COUNTY COUNCIL OF PRINCE GEORGE'S COUNTY, MARYLAND

2003 Legislative Session

Bill No. CB-66-2003

Chapter No. 77

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

Introduced by Council Members Dean and Peters

Co-Sponsors

Date of Introduction October 28, 2003

BILL

AN ACT concerning

Electrical Code

For the purpose of amending the Electrical Code and adopting the 2002 National Electrical Code and renumbering sections in Subtitle 9.

BY repealing and reenacting with amendments:

SUBTITLE 9. ELECTRICITY.
Sections 9-101, 9-101.01, 9-102, 9-104.01, 9-105, 9-106, 9-107.01, 9-108, 9-108.00.01, 9-108.01, 9-108.02, 9-109, 9-109.01, and 9-109.02,
The Prince George's County Code
(1999 Edition, 2002 Supplement).

BY adding:

SUBTITLE 9. ELECTRICITY.
Section 9-108.03,
The Prince George’s County Code
(1999 Edition, 2002 Supplement).

BY renumbering:

SUBTITLE 9. ELECTRICITY.
Sections 9-130, 9-131, 9-132, 9-134, 9-135, 9-137, 9-138, 9-139, 9-140, and 9-141,
The Prince George’s County Code

(1999 Edition, 2002 Supplement).

SECTION 1. BE IT ENACTED by the County Council of Prince George's County, Maryland, that Sections 9-101, 9-101.01, 9-102, 9-104.01, 9-105, 9-106, 9-107.01, 9-108, 9-108.00.01, 9-108.01, 9-108.02, 9-109, 9-109.01and 9-109.02 of the Prince George's County Code be and the same are hereby repealed and reenacted with the following amendments:

SUBTITLE 9. ELECTRICITY.

DIVISION 1. ELECTRICAL CODE.

Subdivision 1. Adopted by Reference.

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

The National Electrical Code (NEC), [1999] 2002 Edition, 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. 9-101.01. Code Arrangement.

(a) 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] 90.3, "Code Arrangement," is amended to read as follows: Installations of communications systems shall be subject to [all provisions] the requirements of Chapters 1 through 8 of the NEC.

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

(b) For the purposes of this Division, the following words, terms and phrases shall have the meaning given for them in Section 2-253.50 of this County Code:

(1) Board;

(2) Department;

(3) Director;

(4) Electrical Contractor;

(5) Electrical Contractor, Limited;

(6) Electrical work;

(7) Master Electrician;

(8) Master Electrician, Limited[.];

(9) Journeyman Electrician;

(10) Apprentice Electrician;

(11) Electrical Subcontractor;

(12) Electrical Subcontractor, Limited.

Subdivision 2. Amendments to the National Electrical Code.

Sec. 9-104.01. Same; Article 110[-26 -- Spaces About Electrical Equipment] Requirements for Electrical Installations.

(a) The following amendments, additions, and/or deletions are made to [Article 110-26] Section 110.26 of the National Electrical Code:

(1) Section [110-26(d)] 110.26(D), "Illumination," is amended to read as follows: Illumination shall be provided for all working spaces about service equipment, switchboards, panelboards, and motor control centers installed indoors. In addition, emergency illumination shall be provided about service equipment and switchboards in all commercial occupancies.

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

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

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

(1) The following is added to the text of Section [210-4] 210.4, "Multiwire Branch Circuits:"

(E) Ungrounded Conductors. Ungrounded conductors of different voltages shall be of different colors or identified by other means. Conductors of multiwire branch circuits and two-wire branch circuits connected to the same system shall conform to the following color code: [three-wire circuits - one black, one white, one red; four-wire circuits - one black, one white, one red, one blue; five-wire circuits - one black, one white, one red, one blue, one yellow. Where more than one multiwire branch circuit is carried along a single raceway,] 240 volt "single phase" ungrounded conductors shall be identified by the use of one black, one red; 208 volt "three phase" connected systems shall be identified by the use of one black, one red, one blue; 480 volt "three phase" connected systems shall be identified by the use of one yellow, one brown, one orange; "grounded" conductors shall comply with Section 200.6(B) of the National Electrical Code; the ungrounded conductors of the additional circuit may be of colors other than those specified. All circuit conductors of the same color shall be connected to the same ungrounded feeder conductor throughout the installation. [The means of] In addition to the requirements of Section 408.13 of the National Electrical Code, identification shall be permanently posted at each panelboard. Note: For four-wire delta systems, see National Electrical Code [384-3 (e)] 408.3(E).

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."

(2)] Section [250-50(c)] 250.52(A)(3), "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 electrode 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 or irreversible clamp is required to attach the grounding electrode conductor. Rods having a nonconductor coating shall not be used for the required grounding electrode.

[(3)] (2) Section [250-56] 250.56, "Resistance of [Made] Rod, Pipe, and Plate 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] 310.2, "Conductors:" [(c)] (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] 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] 250.122, "Size of Equipment Grounding Conductors," shall be excluded from the requirements set forth in (a)(1), above.

(3) The following amendments are added to Section 310.11(B)(1)(a) “Color Coding”: In types I and II construction the armor or metal shell of type AC, Health Care Facility Cable (“HFC”) and type MC cable shall be color-coded in accordance with the voltage rating of the conductors,

Conductors	**120/240 120/208 volt colors**
2 conductors	black/white

3 conductors	black/white/red
4 conductors	black/white/red/blue
Conductors	**277 volt colors**
2 conductors	gray/orange
	gray/yellow
	gray/brown
Conductors	**277/480 volt colors**
3 conductors	brown/orange/gray
	orange/yellow/gray
	brown/yellow/gray
4 conductors	brown/orange/yellow/gray

[(3)] (4) The following addition is made to [310-15(b)(2)] 310.15(B)(2)(a)FPN, "Adjustment Factors:" No diversity allowance 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]. Reserved.

[(a) The following amendments, additions, and/or deletions are made to Article [336] 334 of the National Electrical Code:

(1) The first paragraph of Section 336-5, "Uses Not Permitted," is amended to read as follows: (a) Type NM, NMC, and NMS. Types NM, 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 constitute a floor. A mezzanine shall constitute a floor if it exceeds the allowable maximum floor area of a mezzanine, as defined by the BOCA National Building Code.]

Sec. 9-108.00.01. 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)] 338.10: Type SE service-entrance cable and type SER cable where conductors are fully insulated shall be limited to [installations of single and multifamily dwellings] construction types III, IV and V, except under the provisions of Article [305] 527.

Sec. 9-108.01. Same; Article [384] 408 -- Switchboards and Panelboards.

(a) The following amendments, additions, and/or deletions are made to Article [384] 408 of the National Electrical Code:

(1) Article [384-16] 408.16, "Overcurrent Protection," Exception No. 2 under paragraph [(a)] (A) is amended to read as follows:

For existing installations, split-bus panelboards shall be required to be replaced by a main [breaker] over-current protective device panelboard when replacement of service entrance conductors occurs.

(2) A new Section [384-28] 408.22, titled "Switchboards of One Thousand (1,000) Amperes or Larger," is added to read as follows:

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

(i) Vacuum entire interior of switchboard;

(ii) Clean busbars and contacts with a suitable nonconductive solvent;

(iii) Lubricate all moving mechanisms;

(iv) Check all conductors for abrasions;

(v) [Torque busbars and conductor connections to manufacturer's recommended specifications] Busbars and busbar connections shall be subjected to thermograph testing, if corrective action is warranted, repair shall be made in accordance with recommended manufacturer specifications;

(vi) Replace worn, damaged, or deteriorating components; and

(vii) Testing of ground-fault protection device.

Sec. 9-108.02. Equipment for General Use; Article 410 – [Lighting Fixtures] Luminaires, Lampholders, and Lamps[, and Receptacles].

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

(1) The following addition is made to paragraph [(c)] (C) of Section [410-16] 410.16: All "lay-in" [light fixtures] luminaires will require independent suspension to insure that the [fixture] luminaire will not drop more 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] luminaire is [satisfactory] required for this purpose. Two (2) restraining wires (one (1) at each end of the [fixture] luminaire) are required for [the two- and three-tube fluorescent fixtures (e.g., 1x4 and 2x2 fixtures)] luminaries smaller than 2x4 and four (4) restraining wires (one (1) at each corner) are required [for four-, five-, and six-tube fluorescent fixtures (e.g., 2x4 fixture)] on all luminaries 2x4 and larger. Other types of lay-in [fixtures] luminaires 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] luminaire).

Sec. 9-109. 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)] 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 and in sight of 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] Section 700.6(A) is amended by the addition of the following sentence:

[(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)] The first paragraph of Section [700-12] 700.12, titled "General Requirements," is amended by the addition of the following sentence: Permission to use [this source of] an emergency power source must be requested and authorized in writing from the authority having jurisdiction prior to the submittal of engineering plans for approval.

Note: Separation of transfer equipment shall incorporate the emergency system on the load side of the transfer switch.

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

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

(1) Section [701-2, titled] 701.11, "Legally Required Standby Systems," is amended by the addition of the following sentence: Permission to use [this source of] an emergency power source must be requested and authorized in writing from the authority having jurisdiction prior to the submittal of engineering plans for approval.

SECTION 2. BE IT FURTHER ENACTED that Section 9-108.03 of the Prince George's County Code be and the same is hereby added:

SUBTITLE 9. ELECTRICITY.

DIVISION 1. ELECTRICAL CODE.

Subdivision 2. Amendments to the National Electrical Code.

Sec. 9-108.03. Transformers and Transformer Vaults; Same; Article 450.

(a) The following amendments, additions, and/or deletions are made to Article 450 of the National Electrical Code:

(1) The following paragraph is added to Section 450.21: A means of disconnecting the primary shall be located "within sight" of any dry-type transformer meeting the requirements of 450.21(A) and (B).

SECTION 3. BE IT FURTHER ENACTED that Sections 9-108.03 and 9-109.00.01 of the Prince George's County Code be and the same are hereby renumbered:

SUBTITLE 9. ELECTRICITY.

DIVISION 2. BURGLAR AND HOLDUP ALARM SYSTEMS [INSTALLATION STANDARDS].

Subdivision 1. Installation Standards

Sec. 9-[130] 201. Definitions.

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Sec. 9-[131] 202. Alarm system installation standards.

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Sec. 9-[132] 203. General installation requirements for burglar and holdup systems.

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[DIVISION 3.] Subdivision 2. BURGLAR AND HOLDUP ALARM USER'S LICENSE AND REGISTRATION

Sec. 9-[134] 211. Alarm user permits.

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Sec. 9-[135] 212. False alarms.

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Sec. 9-[137] 213. Enforcement and penalty.

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Sec. 9-[138] 214. Exemptions within Municipalities.

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[DIVISION 4.] Subdivision 3. ALARM BUSINESS LICENSE

Sec. 9-[139] 221. Alarm business license requirements.

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Sec. 9-[140] 222. Alarm business license revocation and appeals.

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Sec. 9-[141] 223. Alarm business responsibilities.

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SECTION 4. BE IT FURTHER ENACTED that this Act shall take effect forty-five (45) calendar days after it becomes law.

Adopted this 25th day of November, 2003.

COUNTY COUNCIL OF PRINCE GEORGE'S COUNTY, MARYLAND

BY: _____
Peter A. Shapiro
Chairman

ATTEST:

_____
Redis C. Floyd
Clerk of the Council

APPROVED:

DATE: _____ BY: _____
Jack B. Johnson
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.