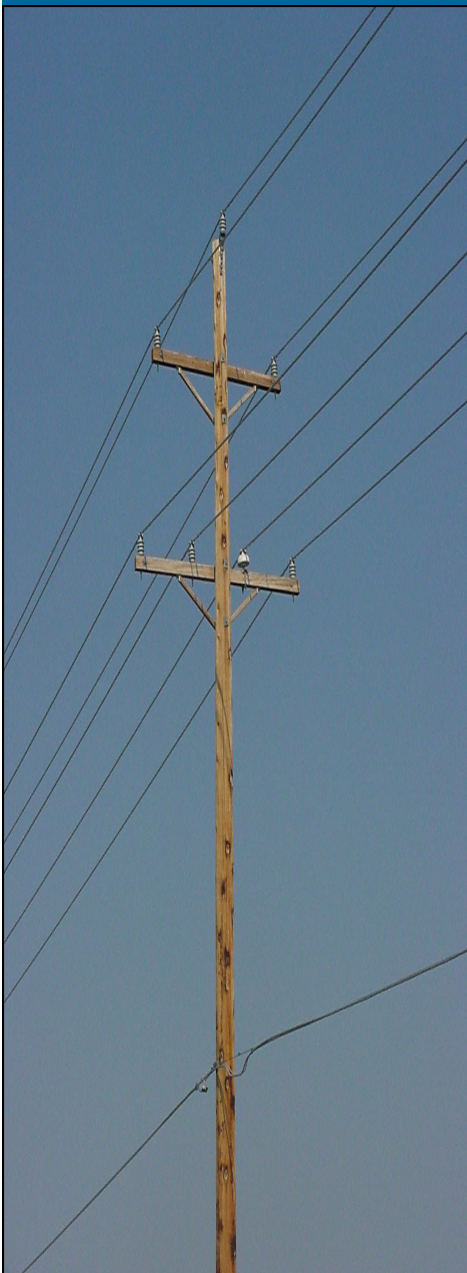




Marne and Associates, Inc.
Experts in Electrical Code

Applying the 2017 National Electrical Safety Code (NESC) to Day-to-Day Utility Work (2-Day)

(Presented In-House at your Utility/Association)



- ◆ Provides a general overview of each part of the NESC. (Day 2 focuses on looking up rules in the NESC Codebook, so a copy of the Codebook is required.)
- ◆ Designed for:
 - Engineers
 - Staking Technicians
 - Power Lineworkers
 - Communication Lineworkers
 - Safety Personnel
 - Inspectors
- ◆ Rich in graphics and practical applications.
- ◆ Conforms to the 2017 National Electrical Safety Code (NESC).

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About the Seminar

Applying the National Electrical Safety Code (NESC) is a 2-day class focusing on the rules in the National Electrical Safety Code (NESC). This class provides a general overview of each part of the NESC and applying the Code to day-to-day work will be stressed by focusing on practical NESC examples and applications. During this 2-day class you will learn:

- ◆ Scope and Purpose of the Code
- ◆ Clearances of Overhead Lines
- ◆ Loading and Strength of Overhead Lines
- ◆ Underground Line Rules
- ◆ Grounding Requirements
- ◆ Supply Station Rules
- ◆ Work Rules

Who Should Attend

- ◆ Engineers
- ◆ Staking Technicians
- ◆ Power Lineworkers
- ◆ Communication Lineworkers
- ◆ Safety Personnel
- ◆ Inspectors

Prior working knowledge of the NESC is not required.

Trademarks

National Electrical Safety Code® and NESC® are registered trademarks of the Institute of Electrical and Electronics Engineers (IEEE). OSHA (Occupational Safety & Health Administration) is a branch of the U.S. Department of Labor.

Continuing Education Units

This course provides 1.2 Continuing Education Units (CEUs) or 12 Professional Development Hours (PDHs). This class has not been registered with and State Licensing or Education Board.

Course Objectives

Upon successful completion of this course the learner will be able to:

1. Understand the organization, scope, purpose, and general application of the National Electrical Safety Code.
2. Apply the Code to common situations found on overhead and underground distribution, transmission, and communication lines and in substations.
3. Recognize how the Code is integrated into design and construction standards and operating practices.
4. Identify and take action to correct Code violations and safety hazards.
5. Design and build facilities that comply with Code requirements.
6. Understand the actions needed to work safely.
7. During the 2nd Day, interact with class attendees and understand how to independently find rules in the Codebook.
8. During the 2nd Day, participate in code discussion and apply the rules in the Codebook to actual field construction situations.

Class Format/Learning Methods

- ◆ Presented live
- ◆ Lecture format
- ◆ Real time Q & A
- ◆ Presentation slides rich in graphics and practical applications
- ◆ Ample time for questions and class discussion
- ◆ Exercises consisting of looking up Code Rules and applying the Rules to field construction

Benefits of Marne and Associates In-House Training

- ◆ Save on travel time and out-of-office expenses.
- ◆ Entire departments can be trained together.
- ◆ The presentation can be designed to meet the needs of your organization.
- ◆ Training schedule can be modified to meet your needs.

About the Instructor

David J. Marne, P.E., is a registered professional electrical engineer. Mr. Marne is the author of *McGraw-Hill's National Electrical Safety Code (NESC) 2017 Handbook* and is a nationally recognized speaker on the NESC.

He serves on NESC Subcommittee 4 Overhead Lines Clearances, Subcommittee 7 Underground Lines, and the Interpretations Subcommittee. He is company president and senior electrical engineer for Marne and Associates, Inc. in Missoula, MT where he specializes in National Electrical Safety Code (NESC) training, OSHA training for power and communication workers, engineering design training, and expert witness services related to the NESC, the OSHA Standards for Power and Communication workers, and California's General Orders GO95, GO128, and GO165.

Mr. Marne has over 35 years of experience in the utility industry engineering and managing transmission and distribution line projects, substation projects, electrical system planning studies, joint use (power and communication) projects, and providing training and expert witness services.



David J. Marne, P.E.

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Class Schedule - Day 1

8:00 a.m. Registration begins

8:30 a.m. Welcome

8:45 a.m. NESC General Overview
Introduction - Sections 01, 02, 03, 09

- ◆ The Four Parts of the NESC
- ◆ Purpose and Scope of the NESC
- ◆ NESC v. NEC
- ◆ Definitions and References
- ◆ Grounding Methods for Substations and Lines

Part 1 - Electric Supply Stations

- ◆ Substation Fences
- ◆ Safety Signs
- ◆ Storage
- ◆ Clearances
- ◆ Guards

10:15 a.m. Break

10:30 a.m. Part 2 - Overhead Lines

- ◆ Inspection and Tests of Overhead Lines
- ◆ Readily Climbable Structures
- ◆ Tree Clearing
- ◆ Understanding a Sag and Tension Table
- ◆ The 10 Rules of Overhead Line Clearance
- ◆ Most Popular Table in the NESC, Table 232-1

12 Noon Lunch

1:00 p.m. Part 2 - Overhead Lines (continued)

- ◆ 2nd Most Popular Table in the NESC, Table 234-1
- ◆ Climbing Space and Working Space
- ◆ Joint Use Overhead Clearances
- ◆ Communication Worker Safety Zone
- ◆ Grades of Construction
- ◆ Overload and Strength Factors

2:30 p.m. Break

2:45 p.m. Part 3 - Underground Lines

- ◆ UG Conduit v. Direct Buried Systems
- ◆ Burial Depths
- ◆ Pulling Tensions and Side Wall Pressures
- ◆ Manholes and Vaults
- ◆ Joint Use Underground Installations

Class Schedule (continued)

Part 4 - Work Rules

- ◆ NESC v. OSHA
- ◆ Minimum Approach Distance (MAD)
- ◆ General Rules for Employers and Employees
- ◆ Additional Rules for Communication Workers
- ◆ Additional Rules for Supply Workers

4:15 p.m. Adjourn

Class Schedule - Day 2

8:30 a.m. Welcome

8:45 a.m.

Substation Examples & Exercises

10:15 a.m. Break

10:30 a.m.

OH Line Examples & Exercises

12 Noon Lunch

1:00 p.m.

OH Line Examples & Exercises

2:30 p.m. Break

2:45 p.m.

UG Line Examples & Exercises

4:15 p.m. Adjourn

Enrollment/Pricing/ Cancellation

- ◆ Please contact us for a quote to have this class presented at your utility or association.
- ◆ Our in-house presentations are typically economical on a per person basis when the utility or association has 15 or more individuals to train. For in-house training, the utility or association provides the conference room and any desired meals and beverages for the attendees.
- ◆ Class cancellations can be made by contacting Marne and Associates, Inc. at any time prior to the presentation date. No payment is due until the class is completed.

Comments by Past Participants...

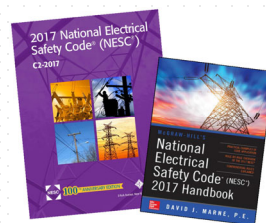
"Good for people new to the NESC."

"Great seminar! Learned a ton of new information."

"Dave is an excellent presenter. He took the time to address the things we deal with regularly."

Class Materials

- ◆ Attendees will receive a hard copy or pdf copy of the class presentation slides. The presentation materials are copyrighted by Marne and Associates, Inc. with permissions from the McGraw-Hill companies, Inc. Class materials are reserved for class attendees only and may not be duplicated.
- ◆ For Day 1 of the class, attendees are encouraged (but not required) to bring a copy of the NESC Codebook and McGraw-Hill's NESC Handbook.
- ◆ For Day 2 of the class, attendees are required to have a copy of the 2017 NESC Codebook for class exercises.
- ◆ Books are available for purchase on www.marneassociates.com.



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