

TWENTERPRISES, INC.

GENERATING SOLUTIONS FOR YOUR POWER NEEDS

TW Enterprise, the approved distributor for residential, commercial and Industrial generators for Generac Generator Systems will be hosting a series of training events this coming **Thursday May 12th**. As a preferred partner you are invited to attend – The training will cover commercial, Industrial and have a focus on residential generator technology as well. Please see the following logistics below.

- **Does the event cost anything?** No it does not, TWE is your partner when it comes to Generator planning, Sales and Service – We want to see our relationship and your business grow together through knowledge and support.
- **What time should I be there for the 1st session** – Please arrive at 7:30am to sign in, get some coffee and to find a seat
- **Where** – Event Will be hosted at one central location – Best Western Ramkota Hotel (Washington Room)– 2111 N. Lacrosse St., Rapid City SD
- **When** – Thursday May 12th - There will be (4) 2 hour training sessions throughout the day (7:30am to 6:00pm) with breaks between sessions.
- **What's in it for me** – Expansion of knowledge & Continuing Education Credits
- **Personal Needs** - Snacks will be provided throughout the day as well as lunch
- **Time Requirements** – This will be an ala carte event, each session will be 2hrs in length with time for discussion - you choose which sessions to attend – come and go.
- **Can I invite guests/others from work** – Yes you can but they will need to make sure they RSVP – Genem@twegen.com for the event

***** One major requirement to participate - you will need to RSVP to me no later than Tuesday 10th to be able to attend – ***RSVP – GeneM@twegen.com***** we need to know in advance to accommodate capacity, refreshments & lunch. If someone is wanting to attend but doesn't RSVP they may not be able to participate. Please see additional contact information below.

Training Session Topics – see below (Lunch is from 12:30 to 1:00)

Training Session/ Topics can change in scope and length to accommodate for time constraints to allow for subject matter and questions and answers – We may not be able to cover the exact training information in depth below but we will try our best to get everything covered – as always a great deal of knowledge can be obtained through questions & answers.

1st Session begins at 8:00am

GPS – 310

Generator Switching (Part 1)

(Course Length 45 min, CEUs: 0.1, PDHs, 1.0)

Genset Loads that are backed-up with generator power must be switched to and from the normal utility source. The switching device is typically an automatic transfer switch (ATS) that can be implemented with various technologies and design configurations. This module provides a detailed overview various ATS features and configurations: open transition, service entrance rated, bypass isolation, closed transition, and grid paralleling. The goal is informed decisions during equipment selection and specification.

GPS – 315

Generator Switching (Part 2)

(Course Length 45 min, CEUs: 0.1, PDHs, 1.0)

Automatic transfer switch (ATS) equipment can be specified in many various hardware configurations, operational modes, and performance criteria. This module will explore the application relevance of breaker vs. contactor, 2 vs. 3 position contactor mechanisms, 3 vs. 4 pole configurations, and 4-pole vs. overlapping neutral devices. Application fit of in-phase vs. delay-in-neutral operation with the impact of switching speed will be examined. ATS short circuit performance and other National Electric Code requirements are discussed in detail.

3rd Session begins at 1:00

GPS – 375

Alternators

(Course Length 45 min, CEUs: 0.1, PDHs, 1.0)

Discusses the operation and ratings associated with the genset alternator. Topics will include how the alternator actually operates, alternator construction, temperature rise, motor starting performance, alternator's sub-transient reactance impacts on non-linear load harmonic performance, key alternator spec sheet data, protection and leading power factor limitations.

GPS – 380

Controls (Single Generator)

(Course Length: 45 min, CEUs: 0.1, PDHs, 1.0)

Genset controls define the capability of the engine & alternator to meet the application specific needs and provide a simple customer interfacing experience. The engine must have controls that manage engine speed, fuel inlet, and emissions. The alternator must have voltage control. The entire system must be designed for maximum reliability while providing monitoring, data logging, remote communication, protection, and predictive maintenance.

2nd Session begins at 10:15

GPS – 300

Generator Sizing (Part 1)

(Course Length: 45 min, CEUs: 0.1, PDHs, 1.0)

Discusses various elements of generator sizing associated with powering an entire building while also exploring the impact motor starting has on generator size. Participants will learn how to use measurement and billing history data, size based on NEC® requirements, impacts of load sequencing, and the difference between instantaneous voltage dip and 90% sustained.

GPS – 305

Generator Sizing (Part 2)

(Course Length: 45 min, CEUs: 0.1, PDHs, 1.0)

Explores isolating loads onto a generator where the unique characteristics of the load become very important. Loads of particular interest are non-linear harmonic producing loads, uninterruptable power supplies (UPS), variable frequency drive (VFD), soft starters, and older technology electromechanical starters (wye/delta). For each of these loads, participants will learn the resulting load transient and harmonic issues and their impact on generator sizing.

4th Session begins at 3:15

GPS – 360

Generator Provisioning

(Course Length 45 min, CEUs: 0.1, PDHs, 1.0)

Examines engine-generator configurations and the selection of optional items like upsized alternators, enclosures, sub-base fuel tanks, various heating options, control options, etc. Options will be discussed based on code compliance and application requirements. Industry standard configurations will be compared with the needs for custom designed equipment and third party solution.

GPS – 365

Generator Installation

(Course Length 45 min, CEUs: 0.1, PDHs, 1.0)

Introduces good design practice guidelines for the installation of engine-generator sets based upon code requirements, site needs and application requirements. Installation will focus on both outdoor and indoor generator placement. Particular attention will be made to cooling system design options, exhaust piping, fuel transfer considerations, and sound attenuation options.