

Agenda

Overview of Major Changes in 2017 National Electrical Code

Article 425: Fixed Industrial Process Heating
Article 691: Large-Scale PV Electric Power Production
Article 706: Energy Storage Systems
Article 710: Stand-Alone Systems
Article 712: Direct-Current Microgrids

Chapter 1: National Electrical Code

Requirements for electrical installations, including clearances and free space requirements about equipment

New reconditioned equipment, identification and traceability

New limited access working space requirement

New short-circuit current documentation

Chapter 2: Wiring and Protection

Grounded conductors Voltage drop calculations

Branch circuit, feeder and services calculations

GFCI receptacle outlet requirements

Service requirements Transformer protection

New GFCI protection for non-dwelling units

Grounding and Bonding

Grounding of service entrances

Grounding of separately-derived systems

Grounding electrodes

Sizing of grounding electrode and grounding conductor

Bonding of services

Chapter 3: Wiring Methods and Materials

Wiring methods—underground installation requirements

Conductors for general wiring

Conductor ampacity correction and adjustments

Number of conductors in a raceway

Pull and junction box fill calculation

New single-phase dwelling services and feeders

Chapter 4: Equipment for General Use

Flexible cords and cables

Receptacle requirements

Switchboards and panel boards

Short circuit rating

Luminaires, appliances, transformers and motors

Chapter 5: Special Occupancies

Hazardous locations

Commercial garages

Health care facility requirements

Recreational vehicle parks

Chapter 6: Special Equipment

Signs, outline lighting, elevators

Hybrid vehicle plug in requirements

Data center requirements

Pools and spas

Solar photovoltaic systems

Small wind turbine systems

Chapter 7: Special Conditions

Emergency systems

Class 1, 2, and 3 power-limited circuits

Fire alarm circuits

Chapter 8: Communications Circuits

Premises-powered broadband communication systems

Network-powered broadband communication systems

Chapter 9: Tables

Conductor fill and raceway calculation example

National Electrical Code 2017
Brookfield, WI - Wednesday, August 21, 2019

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Learning Objectives

You'll be able to:

Learn about the changes in the 2017 Electrical Code that apply to large scale PV electric production and direct-current microgrids.

Understand new regulations regarding reconditioned equipment, GFCI protection for non-dwelling units, and single-phase dwelling services and feeders.

Comply with rules on grounding and bonding.

Discuss wiring methods and materials.

Understand premises and network-powered broadband communication systems.

Learn about hybrid vehicle plug in requirements and data center requirements, as well as small wind turbine system requirements.



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National Electrical Code 2017

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Identify the major changes to the 2017 NEC

Examine requirements for wiring and protection

Learn about grounding and bonding

Explore special equipment and special occupancies

Discuss communications circuits, emergency systems and fire alarm circuits

Continuing Education Credits

Professional Engineers

7.0 PDHs

Architects

7.0 HSW Contact Hours

7.0 AIA LU|HSW

Commercial Electrical Inspector Qualifier, Industrial Journeyman Electrician, Master Electrician, Registered Electrician, Residential Journeyman Electrician, Residential Master Electrician, UDC-Electrical Inspector

7.0 Credit Hours

International Code Council

.7 CEUs (Electrical)



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Faculty



Mark D. Cook *Regional Training Supervisor, Faith Technologies*

Mr. Cook is a master electrician in Wisconsin and Arizona. He has been in the electrical industry since 1978 and he owned and operated his own electrical commercial, residential and light industrial service company in Arizona from 1994 until the summer of 2015. Mr. Cook was an instructor for the Independent Electrical Contractors of Arizona (I.E.C.), a four-year apprenticeship program facilitated at Gateway Community College in Phoenix. He hired and mentored an apprentice to win “Apprentice of the Year” at the national competition “Wireoff” held at Fort Worth, Texas, in 2012. Mr. Cook was also an instructor for the Electric League of Arizona educational program, teaching classes on grounding, bonding and the National Electrical Code. He has presented the NEC for HalfMoon Education and the Arizona Department of Transportation as well. Mr. Cook is an associate member of the International Association of Electrical Inspectors and was presented with the “Instructor of the Year” award from I.E.C. in the spring of 2015. He authors “Code Corner” a monthly article appearing in *The Electric Times*, an electric and lighting industry newsletter circulated throughout the southwest at local vendors and suppliers and to online subscribers. Mr. Cook is a National Fire Protection Association member, International Association of Electrical Inspectors member and a certified and a commercial electrical inspector for the State of Wisconsin. He is a CEU provider for Iowa, Wisconsin and Minnesota.

Seminar Information

Sheraton Milwaukee Brookfield Hotel
375 South Moorland Road
Brookfield, WI 53005
(262) 364-1100

Tuition

\$289 for individual registration
\$269 for three or more registrations.

Each registration includes a complimentary continental breakfast and printed seminar manual. Registration does not include a copy of the Code itself.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 7.0 PDHs to professional engineers and 7.0 HSW contact hours to architects in most states, including Wisconsin. Educators and courses are not subject to preapproval in Wisconsin.

The American Institute of Architects has approved this seminar for 7.0 LU|HSW (Sponsor No. J885). Only full attendance can be reported to the AIA/CES. Visit www.halfmoonseminars.org for complete AIA information under this course listing.

The Wisconsin Department of Safety and Professional Services has approved 7.0 credit hours for Commercial Electrical Inspector Qualifier, Industrial Journeyman Electrician, Master Electrician, Registered Electrician, Residential Journeyman Electrician, Residential Master Electrician, UDC-Electrical Inspector.

The International Code Council has approved this event for .7 CEUs in the specialty area of Electrical.

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire program. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Additional Learning

Webinar Series

National Electrical Code: Onsite Power Generation and Distribution

- **National Electrical Code: Onsite Power Generation and Distribution, Part I**
Wed., July 10, 2019, 11:00 AM - 2:15 PM CDT
- **National Electrical Code: Onsite Power Generation and Distribution, Part II**
Thur., July 11, 2019, 11:00 AM - 2:15 PM CDT

OSHA Construction Safety

- **Overview of Construction Safety Hazards, Statistics and OSHA Requirements**
Thurs., July 11, 2019, 11:00 AM - 12:30 PM CDT
- **Construction Site Fall Prevention, Ladders, Stairways and Excavation**
Thurs., July 11, 2019, 1:00 - 3:00 PM CDT
- **Construction Site Scaffolds, Cranes and Loading Capacities**
Fri., July 12, 2019, 11:00 AM - 12:30 PM CDT
- **Chemical Hazards, Electrical Safety and Personal Protective Equipment**
Fri., July 12, 2019, 1:00 - 3:00 PM CDT

Basics of Fluid Mechanics

- **Fluid Mechanics Overview and Theory**
Tues., July 16, 2019, 11:00 AM - 1:00 PM CDT
- **Fluid Statics and Fluid Dynamics**
Tues., July 16, 2019, 1:30 - 3:30 PM CDT
- **Fluid Dynamics Theory and Applications, Part I**
Wed., July 17, 2019, 11:00 AM - 1:00 PM CDT
- **Fluid Dynamics Theory and Applications, Part II**
Wed., July 17, 1:30 - 3:30 PM CDT

NFPA 70E

- **NFPA 70E, Part I**
Wed., July 24, 2019, 11:00 AM - 3:30 PM CDT
- **NFPA 70E, Part II**
Thur., July 25, 2019, 11:00 AM - 3:30 PM CDT

For more information visit:
www.halfmoonseminars.org/webinars/

Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$269. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

National Electrical Code 2017

Brookfield, WI - Wednesday, August 21, 2019

How to Register		Registrant Information
Online: www.halfmoonseminars.org		Name: _____
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Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Name: _____
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		Email: _____
		Phone: _____
Complete the entire form. Attach duplicates if necessary.		Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
		() I need special accommodations. Please contact me.

Tuition

- () **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.
- () **I am not attending.** Please send me the self-study package:
- ☐ Downloadable MP3 Audio/PDF Manual for **\$269.00**.
 - ☐ CD/Manual Package for **\$289.00**.
- (Please allow four weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

Credit Card: *Mastercard, Visa, American Express, or Discover*

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