

CUSTOM ENGINEERING SOLUTIONS PANAMA PRESENTS:

# PLS-TOWER Training and Structure Design

English Training with Spanish Assistance

September 22–23, 2017

Friday to Saturday  
8:00 AM – 5:00 PM

Training Facilities:  
TRYP Hotel by Wyndham  
Albrook Mall  
Panama City, Panama

***EARLY BIRD BEFORE  
JULY 15th. AND BE ENTITLED  
TO A DISCOUNT***

*Learn about software aided, modeling,  
assessment, structural design, criteria  
specifications, testing and manufacturing.*

Custom Engineering Solutions Panama  
Century Tower  
Floor 20th, Suite 2013  
Panama City

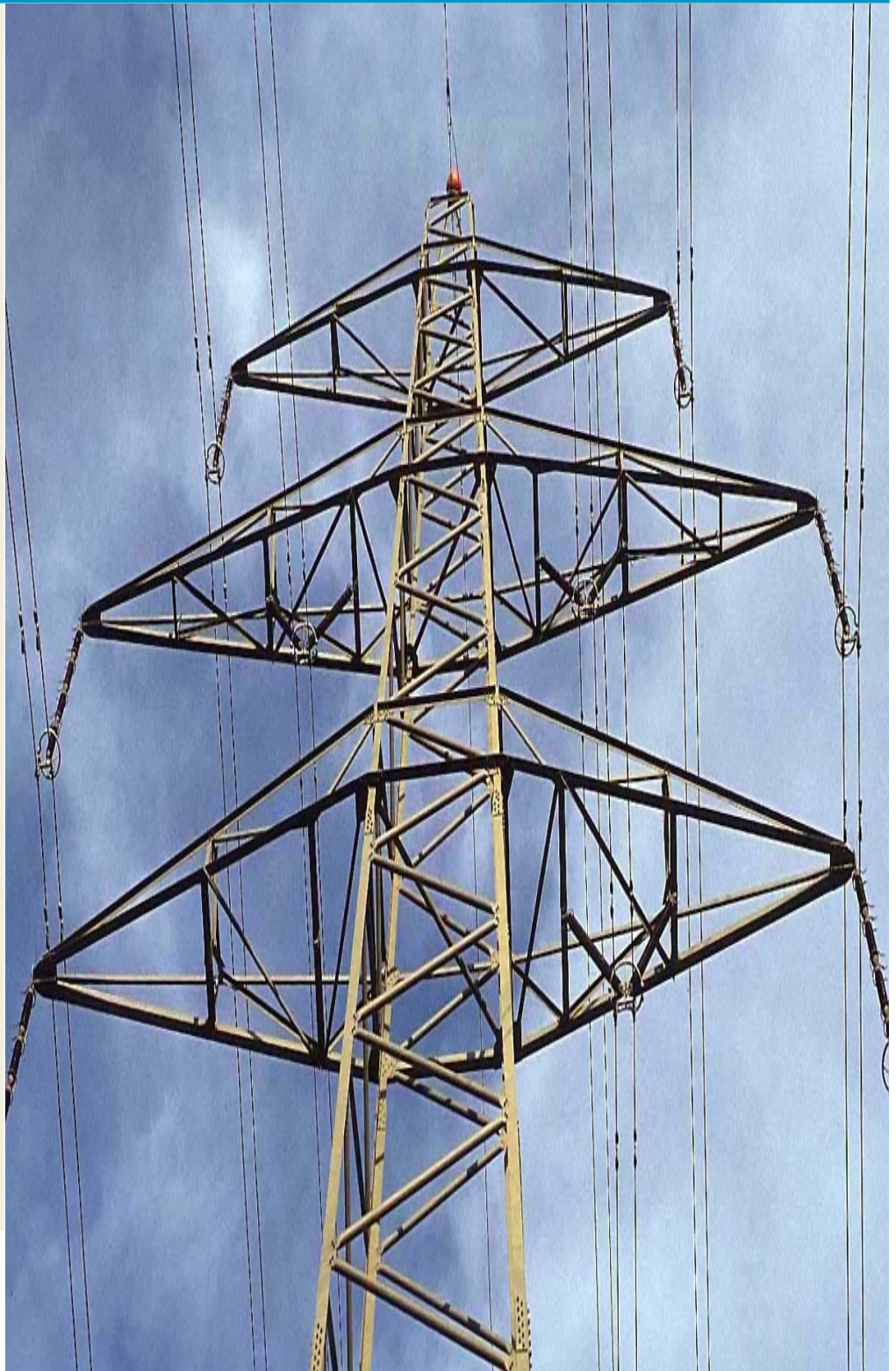
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Information: [cspanama@cengs.com](mailto:cspanama@cengs.com)



Custom Engineering  
**SOLUTIONS**



## **OVERVIEW: Learn the Industry Standard In Tower Design Software**

The increase in demand for electric power has prompted upgrading and building new electrical transmission lines across the World. TOWER is the most widely used lattice tower analysis and design program in the world today! Its ability to link directly with PLS-CADD, the industry standard in overhead line design and drafting software, makes it the tool of choice for overhead line designers. The demand for experienced line designers and structural engineers is ever increasing. This combined with the aging and retiring of the experienced transmission structural engineers has made it vital for young and incoming structural engineers to become more familiar with the fundamental aspects of design, manufacturing, and testing of different types of installations.

This course will teach the attendees how to use TOWER to model lattice steel towers, whether for construction of new lattice tower lines or upgrading, re-conductoring, or adding ancillary attachments to existing transmission towers.

### **INSTRUCTORS:**

Mr. Timothy C Cashman, P.E. has over 20 years of experience in the design of overhead transmission lines and lattice transmission towers. Prior to his own consultancy practice in 2010, he spent about 21 years working for a large, international design firm. During his career, he has been involved with the design and analysis of lattice towers from 69 kV to 500 kV.

Along with Mr. Cashman, Mr. Frank Noori, cofounder of Custom Engineering Solutions and Transmission Line Design Instructor with more than 15 years experience in Transmission Line Designs, as well as Mr. Archibaldo Clealand, managing director of Custom Engineering Solutions in Panama with over 15 years of design experience will be on hand for any necessary assistance and translations.

### **BRING YOUR OWN LAPTOP**

We ask that students bring their own laptop computers for this course. If you prefer to rent a computer, laptops can be provided with advance reservations for \$75 per day by contacting our client services by email: [cspanama@cengs.com](mailto:cspanama@cengs.com) or call US offices (770) 619-3999 or Panama offices (507) 398-1620. Your laptop must have Microsoft Windows 10, 8, 7 or XP installed (x64 preferred). It must also have a 1GHz or faster processor, a minimum of 3GB of RAM, 500MB of available disk space, and an available USB port for hardware key connection. An external 2 button mouse will be necessary for easier use of provided training software. **YOU MUST HAVE ADMINISTRATIVE RIGHTS ON YOUR COMPUTER SO THAT THE HARDWARE KEY DRIVERS CAN BE INSTALLED.** You will be provided with all software and material during training.

### **TOPICS FOR PLS-TOWER:**

#### **◆ Day 1**

Tower modeling concepts  
Component libraries  
Defining joints, members, and connections  
Tower point loads  
Tower wind loads

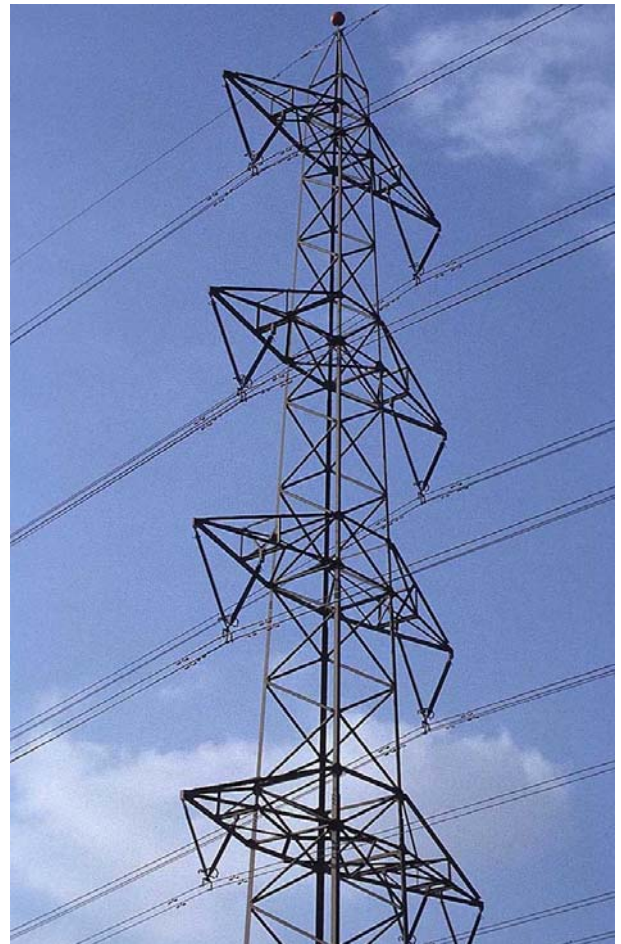
#### **◆ Day 2**

Review of analysis results and output  
Batch manipulation of multiple models  
Analysis of existing towers  
Determining allowable spans  
Using Tower models in PLS-CADD

### **LEARNING OUTCOMES**

Attendees to this course will learn to:

- ◆ Define the different types of structures and when to use them.
- ◆ Analyze economic efficiencies through the design process.
- ◆ Examine the applicable design standards and manuals.
- ◆ Identify the necessary loading criteria for which to design.
- ◆ Structural design fundamentals for latticed self-supporting towers.
- ◆ Design of tubular steel structures, guyed structures.
- ◆ Examine the appropriate design software applications.
- ◆ Analyze the different methods of testing and when to apply them.
- ◆ Identify the manufacturing and finishing process for structures.
- ◆ Examine the possibilities of aesthetics and innovation in design.





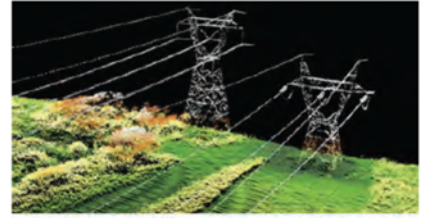
# REGISTRATION FORM



Custom Engineering  
**SOLUTIONS**

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**POWER LINE**  
SYSTEMS INC.

## DETAILS:

The course will be held at the TRYP Hotel by Wyndham in Albrook Mall, Panama. The registration form is at the end of this booklet and quotas are limited and reserved.

During the course a PLS-TOWER license will be provided for each attendee. The classes and course documentation will be in English with assistance in Spanish. Classes will be held from Friday, September 22 to Saturday, September 23 from 8:00 AM to 5:00 PM.

## TUTION FEES INCLUDING COFFE BREAK & LUNCH:

Please Register the Following:

- PLS-Tower Training & Structure Design (English). Factors in Structural Design, Testing and Manufacturing  
September 22-23, 2017: US \$1,300.00  
Early bird on or before July 15, 2017: US \$1,100.00
- PLS-CADD Training (Spanish). A specialized course focusing on computer aided design  
September 18-21, 2017: US \$2,000.00  
Early bird on or before July 15, 2017: US \$1,800.00
- PLS-CADD Training (Spanish) + PLS-Tower Training & Structure Design (English).  
September 18-23, 2017: US \$3,000.00  
Early bird on or before July 15, 2017: **BUY 1 GET 1 FREE!!!**

## CANCELLATION POLICY:

Participants who have paid but did not attend the course or cancel their participation after August 15, 2017 will lose the entire payment.

Custom Engineering Solutions reserves the right to cancel or modify this course at any time. In case of cancellation by CES, the 100% of the payment made by the participant will be refunded.

## PAYMENT METHOD

For USA & Canada Based Clients:

Please charge my credit card:  Visa  MC

Security Code \_\_\_\_\_

Visa and MC cards have a 3-digit code on the signature panel on the back of the card

Name on Card \_\_\_\_\_ Signature \_\_\_\_\_

Account Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Card Holder Phone Number \_\_\_\_\_

Billing Address \_\_\_\_\_ Billing ZIP Code \_\_\_\_\_

OR Enclosed is a check for \$ \_\_\_\_\_ to cover \_\_\_\_\_ registrations.

For Latin America Clients:

Payments are accepted via Bank Transfer. Please Email [cspanama@CEngS.com](mailto:cspanama@CEngS.com) for details or contact our offices in US or Panama.