/marine.

Derik Williams . . . . . AM
Woodbridge, VA

Christopher Vanrell . . . . . AM
Egg Harbor Township, NJ

Matthew Van Staveen . . . . . .AF
Shippensburg, PA

Weichai America Corp. . . . . MF
Rolling Meadows, IL
Houman Kashanipour, President
Weichai America Corp. is the North American headquarters and R&D center for Weichai Power of Weifang, China. Weichai America is responsible for development and support of a complete family of alternative fuel engines that meet the needs of the North American market.

Wyoming Machinery Company . . . . . DD
Casper, WY
Lukas Munsell, Power Systems Engineering Manager
We are a Caterpillar dealer. We sell and package generators, engines (diesel & gas), switchgear, transfer switches, enclosures, emission control equipment, UPS' among many other things in our Power Systems Division. We sell CAT, ASCO, Miratech, Phoenix, Avtron, Murphy, etc.

Mark Zaucha. . . . . AM
Frindship, WI

COMAP

Another in Our Series of EGSA Member Company Profiles

ComAp's main office in Prague, Czech Republic

ComAp's North American headquarters near Roscoe, IL

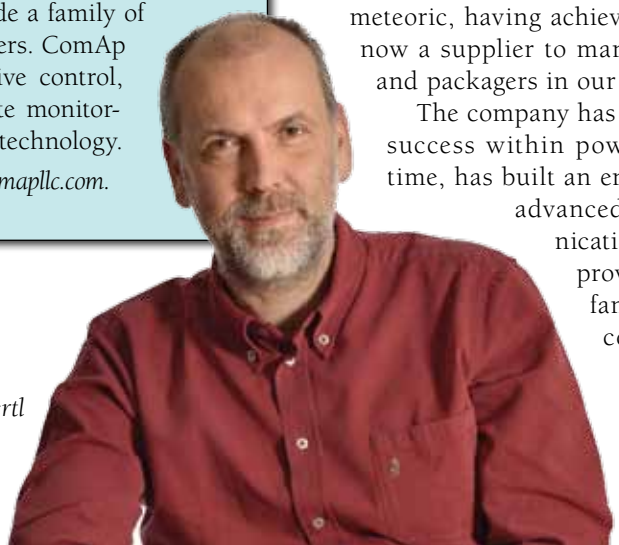
COMAP ***www.comapllc.com***

We deliver creative engineering solutions for the power generation and combustion engines applications electronics sector. Our control systems include a family of genset, generator and engine controllers. ComAp branded products offer comprehensive control, complete engine management, remote monitoring and total protection of controlled technology.

More information is available at *www.comapllc.com.*

ComAp is one of the world's leading suppliers of controllers for generating sets, and non-genset engine-driven equipment. Founded in 1991 (in Prague, in the Czech Republic), the company's growth has been nothing short of meteoric, having achieved a worldwide presence and is now a supplier to many of the world's leading OEMs and packagers in our industry.

The company has over 23 years of experience and success within power generation and during this time, has built an enviable reputation for delivering advanced technologies, remote communication capabilities, high-quality and proven reliability. ComAp's product families offer users comprehensive control for high-level advanced



ComAp CEO, Libor Mertl

systems, complete engine management, remote monitoring and total protection of controlled technology. The company operates in markets across the globe - through subsidiaries in most of the world's major markets and a successful distributor network in the rest of the world.

ComAp's operations in the United States (ComAp LLC), are headquartered near Rockford, IL. Libor Mertl, CEO, understands the importance of the American market, "Many years ago, we recognized that if we want to be a worldwide leader in this field, it would be essential to have a US operation in order to work closely with, and understand the needs of, the large American OEMs and packagers. We have invested heavily into our US operations and will continue to do so, in order to be able to efficiently and effectively supply our US customers."

Top: Bi-fuel application photo. (Czech-1)
Bottom: ComAp displays integrated into custom control panel.

All products are made to the highest standards within the EU and meet all the applicable US standards, including UL and ABS, as applicable. ComAp places great emphasis on product support and offers 24-hour technical support from its operations around the globe. In addition, professional product training is delivered from a new purpose-built training centre in Prague and in other centres worldwide. Recently training on the company's products was also provided in Spanish for customers in North, Central and South America at the training offered in Miami, FL.

ComAp differentiates itself within the industry by offering a wide range of products ranging from simple, economic controllers for small gensets to controllers for the most complex embedded systems. In addition, the company offers protection relays for mains-connected systems – both engine-driven and renewable, and is also a major supplier of bi-fuel systems, particularly in US and Latin American markets.

The range is rounded out with very high-level SCADA systems for both local and remote monitoring and the complete product line is designed for full remote control and monitoring by GPRS, internet or Ethernet connectivity.

ComAp understands that in any control system, the human-machine interface is a critical aspect of successful operation and invests heavily in designing a range of full colour screens, including touch screens, to meet the requirements of all levels of the industry.

The company has a large R & D operation to ensure that they stay ahead of the market's requirements, and to offer state-of-the-art products in both hardware and software. In the last couple of years, ComAp has added over fifty engineers to this department. "We understand that at its core, ComAp provides solutions for our customers, and by investing heavily in R&D, we can ensure that our products and services reflect the needs of our particular market segments," said Libor Mertl when addressing the company's employees and distributors recently.

The EGSA Connection

ComAp joined EGSA in 2005 and has been a member-in-good-standing now for more than 10 years. The firm has graciously sponsored opportunities like the recent transportation for our Gearhead Tour in Denver, CO, as well as sending representatives in numbers to EGSA signature events in the spring and the fall.

Since 2007, ComAp has exhibited in the EGSA On-Site Power Pavillion at POWER-GEN International, where they have received great value from our organziation. They also consistently advertise in *Powerline* Magazine and utilize our EGSA Job Bank. Additionally, ComAp has approved several of their employees to volunteer their time for leadership roles on both our EGSA Board, as well as at the Committee-level. ■

EGSA JOB BANK

USA Mid-Atlantic

Generator Tecnician

Engines Inc

Location: Eastern PA, NJ

We are seeking experienced generator and transfer switch field service technicians. To diagnose, troubleshoot, repair and service diesel and gas power systems and related accessories. Prefer applicant to be certified by Kohler or Cummins/Onan with a minimun of 3 yrs field service experience

To apply: *john@enginesinc.com*

USA Northeast

Field Sales Person

Bigelow Electrical/ BigPower

Location: Worcester, MA

Bigelow Electrical/ BigPower is offering enthusiastic individuals a position in Home Standby Generator Sales of New Systems and also sales opportunities of service maintenance agreements for existing systems. Home sales experience necessary, professional appearance, a clean CORI and driving record is required.

EGSA Certified Technicians Preferred.

To apply: Scott@bigelowelec.com

EGSA Job Bank Guidelines

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

Field Service Technician (Diesel & Gas)- Worcester ,MA

Bigelow Electrical/ BigPower

Location: Worcester, MA

Bigelow Electrical/ BigPower is seeking experienced generator service technicians in the Central MA area. BOTH Industrial & Home Standby technical positions for completing service maintenance, repairs, evaluations of Standby Power Generator Equipment. Clean driving record & CORI required, OSHA Certification a plus.

EGSA Certified Technicians Preferred.

To apply: Thane@bigelowelec.com

Aftermarket Sales, Fairfield, CT

Kinsley Power Systems

Location: Brewster, NY

Kinsley Power Systems is seeking an Aftermarket Sales Manager. The position is responsible for developing, growing and managing the Company's emergency power generator service sales business throughout a given geographic territory. He/she will serve as an ambassador to the Company's service department by selling service agreements, extended warranties and other service products to new customers while maintaining and expanding relationships with existing customers. The sales process includes, but is not limited to prospecting, cold calling, probing, qualifying, presentation & proposal generation and closing Accounts. The position is a hybrid of outside sales, technical sales, account management and customer service.

To apply: lbarnes@kinsley-group.com

Field Service Technicians (Diesel & Gas)

Kinsley Power Systems

Locations: CT, NY, MA, NH, VT, ME, NJ, PA, RI

Kinsley Power Systems is seeking experienced generator technicians throughout the Northeast. This position is responsible for completing preventive maintenance, repairs and service on standby power generation equipment. Due to the nature of the service business Field Service Technicians must reside within 25 miles of the available territory and have a clean driving record.

To apply: Lbarnes@kinsley-group.com

EGSA JOB BANK

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)

Aftermarket Sales, Boston, MA

Kinsley Power Systems

Location: East Granby

Kinsley Power Systems is seeking an Aftermarket Sales Manager. The position is responsible for developing, growing and managing the Company's emergency power generator service sales business throughout a given geographic territory. He/she will serve as an ambassador to the Company's service department by selling service agreements, extended warranties and other service products to new customers while maintaining and expanding relationships with existing customers. The sales process includes, but is not limited to prospecting, cold calling, probing, qualifying, presentation & proposal generation and closing Accounts. The position is a hybrid of outside sales, technical sales, account management and customer service.

To apply: Lbarnes@kinsley-group.com

Director of Industrial Sales

Kinsley Power Systems

Location: East Granby

The Director of Industrial Sales is a key contributor to the continued growth of Kinsley Power Systems. This position requires the successful candidate to create & implement a sales plan to exceed budgeted revenue goals, and manage some select key/strategic accounts directly, and actively manage a staff of outside sales engineers to maximize revenue/earnings while embracing the Company's core values and driving sales force effectiveness along with utilizing a solid analytics competency and CRM expertise.

To apply: Lbarnes@kinsley-group.com

Inside Sales Representative

Lex Products

Location: Shelton, CT

LEX Products - Inside Sales Representative ISRs supply innovative power distribution and control systems to industrial and entertainment markets. Candidates need the drive and communication skills to build upon Lex's history of excellence. The position is based in Shelton, CT. Please visit our web site at www.lexproducts.com. EOE/AA.

To apply: Forward resumes to - https://home.eease.adp.com/recruit/?id=14889111

Field Service Technician

South Shore Generator Sales & Service Inc.

Location: Massachusetts/Rhode Island

Growing company seeks full time FIELD SERVICE TECHNICIAN for immediate openings. Candidates must have clean driving record, part of on-call rotation, computer literate, Diesel & gas engine & A/C electrical experience, ATS knowledge. Candidates must have analytical mind, customer service & social skills; be clean, & organized. Offering competitive wages w/ all major benefits.

EGSA Certified Technicians Preferred.

To apply: Send resumes to service@ssgen.com

Sales Representative

South Shore Generator Sales & Service Inc.

Location: Massachusetts/Rhode Island

Growing company seeks full time SALESPERSON for immediate opening. Candidates must have clean driving record, computer skills & able to meet quotas & goals. Basic electricity background a plus. Training provided, some sales experience required. Must have good customer service & social skills, self-motivated, & organized. Company offers competitive wages w/ all major benefits.

To apply: Send resume to sales@ssgen.com

USA Southeast

Generator Systems Specialist

Nixon Power Services

Location: Charlotte, NC and Atlanta, GA

Responsible for sales, unit start-up, and customer relations including design engineering. Identify/acquire customers; Negotiate/close sales; Assist in project design; Follow up with customer to ensure satisfaction; Build relationships/educate customers Bachelor's degree; five to ten years related experience or equivalent combination. Previous generator sales.

To apply: resumes@nixonpower.com

Generator Technician

Nixon Power Services

Locations: NC, SC, GA, TN, MD, KY

Able to perform repairs and preventative maintenance on generators. Diagnose equipment failures. Clearly, concisely document all work and repairs completed. High school diploma or GED certificate; and training from accredited technical school specializing in diesel or gas engines, or honorable military discharge with a duty assignment related to vehicle or power generation equipment service.

To apply: resumes@nixonpower.com

Support the EGSA TOYA in 2016!

Take a Look at Our EGSA Technician of the Year Award Program and Nominate a Worthy Candidate!

Get ready to shamelessly promote your EGSA-certified colleague by nominating him (or her) for the 2016 EGSA TOYA!

Every one, at every level, wants to be recognized for doing a great job! The TOYA is **THE** capstone to any technician's career, inciting further personal and professional growth. Can you imagine the competitive advantage of having a TOYA winner on YOUR team?

The 2016 process is scheduled to kickoff as follows:

Application Announcement:
May 16, 2016

Application Period Ends:
July 15, 2016

Review of Applications Takes Place:
July 16 – July 29, 2016

Final Winner will be Notified:
August 1, 2016

The Rest of the World Finds Out:
During the exciting announcement at the Awards Banquet in Sacramento, CA on Monday, September 12, 2016.

Electrical Generating Systems Association (EGSA) • 1650 South Dixie Highway, Suite 400, Boca Raton, FL 33432
(561) 750-5575 • EGSA.org • email@EGSA.org

EGSA JOB BANK

USA Southeast

Generator Technician

Phoenix Products

Location: Jacksonville, FL

Conduct factory pre-start, start-up, commissioning and testing of diesel and gas generators. Compiles and completes all test documentation. Maintains test equipment including load banks and cables. Makes recommendations for upgrades, repairs and replacements. Consults with Sales and Engineering regarding enclosure package design, fuel systems and engine operating parameters.

To apply: http://ringpower.applicantstack.com/x/detail/a21rwrmcat5u?sort=2&sortdir=a

Application Deadline: 2015-12-31

Generator Field Technician

W.W. Williams

Location: Atlanta, GA; Savannah, GA; Greenville, SC; Mongomery, AL; Birmingham AL

W.W. Williams has openings for Field Service Technicians in our Alabama, Georgia, Tennessee and South Carolina facilities. Candidate will have a minimum of three years previous experience servicing 8.5 kW – 3500 kW generators, knowledge of electrical systems and circuitry and some knowledge of diesel engines. See full description/apply direct at: wwwilliams.applicantpool.com/jobs.

EGSA Certified Technicians Preferred.

To apply:

Email resume to churley@wwwilliams.com

Application Deadline: 2015-11-15

USA Southwest

Power Generation Technician / Rental

Arizona Generator Technology, Inc
dba: GEN-TECH

Location: Glendale, AZ; Tucson, AZ; Las Vegas, NV

Arizona Generator Technology, Inc. dba: Gen-Tech is a rapidly growing Sales, Service, and Rental Company. We are a company seeking highly motivated Generator Technician and Rental Technician. Our service area includes AZ-North, AZ South, NV South. We have total of four branches to support our customers. Looking for applicants with 2+ years experience.

EGSA Certified Technicians Preferred.

To apply: jgibson@gentechus.com / 800-625-8324

Application Deadline: 2016-10-01

Field Generator Technician

W. W. Williams

Location: Las Vegas, NV; Phoenix, AZ; Tucson, AZ

W.W. Williams has openings for Field Service Technicians in our Las Vegas, Phoenix and Tucson facilities. Candidate will have a minimum of three years previous experience servicing 8.5kW - 3500kW generators, knowledge of electrical systems and circuitry and some knowledge of diesel engines. See full description/apply direct at: wwwilliams.applicantpool.com/jobs.

EGSA Certified Technicians Preferred.

To apply:

Email resume to churley@wwwilliams.com

Application Deadline: 2015-12-31

USA Midwest

Diesel & Generator Mechanic

Central Power Systems and Services, Inc.

Locations: Woodward, OK; Salina, KS; Wichita, KS; Great Bend, KS; Colby, KS; Springfield, MO

We have been serving the needs of the lower Midwest region with top quality Power Generation products and services since 1954. You will: Diagnose Electrical Systems; Repair Diesel Engine/Transmission components; Receive EGSA Certifications. EOEVD

EGSA Certified Technicians Preferred.

To apply: www.cpower.com/careers

INDUSTRY NEWS

6,500 Pounds Of Food Donated For Doosan Day Of Community Service

Doosan Portable Power employees have recently participated in the "Doosan Day of Community Service" — a company-wide volunteer effort that celebrates ongoing partnerships with communities in North America where Doosan Infracore companies do business. Doosan Portable Power is proud to have participated in the event to help make a positive impact in the Statesville, North Carolina, community.

Over a two-week period, Doosan Portable Power employees donated 6,500 pounds of nonperishable food for the Iredell Christian Ministries Food Pantry located in Statesville. The pantry provides 25,000 pounds of food each month to people in the community, and Iredell Christian Ministries serves 800 families a month.

"We wanted to make a real difference in our community," said Mike Ballweber, President of Doosan Portable Power. "Hunger is an issue that no child, adult or family should have to face. We are grateful and humbled for the opportunity to help those in need."

Doosan Portable Power is committed to creating an environment that encourages employees to participate in community involvement. The Doosan Day of Community Service places an emphasis on the "Doosan Way" — an organizational principle that links all Doosan Infracore employees' values to a management system focused on community and social responsibility that can be incorporated into their daily lives. At the heart of the Doosan Way is the idea that being a good corporate citizen is an ongoing responsibility.

For more information please visit *doosanportablepower.com* ■

Nixon Power Services Expands Executive Team with New VP of Sales

Nixon Power Services announced it has appointed Justin Slaughter as the company's Vice President of Sales.

At Nixon, a generator power systems distributor of diesel and gas powered generation equipment, Slaughter will apply his extensive experience to lead the company's standby power product sales business segment.

"I'm delighted to welcome Justin to our Nixon team," said Nixon's President and CEO, Ron Stanley. "Adding Justin to our executive team will provide Nixon with an additional leader to set and execute company-wide strategies as well as provide increased focus on our industrial and consumer standby power generation products business. Building off our track record of success and the existing strong team, Justin's experience and guidance will allow us to accelerate Nixon's growth in bringing power generation solutions to the marketplace."

Slaughter is a power generation industry veteran with more than 16 years of sales and management experience. Prior to joining Nixon, he served as Director of Commercial Power Generation Sales at Cummins Southern Plains, where he helped lead significant growth during his tenure. Justin earned his BS in Industrial Distribution from Texas A&M, and MS in Entrepreneurship from SMU.

For more information please visit *nixonpower.com* ■

EGSA Industry News Guidelines

We welcome you to submit press releases for consideration for inclusion in the Industry News section of *Powerline* Magazine. However, due to the fact that *Powerline* is the voice of an organization consisting of more than 800 Member companies, we maintain a strict editorial policy that prohibits any endorsement of a particular company or product. As a result, **we do not accept product-specific or service-specific releases for publication.**

Please email your press releases to *PR@EGSA.org.*

The union of ASCO, Avtron and Froment.

The global leader in load banks.

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The proven, market-leading load bank technologies of Avtron and Froment are a perfect fit with ASCO Power Technologies. Combining world-class innovation and more than 200 years total experience, ASCO is your one-stop partner that offers complete solutions that you can rely on to solve any power testing requirement.

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Broadest Portfolio

No company in the world can match the depth and breadth of our portfolio. From simple 10 kW portable load banks to multiple MVA, we can provide a solution for virtually any application. We revolve around your needs, with the expertise and technical knowhow to assemble custom solutions that provide leading power test solutions.

Technology

Innovation is at our core, complemented by our commitment to build load banks to the highest standards – ISO9001, UL/CUL, CSA, CE, IEC, NFPA. Technical leadership includes Sigma control which is sector leading in simplicity, ease of use, and accuracy.

Experience

Ninety years combined experience in load banks is only matched by the 125 years ASCO has been providing power solutions. Our team of experts has provided countless standard and custom load banks to the industry over the years.

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