

COUNTY COUNCIL OF PRINCE GEORGE'S COUNTY, MARYLAND

2000 Legislative Session

Bill No. CB-41-2000

Chapter No. 32

Proposed and Presented by The Chairman (by request – County Executive)

Introduced by Council Members Shapiro and Estepp

Co-Sponsors _____

Date of Introduction May 23, 2000

BILL

1 AN ACT concerning

2 Electrical Code

3 For the purpose of amending the Electrical Code and adopting the 1999 National Electrical
4 Code.

5 BY adding:

6 SUBTITLE 9. ELECTRICITY.

7 Sections 9-101.01 and 9-108.01A,

8 The Prince George's County Code

9 (1999 Edition).

10 BY repealing and reenacting, with amendments:

11 SUBTITLE 9. ELECTRICITY.

12 Sections 9-101, 9-102, 9-104.01, 9-105, 9-106, 9-107.01, 9-108,

13 9-108.01, 9-108.02, 9-109, 9-109.01, 9-109.02, 9-111, 9-114, 9-117,

14 and 9-118,

15 The Prince George's County Code

16 (1999 Edition).

17 SECTION 1. BE IT ENACTED by the County Council of Prince George's County,
18 Maryland, that Sections 9-101.01 and 9-108.01A of the Prince George's County Code be and the
19 same are hereby added:

20 **SUBTITLE 9. ELECTRICAL CODE.**

21 **DIVISION 1. ELECTRICITY.**

Subdivision 1. Adopted by Reference.

Sec. 9-101.01. Code Arrangement.

The following amendments, additions and/or deletions are made to Article 90 of the National Electrical Code:

(1) The second paragraph of Section 90-3 "Code Arrangement" is amended to read as follows: Installations of communications systems shall be subject to all provisions of the NEC.

Sec. 9-108.01A. Same; Article 338 -- Service-Entrance Cable: Types SE, and USE

(a) The following amendments, additions and/or deletions are made to Article 338 of the National Electrical Code:

(1) The following Exception is added to Section 338-3(b): type SE service-entrance cable and type SER cable where conductors are fully insulated shall be limited to installations of single and multifamily dwellings; except under the provisions of Article 305.

SECTION 2. BE IT FURTHER ENACTED that Sections 9-101, 9-102, 9-104.01, 9-105, 9-106, 9-107.01, 9-108, 9-108.01, 9-108.02, 9-109, 9-109.01, 9-109.02, 9-111, 9-114, 9-117, and 9-118 of the Prince George's County Code be and the same are hereby repealed and reenacted with the following amendments:

SUBTITLE 9. ELECTRICAL CODE.

DIVISION 1. ELECTRICITY.

Subdivision 1. Adopted by Reference.

Sec. 9-101. Code; adoption by reference.

The National Electrical Code (NEC), [1996] 1999 Edition, [as adopted] published by the National Fire Protection Association, is hereby adopted by reference and made a part of this Subtitle with the same force and effect as though set out in full herein as the Official Electrical Code of Prince George's County, together with the changes, deletions, or modifications prescribed in this Subtitle. All electrical work performed or contracted to be performed in the County shall be included within the purview of this Subtitle.

Sec. 9-102. Definitions.

(a) The term "**the authority having jurisdiction for enforcing this Code**" as used in the National Electrical Code shall mean the Chief Electrical Inspector and Electrical Code Official of the Department of Environmental Resources, or other such person as the Director shall

1 designate. Where the name of the jurisdiction is to be indicated in any Section of the Code, the
 2 name to be substituted therein shall be "Prince George's County, Maryland."

3 * * * * *

4 **Sec. 9-104.01. Same; Article [110-16] 110-26 -- [Working] Space About Electric Equipment**
 5 **(600 Volts, Nominal, or Less).**

6 (a) The following amendments, additions, and/or deletions are made to [Article 110-16(e)
 7 "Illumination".] Article 110-26 of the National Electrical Code:

8 (1) Section 110-26(d) "Illumination" is amended to read as follows: Illumination shall
 9 be provided for all working spaces about service equipment, switchboards, panelboards, and
 10 motor control centers installed indoors. In addition, emergency illumination shall be provided
 11 about service equipment and switchboards in all commercial occupancies.

12 (2) Section 110-26(f) (1) (b) "Foreign Systems" is amended to read as follows:. The
 13 space equal to the width and depth of the equipment shall be kept clear of foreign systems unless
 14 protection is provided to avoid damage from condensation, leaks or breaks in such foreign
 15 systems. This protection shall not be located within the dedicated space above the electrical
 16 equipment. This zone shall extend from six (6) feet above the top of the electrical equipment or
 17 to the structural ceiling whichever is lower.

18 **Sec. 9-105. Wiring and Protection; Article 210 -- Branch Circuits.**

19 (a) The following amendments, additions, and/or deletions are made to Article 210 of the
 20 National Electrical Code:

21 (1) The following is added to the text of Section [210-5, "Color Code for Branch
 22 Circuits:"] 210-4 "Multi-wire Branch circuits:"

23 [(c)] (d) Ungrounded Conductors. Ungrounded conductors of different voltages
 24 shall be of different colors or identified by other means. Conductors of multiwire branch circuits
 25 and two-wire branch circuits connected to the same system shall conform to the following color
 26 code: three-wire circuits - one black, one white, one red; four-wire circuits - one black, one
 27 white, one red, one blue; five-wire circuits - one black, one white, one red, one blue, one yellow.
 28 Where more than one multiwire branch circuit is carried along a single raceway, the ungrounded
 29 conductors of the additional circuit may be of colors other than those specified. All circuit
 30 conductors of the same color shall be connected to the same ungrounded feeder conductor

throughout the installation. The means of identification shall be permanently posted at each panelboard. Note: For four-wire delta systems, see National Electrical Code 384-3 (e).

[(2) Section 210-70 (a), titled "Dwelling Unit(s)." Amend the second paragraph to read as follows: At least one lighting outlet controlled by a light switch located at the point of entry to the attic, underfloor space, utility room, and basement shall be installed. The lighting outlet shall be provided at or near any equipment requiring servicing if present.]

Sec. 9-106. Same; Article 250 -- Grounding.

(a) The following amendments, additions, and/or deletions are made to Article 250 of the National Electrical Code:

(1) The following addition is made to the text of Section 250-32 (b) (2), "Grounded Conductor". Where (1) an equipment grounding conductor is not run with the supply conductors to a separate building or structure, the size of the AC system grounded conductor on the supply side of the disconnecting means shall not be smaller than the size specified in Table 250-122 "Minimum Size Equipment Grounding Conductors for Grounding Raceway and Equipment".

[(1)] (2) [Section 250-81(c)] Section 250-50 (c), "Concrete - Encased Electrode," is amended to read as follows: All new structures, both residential and commercial, require a concrete encased electrode to be used as the principal grounding element. A concrete encased electrode is an electrode encased by at least 2 inches (50.8 mm) of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth, consisting of at least 20 feet (6.1 m) of one or more steel reinforcing bars or rods of not less than 1/2 inch (12.7 mm) diameter, or consisting of at least 20 feet of (6.1 m) bare solid copper conductor not smaller than No. 4 AWG. Steel reinforcing rods and/or copper conductor shall be supported in the trench to insure 2 inches (50.8 mm) separation from earth. If a rod with galvanized finish is used, a bronze or brass clamp listed for the purpose may be used to attach the grounding conductor which requires a minimum of 2 foot (0.61 m) of accessible length after installation. If a nongalvanized rod is used, an exothermic weld is required to attach the grounding conductor. Rods having a nonconductor coating shall not be used for the required grounding electrode.

[(2)] (3) [Section 250-84] Section 250-56, "Resistance of Made Electrodes." Add the following: Unless data is provided to the authority having jurisdiction showing that the actual resistance to ground measurement is twenty-five (25) ohms or less when a metal underground

water pipe in direct contact with the earth for ten (10) feet or more is not available at the premises, an additional ground rod shall be installed to serve as the supplementary ground.

Sec. 9-107.01. Wiring Methods and Materials; Article 310 -- Conductors for General Wiring.

(a) The following amendments, additions, and/or deletions are made to Article 310 of the National Electrical Code:

(1) The following paragraph is added to Section 310-2, "Conductors:" (c) Aluminum Conductors. Aluminum conductors shall be permitted only for service and feeder use and shall not be smaller than #2 AWG.

(2) The following exception is added to Section 310-2 "Conductors": Listed Cable assemblies #2 aluminum AWG and larger installed in single family and multifamily dwellings, having grounding conductors sized in accordance with Section 250-122 "Size of Equipment Grounding Conductors", shall be excluded from the requirements set forth in (a)(1), above.

(3) The following addition is made to 310-15(b)(2) "Adjustment Factors": No diversity is permitted when determining ampacity of three (3) or more conductors in a raceway or cable.

Sec. 9-108. Same; Article 336 -- Nonmetallic-Sheathed Cable.

(a) The following amendments, additions, and/or deletions are made to Article 336 of the National Electrical Code:

(1) The first paragraph of [Section 336-4] Section 336-5, "Uses Not Permitted;" is amended to read as follows: (a) Type NM [or], NMC and NMS. Types NM [and], NMC and NMS cables shall not be used: (1) in any dwelling, multifamily dwelling or structure exceeding a total of four (4) floors; (2) as service-entrance cable; (3) in commercial garages having hazardous (classified) locations as provided in Section 511-2; (4) in theaters and similar locations, except as provided in Article 518, Places of Assembly; (5) in motion picture studios; (6) in storage battery rooms; (7) in hoistways; (8) imbedded in poured cement, concrete, or aggregate; or (9) in any hazardous (classified) location except as permitted by Section 501-4(b) , exception, 502-4, exception, and 504.20.

Note: for the purpose of this article, in determining the first floor of any multifamily dwelling or structure, the basement or story below grade, and/or a vehicle parking garage, shall

1 constitute a floor. A mezzanine shall constitute a floor if it exceeds the allowable maximum
 2 floor area of a mezzanine, as defined by the BOCA National Building Code.

3 **Sec. 9-108.01. Same; Article 384 -- Switchboards and Panelboards.**

4 (a) The following amendments, additions, and/or deletions are made to Article 384 of the
 5 National Electrical Code:

6 (1) Article 384-16, "Overcurrent Protection," [is amended by deleting] Exception
 7 No. 2 under paragraph (a) is amended to read as follows:

8 For existing installations split-bus panelboards shall be required to be replaced by a
 9 main braker panelboard, when replacement of service entrance conductors occurs.

10 (2) A new Section 384-28, titled "Switchboards of One Thousand (1,000) Amperes or
 11 Larger," is added to read as follows:

12 Switchboards having a capacity of one thousand (1,000) amperes or larger, using aluminum
 13 feeders and/or busbars, shall receive periodic cleaning and preventative maintenance as
 14 recommended by the manufacturer of such equipment to minimize the possibility of fire or
 15 catastrophic failure. Cleaning and maintenance require an electrical permit, including
 16 coordination of shutdown with the utility, and shall include the following:

- 17 (i) Vacuum entire interior of switchboard;
- 18 (ii) Clean busbars and contacts with a suitable nonconductive solvent;
- 19 (iii) Lubricate all moving mechanisms;
- 20 (iv) Check all conductors for abrasions;
- 21 (v) Torque busbars and conductor connections to manufacturer's
- 22 recommended specifications;
- 23 (vi) Replace worn, damaged, or deteriorating components ; and
- 24 (vii) Testing of groundfault protection device.

25 **Sec. 9-108.02. Equipment for General Use; Article 410 -- Lighting Fixtures, Lampholders,**
 26 **Lamps, and Receptacles.**

27 (a) The following amendments, additions, and/or deletions are made to Article 410 of the
 28 National Electrical Code:

29 (1) The following addition is made to paragraph (c) of Section 410-16: All "lay-in"
 30 light fixtures will require independent suspension to insure that the fixture will not drop more
 31 than nominally two (2) or three (3) inches when the framing members no longer provide the

support. Number 12 SWG wire firmly secured to the building structure and the light fixture is satisfactory for this purpose. Two (2) restraining wires (one (1) at each end of the fixture) are required for the two and three -tube fluorescent fixtures (e.g., 1x4 and 2x2 fixtures) and four (4) [restraints] restraining wires (one (1) at each corner) are required for four, five and six -tube fluorescent fixtures (e.g., 2x4 fixture). Other types of lay-in fixtures shall also have a secondary support to preclude the danger of falling when the framing members fail or are removed (e.g., hi-hat fixture).

Sec. 9-109. [Reserved.] Special Equipment: Article 600 -- Electric Signs and Outline Lighting.

(a) The following amendments, additions, and/or deletions are made to Article 600 of the National Electrical Code:

(1) Section 600-6(a) "Location", is amended to read as follows: Signs and outline lighting systems attached to or supported by the building structure shall require a disconnecting means adjacent to the sign or outline lighting system. The disconnecting means shall disconnect the sign or outline lighting system from all ungrounded supply conductors. It shall be designed so that no pole can be operated independently and it shall be capable of being locked in the open position.

Sec. 9-109.01. Special Conditions; Article 700 -- Emergency Systems.

(a) The following amendments, additions, and/or deletions are made to Article 700 of the National Electrical Code:

(1) Paragraph (e) is added to Section 700-6 "Transfer Equipment" to read as follows:
(e) Transfer equipment shall be separated by a minimum of two (2) hour fire rated wall(s) from normal power supply systems.

(2) The following Exception is added to Section 700-6 "Transfer Equipment".
"Transfer Equipment " for Fire Pumps installed in accordance with Article 695 shall not require the two (2) hour fire separation as in (a)(1) above.

(3) [Paragraph (e)] The first paragraph of Section 700-12, titled "General Requirements," is amended by the addition of the following sentence: Permission to use this source of emergency power must be requested in writing from the authority having jurisdiction prior to the submittal of engineering plans for approval.

Sec. 9-109.02. Same; Article 701 -- Legally Required Standby Systems.

(a) The following amendments, additions, and/or deletions are made to Article 701 of the National Electrical Code:

(1) [Paragraph (e) of] Section [701-11] 701-2, titled "Legally Required Standby Systems," is amended by the addition of the following sentence: Permission to use this source of emergency power must be requested in writing from the authority having jurisdiction prior to the submittal of engineering plans for approval.

Sec. 9-111. Duties and powers of the Chief Electrical Inspector.

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(d) The Chief Electrical Inspector may, so long as the public safety is assured, grant administrative relief in the form of variances and/or waivers to the National Electrical Code (NEC), provided that said applicant clearly demonstrates substantial practical difficulties and/or circumstances of undue hardship involved in the implementation and enforcement of the provisions of the NEC, or Subtitle 9, Prince George's County Code. The particulars of such variances, when granted or allowed, shall be furnished in writing to the applicant and made part of the permanent file established by the Chief Electrical Inspector.

Note: Variances and waivers shall not become a substitute for the proper use and implementation or enforcement of the NEC or Subtitle 9, Prince George's County Code.

Sec. 9-114. Approved plans.

Approved plans are plans which have been reviewed by the Chief Electrical Inspector or his [appointed] authorized representative and have been found to be consistent with Code requirements and accepted practices. Approved plans shall be stamped "Approved" and at least one (1) set of such approved plans shall be retained by the Department and the other set shall be kept at the building site, open to inspection of the Chief Electrical Inspector or his authorized representative at all reasonable times.

Sec. 9-117. Right of property owner to perform work on own premises.

* * * * *

(c) The following electrical work is not permitted to be performed under a homeowners permit:

- (1) Installation of New Service;
- (2) Service Heavy-Up;

- (3) Service Panel Change;
- (4) Relocation of Service Panel and/or Meter; [or]
- (5) Relocation of Service Drop or Lateral, or
- (6) Installation of sub-panels.

Sec. 9-118. Permits; terms and conditions.

* * * * *

(b) Any permit issued with administrative errors which are the result of information provided by the applicant, such as incomplete listing of work accomplished, wrong address, or wrong owner, shall be revised prior to a final inspection. A fee of [Ten Dollars (\$10.00)] Fifteen Dollars (\$15.00) is imposed for a permit revision and may be credited to the increased scope of work.

1 SECTION 3. BE IT FURTHER ENACTED that this Act shall take forty-five (45) calendar
2 days after it becomes law.

Adopted this 20th day of June, 2000.

COUNTY COUNCIL OF PRINCE
GEORGE'S COUNTY, MARYLAND

BY: _____
Dorothy F. Bailey
Chair

ATTEST:

Joyce T. Sweeney
Clerk of the Council

APPROVED:

DATE: _____ BY: _____
Wayne K. Curry
County Executive

KEY:
Underscoring indicates language added to existing law.
[Brackets] indicate language deleted from existing law.
Asterisks *** indicate intervening existing Code provisions that remain unchanged.