

Course Title

RV-11542 - 2020 NEC® Changes: Wiring and Protection

Contact Hours: 2

This course will review various wiring and protection related changes to the 2020 NEC. Included will be a review of requirements associated with arc fault protection, receptacle locations, feeders, load calculations, and overcurrent protection. Since reconditioned equipment requirements are completely new to the NEC, we'll show you how this will place a new emphasis on maintaining equipment, and you'll see how some changes related to load calculations will have a drastic effect on services sizes.

Course Objectives:

By the end of this course, you will be able to:

- Describe the function of and changes related to Arc Fault Circuit Interrupters (AFCI's)
- Identify new requirements associated with AFCI and Ground Fault Circuit Interrupter (GFCI) reconditioning
- Discuss the requirement concerning common supply equipment and multiple feeders
- Describe the revised requirements associated with dwelling unit receptacle outlets at countertops, peninsulas, work surfaces, wall spaces, outdoors, basements, garages and accessory buildings
- Examine the changes associated with receptacles in area where equipment requires servicing
- Identify the revision concerning lighting outlets and wall mounted control devices
- Discuss the expanded requirements concerning feeders, including temporarily installed feeders
- Explain the load calculation revisions for both dwelling and non-dwelling units
- Examine the expanded allowances for outdoor feeders and common supply equipment
- Explain the expansion of barriers associated with service equipment
- Describe the new requirement for dwelling unit surge protection
- Identify the changes to the service disconnect rules
- Identify new requirements associated with overcurrent device reconditioning
- Discuss changes made to arc-energy reduction requirements

Content Outline

Introduction

10 Minutes

- Course Overview
- Arc Fault Circuit Interrupters (AFCI) vs Ground Fault Circuit Interrupters (GFCI)

Article 210 Branch Circuits

25 Minutes

- 210.12 Arc Fault Circuit Interrupter Protection
- Section 210.15 Reconditioned Equipment
- Section 210.25(B) Common Area Branch Circuits in Buildings with More Than One Occupancy
- Section 210.52(C) Dwelling Unit Receptacle Outlets at Countertops and Work Surfaces
- Section 210.52(C) Parentheses (1) – (3)
- Section 210.52.(E) Outdoor Outlets
- Section 210.52(G) Basements, Garages, and Accessory Buildings
- Section 210.63 Equipment Requiring Servicing

- Section 210.70 Lighting Outlets Required

Article 215 Feeders

15 Minutes

- Section 215.2(A) Minimum Rating and Size of Feeders Not More Than 1000 Volts Required
- Section 215.9 Ground Fault Circuit Interrupter Protection for Personnel Required
- Section 215.10 Ground Fault Protection of Equipment Required

Article 220 Branch Circuit, Feeder, and Service Load Calculations

25 Minutes

- Sections 220.11 Floor Area and 220.12 Lighting Loads for Non-Dwelling Occupancies Required
- Table 220.12 General Lighting Loads by Non-Dwelling Occupancy Required
- 220.14(J) Dwelling Units Required
- Section 220.14(M) Hotel and Motel Occupancies Required
- Section 220.53 Appliance Load to Dwelling Units Required
- Section 220.60 Noncoincident Loads
- 220.87 Determining Existing Loads

Article 225 Outside Branch Circuits and Feeders

10 Minutes

- Section 225.30(B) Common Supply Equipment

Article 230 Services

15 Minutes

- Section 230.46 Spliced and Tapped Conductors
- Section 230.62(C) Service Equipment Barriers
- 230.67 Surge Protection
- Section 230.71 Maximum Number of Disconnects
- Section 230.85 Emergency Disconnects

Article 240 Overcurrent Protection

15 Minutes

- Article 240 Changes Summarized

Conclusion

5 Minutes

- Summary and Implications

1. List of reference and source materials/bibliography

All material necessary to complete the course is included in the course. A subject matter expert using his or her own personal knowledge writes the course. Students are not directed to additional material as a requirement for course completion, only as added information for personal interest.

2. Instructor Information

Vincent Della Croce – Resume Attached

3. Totals hours of Instruction

1 Hour(s) – this course is online and available 365/24/7 to anyone with internet access

4. Certificate of completion

sample is attached

5. Proof of compliance with interactive distance learning requirements

- a. Courses are being developed with interactivity as a key component in its development. RedVector's 'rule of thumb' is to insert an activity every 3 to 5 minutes or 500 to 800 words of text. We offer a variety of activities through the coursework to keep the user involved and requiring knowledge of the course materials being reviewed in order to move forwards.
- b. Users sign into an account with a unique User Name and Password. We request that a user agree to an affidavit stating that they are the owner of the account before proceeding to the exam. Course completion is measured by passing the exam with a minimum score of 75%.
- c. FL Contractors are notified at the beginning of the course that they are required to spend 50 minutes per credit hour in the course in order to receive an accreditation certificate. The LMS will not allow a certificate to be issued or reflect course completion until the time requirement is met by the user.
- d. By one click of the button on each screen of the coursework, the user is given the option to obtain information in several ways. We have a FAQ page, direct email request to Client Support or they may call through a Toll Free number. Our Client Support Team is available from 8 am to 6 pm, Monday thru Friday. If there is a general question, RedVector consults with several Subject Matter Experts that respond to questions in a timely manner. If the question is more specific requiring a direct response from the course author, communication is made with the author to provide the user a response.
- e. There is a statement required to be agreed upon by the User confirming their identity before and after taking the test.
- f. Each account is established with a unique user name and password in order to access. If a user is taking a longer than normal time to review a section, they will receive a pop-up and have 90 seconds to respond or their session will time out requiring the user to sign into the site again if they wish to continue the coursework.