Electrical

Proposed Code Modifications

TAC: Electrical

Sub Code: Building

Total Mods for Electrical: 11

E3854

Date Proposal Submitted	3/24/2010	**Section**	202
Chapter	2	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Steven Bassett	**General Comments**	No
Attachments	No	**Alternate Language**	No

Related Modifications

Mods 3844, 3840, 3853, 4190

Summary of Modification

revise definition

Rationale

It is the work of the Carbon Monoxide work group

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Will make the code clearer and easier to enforce

Impact to building and property owners relative to cost of compliance with code

Will reduce costs.

Impact to industry relative to the cost of compliance with code

Will reduce costs.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Will make the code more understandable to the necessary safety precautions will be complied with.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Makes the code more understandable.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not address materials, products, methods or systems of construction.

Does not degrade the effectiveness of the code

It improves the effectiveness of the code.

ADDITION. An extension or increase in floor area, number of stories or height of a building or structure.

Date Proposal Submitted	3/24/2010	**Section**	R315
Chapter	3	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	marilyn williams	**General Comments**	Yes
Attachments	Yes	**Alternate Language**	No

Related Modifications

Summary of Modification

The intent of the proposal is to align the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection.

Rationale

The intent of the proposal seeks to align sections 202 and 916 of the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection. See attachment for additional information.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The code change proposal seeks to remove ambiguity and add clarity to the code provisions for local code enforcement officials.

Impact to building and property owners relative to cost of compliance with code

The code change proposal will not increase the cost of construction.

Impact to industry relative to the cost of compliance with code

The code change proposal will not increase the cost of compliance to industry

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

One of the most effective ways to protect the occupants from this odorless and tasteless product of combustion, known as the "Silent Killer" is through the installation of detectors complying with national consensus standards.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The code change proposal improves the code by adding clear, concise and enforceable language based on national consensus standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The code change proposal provides equitable requirements for all carbon monoxide detection and warning equipment.

Does not degrade the effectiveness of the code

The code change proposal does not degrade the effectiveness of the code instead it seeks to improve the usefulness of the code.

General Comment

E3844-G1

Proponent Jack Glenn **Submitted** 6/1/2010 **Attachments** No

Comment

This change may conflict with the provisions of HB-663 if signed by the Governor.

Section R202, Definitions. Amend the following definition:

CARBON MONOXIDE ALARM. A device for the purpose of detecting carbon monoxide, that produces a distinct audible alarm, and is listed ~~or~~ and labeled with the ~~appropriate standard, either~~ ANSI/UL 2034~~—96,~~ Standard for Single and Multiple Station CO Alarms, ~~or UL 2075—04, Gas and Vapor Detector Sensor, in accordance with its application.~~

Section R202, Definitions. Add the following definition:

CARBON MONOXIDE DETECTOR. A device for the purpose of detecting carbon monoxide and is listed and labeled with the ANSI/UL 2075, Gas and Vapor Detector Sensor.

SECTION R315

CARBON MONOXIDE ALARMS

Revise Section R315 Add text to read as follows:

R315.1 Carbon monoxide protection. Every building for which a permit for new construction is issued having a fossil-fuel-burning heater or appliance, a fireplace, or an attached garage shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes. Carbon monoxide alarms shall be installed and maintained in accordance with NFPA 720 and manufacturer's instructions.

R315.1.2 Household carbon monoxide detection systems. Household carbon monoxide detection systems, that include carbon monoxide detectors and audible notification appliance, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted.

~~**R315.1.1**~~ **R315.2 Power Source.** In new construction, carbon monoxide alarms shall receive their primary power from the building wiring when such wiring is served from the local power utility. Such alarms shall have battery back up.

Carbon monoxide detectors shall receive their power from the approved control unit. The approved control unit shall receive its primary power from the building wiring when such wiring is served from a commercial source and the primary power source shall not include a disconnecting switch other than those required for overcurrent protection. The control panel shall be equipped with rechargeable batteries for secondary power backup.

Low-power radio frequency (wireless) detectors shall be permitted to be battery powered when the battery is electrically supervised and shall be capable of sending an alarm signal to the control unit after sending the initial battery depletion signal.

~~R315.1.2~~ **R315.3 Combination alarms.** Combination smoke/carbon monoxide alarms shall be listed ~~or~~ and labeled by a Nationally Recognized Testing Laboratory for both smoke detection and carbon monoxide detection.

~~R315.2~~ **R315.4 Where required in existing dwellings. Reserved**

~~R315.3~~ **R315.5 Alarm requirements. Reserved**

Rationale: The intent of the proposal seeks to align the provisions of sections 202 and 916 of the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection and warning equipment.

NEMA respectfully recommends a clear delineation between the terms. As currently written the definition of carbon monoxide alarms in section 202 of the Florida building code supplement does not correlate with the terminology used in ANSI/UL 2034, ANSI/UL 2075 and NFPA 720. The reason the three ANSI standards use different terms is because the performance and listing requirements are different. For example ANSI/UL 2075 does not preclude carbon monoxide detectors to incorporate an integral sounder but the standard does not mandate it. Also, power requirements in the Florida supplements do not reference the power requirements for wired and wireless carbon monoxide detectors.

In order for carbon monoxide detection and warning equipment to provide life safety protection they must be properly installed and maintained. NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, is the national consensus standard that establishes the performance installation and maintenance requirements for carbon monoxide detection devices. Therefore NEMA recommends adding text that requires carbon monoxide detection and warning equipment to follow the requirements of NFPA 720.

The Florida supplement is unclear if carbon monoxide detectors are allowed to be installed. In accordance with NFPA 720 the household warning functions shall be performed by carbon monoxide alarms or carbon monoxide detectors. The proposal adds clarity that carbon monoxide detection systems and carbon monoxide detectors are permissible in all commercial sleeping occupancies.

Date Proposal Submitted	3/24/2010	**Section**	202 and 916
Chapter	9	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	marilyn williams	**General Comments**	Yes
Attachments	Yes	**Alternate Language**	No

Related Modifications

Summary of Modification

The intent of the proposal is to align the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection.

Rationale

Rationale: The intent of the proposal seeks to align sections 202 and 916 of the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection. See attachment for additional information.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The code change proposal seeks to remove ambiguity and add clarity to the code provisions for local code enforcement officials.

Impact to building and property owners relative to cost of compliance with code

The code change proposal will not increase the cost of construction

Impact to industry relative to the cost of compliance with code

The code change proposal will not increase the cost of compliance to industry

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

It is well documented that carbon monoxide poisonings are a leading cause of injury or death.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The code change proposal improves the code by adding clear, concise and enforceable language based on national consensus standards.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The code change proposal provides equitable requirements for all carbon monoxide detection and warning equipment.

Does not degrade the effectiveness of the code

The code change proposal does not degrade the effectiveness of the code instead it seeks to improve the usefulness of the code.

General Comment

E3840-G1

Proponent Jack Glenn **Submitted** 6/1/2010 **Attachments** No

Comment

This change may conflict with the provisions of HB-663 if signed by the Governor.

Chapter 2 Definitions.

Section 202 Amend the following definition:

CARBON MONOXIDE ALARM. A device for the purpose of detecting carbon monoxide, that produces a distinct audible alarm, and ~~is listed or labeled with the appropriate standard, either ANSI/UL 2034—96, Standard for Single and Multiple Station CO Alarms, or UL 2075—04, Gas and Vapor Detector Sensor, in accordance with its application.~~ shall be listed by a nationally recognized testing laboratory (NRTL) that is U.S. Occupational Safety and Health Administration (OSHA) accredited to test and certify to American National Standards Institute (ANSI)/Underwriters Laboratories (UL) Standards ANSI/UL 2034, Standard for Single and Multiple Station CO Alarms

Section 202. Add the following definition:

CARBON MONOXIDE DETECTOR. A device for the purpose of detecting carbon monoxide and shall be listed by a nationally recognized testing laboratory (NRTL) that is U.S. Occupational Safety and Health Administration (OSHA) accredited to test and certify to American National Standards Institute (ANSI)/Underwriters Laboratories (UL) Standards ANSI/UL 2075, Gas and Vapor Detector Sensor

Revise Section 916 Add text to read as follows:

916.1 Carbon monoxide protection. Every building for which a permit for new construction is issued having a fossil-fuel-burning heater or appliance, a fireplace, or an attached garage shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes. Carbon monoxide alarms shall be installed and maintained in accordance with NFPA 720 and manufacturer's instructions.

Exception: ~~An approved operational carbon monoxide detector shall be installed inside or directly outside of each room or area within a hospital, inpatient hospice facility or nursing home facility where a fossil-fuel-burning heater, engine, or appliance is located.~~ Hospitals, inpatient hospice facilities or nursing home facilities shall have an approved operational carbon monoxide detector installed on the ceiling in the same room as a fossil-fuel burning heater, engine, or appliance. The carbon monoxide detector shall be connected to the carbon monoxide detection system or a ~~fire alarm~~ combination system of the hospital, inpatient hospice facility, or nursing home facility as ~~a supervisory~~ an alarm signal.

916.1.1 Carbon monoxide detection systems. Carbon monoxide detection systems, that include carbon monoxide detectors and audible notification appliance, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted.

~~916.1.1~~ **916.2 Power Source.** In new construction, carbon monoxide alarms shall receive their primary power from the building wiring when such wiring is served from the local power utility. Such alarms shall have battery back up.

Carbon monoxide detectors shall receive their power from the approved control unit. The approved control unit shall receive its primary power from the building wiring when such wiring is served from a commercial source and the primary power source shall not include a disconnecting switch other than those required for overcurrent protection. The control panel shall be equipped with rechargeable batteries for secondary power backup.

Low-power radio frequency (wireless) detectors shall be permitted to be battery powered when the battery is electrically supervised and shall be capable of sending an alarm signal to the control unit after sending the initial battery depletion signal.

~~916.1.2~~ **916.3 Combination alarms.** Combination smoke/carbon monoxide alarms shall be listed ~~or~~ and labeled by a Nationally Recognized Testing Laboratory for both smoke detection and carbon monoxide detection.

Rationale: The intent of the proposal seeks to align the provisions of sections 202 and 916 of the Florida building code supplement with nationally recognized consensus standards for carbon monoxide detection and warning equipment. NEMA respectfully recommends a clear delineation between the terms carbon monoxide alarm and carbon monoxide detector.

As currently written the definition of carbon monoxide alarms in section 202 of the Florida building code supplement does not correlate with the terminology used in ANSI/UL 2034, ANSI/UL 2075 and NFPA 720.

The reason the three ANSI standards use different terms is because the performance and listing requirements are different. For example ANSI/UL 2075 does not preclude carbon monoxide detectors from incorporating an integral sounder but the standard does not mandate it. Also, power requirements in the Florida supplements do not reference the power requirements for wired and wireless carbon monoxide detectors.

While NEMA fully endorses requiring CO detection devices to be certified/listed to the applicable American National Standards Institute (ANSI)/Underwriters Laboratories (UL) standards such certification/listing should be able to be done by any of the Nationally Recognized Testing Laboratories (NRTLs) approved by the U.S. Occupational Safety and Health Administration (OSHA) to test and certify to these national standards. This would include UL, but also allow manufacturers the option of having the products tested/certified and listed to the national consensus standards by one of the other NRTLs. OSHA's NRTL program can be viewed at:
http://www.osha.gov/dts/otpca/nrtl/index.html

In order for carbon monoxide detection and warning equipment to provide life safety protection they must be properly installed and maintained. NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, is the national consensus standard that establishes the performance installation and maintenance requirements for carbon monoxide detection devices. NEMA recommends adding text that requires carbon monoxide detection and warning equipment to follow the requirements of NFPA 720.

NFPA 720 permits a CO detection system to operate as a stand-alone system or it can be combined with either a fire alarm system or a security system. Specifically, section 5.5.2.1 permits the carbon monoxide system to be a stand-alone system while sections 5.5.2.1 and 5.5.4.1 permit CO detection systems to share components, equipment, circuitry and installation wiring with non-CO detection systems. The correct NFPA 720 term for a fire alarm system in which components are used with a non-fire signaling system is a combination system.

In accordance with sections 4.4.3.1.1 and 7.2.1.2.1 of NFPA 720 the actuation of a carbon monoxide detector or system shall be distinctly indicated as a carbon monoxide alarm signal. NEMA recommends changing the requirement for a carbon monoxide detector to be connected to a control unit from a supervisory signal to an alarm signal.

The Florida supplement is clear that carbon monoxide detectors are to be installed in the CO source room health care facilities but it is silent if carbon monoxide detectors are permitted to be installed in other commercial sleeping occupancies such as dormitories, hotels and apartment buildings. The proposal adds clarity that carbon monoxide detection systems using carbon monoxide detectors are permissible in all commercial sleeping occupancies.

Date Proposal Submitted	3/24/2010	**Section**	916
Chapter	9	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Steven Bassett	**General Comments**	Yes
Attachments	No	**Alternate Language**	Yes

Related Modifications

Summary of Modification

Changes to Carbon Monoxide Protection

Rationale

It is the work of the Carbon Monoxide work group to clairify the language.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Clairifies language to make it easier to enforce.

Impact to building and property owners relative to cost of compliance with code

Will reduce cost to owners

Impact to industry relative to the cost of compliance with code

Make it easier since it is more understandable

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

It will improve the health, safety and welfare of the public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

It will strengthen the code because it will be more understandable

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

It opens the code to more products.

Does not degrade the effectiveness of the code

It improves the effectiveness of the code by making it easier to enforce

Alternate Language

E3853-A1

Proponent Mo Madani **Submitted** 5/19/2010 **Attachments** Yes

Rationale

Implement HB 663.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Implement HB 663.

Impact to building and property owners relative to cost of compliance with code

Implement HB 663.

Impact to industry relative to the cost of compliance with code

Implement HB 663.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Implement HB 663.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Implement HB 663.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Implement HB 663.

Does not degrade the effectiveness of the code

Implement HB 663.

General Comment

E3853-G1

Proponent Jack Glenn **Submitted** 6/1/2010 **Attachments** No

Comment

This change may conflict with the provisions of HB-663 if signed by the Governor.

916.1 Carbon monoxide protection. Every separate building or an addition to an existing building ~~for which a permit for new construction is issued~~ having a fossil-fuel-burning heater or appliance, a fireplace or an attached garage, or other feature, fixture, or element that emits carbon monoxide as a product as a byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet (3048 mm) of each room used for sleeping purposes in the new building or addition, or at such other location as required by the Florida Building Code. The requirements for this subsection may be satisfied with a battery-powered carbon monoxide alarm or a battery-powered carbon monoxide and smoke alarm. This subsection does not apply to existing buildings that are undergoing alterations or repairs unless the alteration is an addition as defined in Section 202 Defination.

Addition. An extension or increase in floor area, number of stories or height of a building or structure.

916 Carbon monoxide protection

916.1 Carbon monoxide protection. Every separate building or an addition to an existing building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, ~~or~~ an attached garage, or other feature, fixture, or element that emits carbon monoxide as a byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes in the new building or addition, or at such other locations as required by this Code..

916.1.1 Carbon monoxide alarm ~~Power Source.~~ ~~In new construction, alarms shall receive their primary power from the building wiring when such wiring is served from the local power utility. Such alarms shall have battery back up.~~ The requirements of Section 916.1 shall be satisfied by providing for one of the following alarm installation:

(1) A hard-wired carbon monoxide alarm.

(2) A battery-powered carbon monoxide alarm.

(3) A hard-wired combination carbon monoxide and smoke alarm.

(4) A battery-powered combination carbon monoxide and smoke alarm.

916.1.2 Combination alarms. Combination smoke/carbon monoxide alarms shall be listed or labeled by a Nationally Recognized Testing Laboratory.

Exceptions:

(1) An approved operational carbon monoxide detector shall be installed inside or directly outside of each room or area within a hospital, inpatient hospice facility or nursing home facility licensed by the Agency for Health Care Administration, or a new state correctional institution where a fossil-fuel burning heater, engine, or appliance is located. The carbon monoxide detector shall be connected to the fire-alarm system of the hospital, inpatient hospice facility, or nursing home facility as a supervisory signal.

(2) This section shall not apply to existing buildings that are undergoing alterations or repair unless the alteration is an addition as defined in this Code.

Date Proposal Submitted	3/28/2010	**Section**	1405.11.4
Chapter	14	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	J Glenn-BASF	**General Comments**	No
Attachments	No	**Alternate Language**	No

Related Modifications

Summary of Modification

Retain base code (IBC) language as it provides the same direction as the FBC section.

Rationale

It is not necessary to require a Florida specific code amendment when the base code provides the same direction.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on local enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No change

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Eliminates an unnecessary revision to the base code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against anything.

Does not degrade the effectiveness of the code

Does not degrade the code.

~~**1405.11.4 Grounding.** Grounding of metal veneers on buildings shall comply with the requirements of Chapter 27.~~

1405.11.4 Grounding. Grounding of metal veneers on buildings shall comply with the requirements of Chapter 27 of this code.

Date Proposal Submitted	3/1/2010	**Section**	2705
Chapter	27	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Bryan Holland	**General Comments**	No
Attachments	No	**Alternate Language**	Yes

Related Modifications

No.

Summary of Modification

Delete the section in total.

Rationale

There is no special circumstance specific to Florida that would necessitate reducing the nationally recognized standard. Data compiled by the CPSC clearly shows a need for GFCI protection. Operation of the device does not present an additional hazard, whereas not having the gfci protection allows for a lethal condition to occur with no protection provided. Most pool pump motor manufacturers currently require GFCI protection as outlined in their installation instructions or product labeling.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

Very minor cost increase per pool installation.

Impact to industry relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

YES. GFCI protection provides provides protection of persons from the hazards of electrical shock.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

YES.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

YES.

Does not degrade the effectiveness of the code

YES.

Alternate Language

E3450-A1

Proponent Jennifer Hatfield **Submitted** 6/1/2010 **Attachments** Yes

Rationale

This revised text clarifies that only the removal of the GFCI requirement on direct connection pump motors should occur; retaining the GFCI protection on receptacle pump motors. This was the original intent of the glitch proposal for the 2007 code. Evidence is lacking that any cases of injury have occurred on a properly bonded and grounded hardwired pump motor; therefore, requiring a GFCI in this case does not create a safer environment. Rather, it provides an opportunity for other hazards due

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

The alternative language will eliminate owners from having to purchase a GFCI for hardwired pumps and from the costs associated with the service calls that would result if this unnecesary device was required.

Impact to industry relative to the cost of compliance with code

No adverse impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The alternative language provides for GFCI protection on receptacle pool pump motors where it is necessary to provide for public safety and welfare, but removes the direct connection requirement where it is not warranted and where it could cause other safety hazards.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improves the code by clarifying that GFCI protection is required for receptacle pool pump motors and not those with a direct connection.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against materials, products, methods, or systems.

Does not degrade the effectiveness of the code

Does not degrade the effectiveness of the code and clarifies the original intent of the 2007 supplement change.

~~Section 2705 GFCI Protection~~

-

~~2705.1 NFPA 70—08: National Electric Code, Article 680 (Swimming Pools, Fountains, and Similar Installation), Section 680.22(B), GFCI Protection, is amended to read as follows:~~

-

~~(B) GFCI Protection. Outlets supplying pool pump motors from branch circuits with short-circuit and ground-fault protection rated 15 or 20 amperes, 125 volt or 240 volt, single phase, whether by receptacle or direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.~~

~~Exception: One and two family dwellings.~~

Section 2705 GFCI Protection

2705.1 NFPA 70 - 08: National Electric Code, Article 680 (Swimming Pools, Fountains, and Similar Installation), Section

680.22(B), GFCI Protection, is amended to read as follows:

(B) GFCI Protection. Outlets supplying pool pump motors from branch circuits with short-circuit and ground-fault protection

rated 15 or 20 amperes, 125 volt or 240 volt, single phase, ~~whether~~ by receptacle ~~or direct~~ connection, shall be provided with

ground-fault circuit-interrupter protection for personnel.

~~Exception: One and two family dwellings.~~

Additional Rationale for Alternative Language Comment for Proposed Modification E3450

- The initial GFCI exemption language in the supplement to the 2007 Florida Building Code was incorrect and the alternative language comment submitted clarifies that it was not the intent to remove GFCI protection for plug in/receptacle pump motors. The intent was to remove GFCI requirements for only hardwired installations.

- When it comes to the direct connection/hardwired pumps, they are already required to comply with the bonding and grounding requirements of the 2008 NEC, so there is no reason to require additional devices.

- A GFCI does not provide any added safety where there is a properly bonded and grounded hardwired pump motor. There are no reported injuries involving properly bonded and grounded hard wired pump installations, for want of a GFCI.

- Upon review of a *"Compilation of Data from the U.S. Consumer Product Safety Commission National Injury Information Clearinghouse,"* it appears that out of all the incidents on record, **only one** possible incident was attributable to a hardwire pool pump motor and the data available on this one incident is too vague to draw a positive conclusion. Further, this one incident occurred **over 20 years ago** and what was apparent was that it had bad wires in the control box and was not grounded at all.

- There are MILLIONS of hard wired pool pump motors without GFCI protection out there and the CPSC data clearly proves that there have never been even occasional occurrences of incidents. The only report associated with a hardwired pump motor clearly shows the problem was it did not meet proper grounding requirements.

- The ONE possible incident occurred OVER 20 YEARS AGO – and in that time no action by the code panel was taken to respond to this incident and the incident has since never been repeated. Further, pump motor technology has changed tremendously in the last 20 years.

- Plug-in motors should have GFCI protection due to possible mishandling of the cord and plug by a consumer, but a hardwired pump motor requires a maintenance service disconnect and the threat of consumers messing with such is clearly not there.

- In reviewing past NEC panel member comments on this subject it appears the concern has been with plug-in motors and this revised text addresses this concern accordingly.

- Requiring a GFCI on hardwired pump motors is unnecessary and redundant. Rather than increasing safety, it actually creates potential health and safety hazards, which while not electrical in nature, cannot be ignored. False tripping can occur, because of grass, weed or insect presence, or even from lightning strikes, resulting in a complete shut down of pool filtration and sanitization. In many cases, especially in seasonal or second residences, the shut down may go undetected for days, weeks or even months, creating a potentially **significant health hazard** not only on the affected property but for surrounding residences. The ability of untreated pool water to serve as a breeding ground for West Nile Virus and to affect entire neighborhoods is well documented by the

Center for Disease Control, in an article titled "Delinquent Mortgages, Neglected Swimming Pools, and West Nile Virus, California."

> **"Careful examination of service requests for mosquito control made to the Kern Mosquito and Vector Control District (KMVCD) and an aerial survey of Bakersfield showed an extensive number of green or neglected pools, most of which were producing mosquitoes.** ****Kern County was especially affected, with a 300% increase in notice of delinquency in the spring quarter of 2007 compared with that of 2006. Associated with home abandonment was the expanding number of neglected swimming pools, Jacuzzis (hot tubs), and ornamental ponds. **As chemicals deteriorated, invasive algal blooms created green swimming pools that were exploited rapidly by urban mosquitoes, thereby establishing a myriad of larval habitats within suburban neighborhoods that were difficult to locate from the ground. These pools frequently were located within new housing tracts and not confined to old neighborhoods.** An aerial photograph of a representative Bakersfield neighborhood shows the extent of the problem, with 17% of the visible 42 pools and Jacuzzis appearing green and likely producing mosquitoes.

- When a pump stops, whether it is from a GFCI trip or another operation, the algae GROWS – this can lead to serious health and safety hazards.

Both the Florida Swimming Pool Association and the Association of Pool & Spa Professionals recognize that life safety is an utmost concern of this body. In this case the GFCI requirement for hardwired pump motors not only fails to provide any additional safety, but rather it creates health and safety risks that must be considered. Furthermore, the data is simply <u>not there</u> to justify this requirement.

We ask the FBC for positive reconsideration of this alternative language comment that clarifies GFCI protection is required on receptacle outlets.

Date Proposal Submitted	3/1/2010	**Section**	2706
Chapter	27	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Bryan Holland	**General Comments**	No
Attachments	Yes	**Alternate Language**	No

Related Modifications

Yes. Mod # 3451

Summary of Modification

New Section for Lightning Protection

Rationale

See attachment.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

Very Minimal. See Attachment.

Impact to industry relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Yes.

Does not degrade the effectiveness of the code

Yes.

2706.1 Lightning Protection. A lightning protection system shall be provided for all new buildings and additions in accordance with NFPA 780, Standard for the Installation of Lightning Protection Systems.

2706.2 Where additions are constructed to existing building, the existing building's lightning protection system, if connected to the new lightning protection system, shall be inspected and brought into compliance with current standards.

2706.3 Surge protection devices shall be installed for all normal and emergency electrical systems in accordance with NFPA 70, National Electrical Code.

Exceptions:

1. One- and two-family dwellings

2. Lightning protection shall not be required for any building or addition where shown unnecessary by evaluation using the Risk Assessment Guide in NFPA 780, Standard for the Installation of Lightning Protection Systems or an alternative method approved by the authority having jurisdiction.

Substantiation:

1. According to the National Weather Service:
    a. The are an average of 20 Million lightning strikes in the US each year
    b. The average lightning strike delivers between 100 Million and 1 Billion volts of electricity
    c. The average lightning strike delivers between 10,000 and 200,000 amperes of electricity.

2. According to the National Weather Service:
    a. Between 1959 and 1993, 53.1% of all deaths in the state of Florida related to weather were due to lightning. This is more than drowning, tornadoes, hurricanes, wind and, cold combined.
    b. During these same years, a total of 449 persons died in the state of Florida from lightning, another 1788 were injured. In comparison, the average number of deaths during this period nationwide is only 48.
    c. The number of lightning deaths and injuries in the state of Florida outpaces every other state in the nation by 3:1.

3. According to the National Fire Protection Association:
    a. There is an average of 70 to 100 thunderstorm days per year in the state of Florida. (National Weather Services)
    b. There is an average of 8 to 14+ lightning strikes in the state of Florida for every square kilometer per year. (U.S. National Lightning Detection Network)

4. According to the National Lightning Safety Institute:
    a. In 2008 alone, there were 246,200 insurance claims on residential structures in the US. Insured loses on residential properties exceed $1 billion dollars annually. (Insurance Information Institute, NY, press release, 6/22/09)
    b. Lightning is responsible for more than $5 billion dollars in total insurance losses annually. (Hartford Insurance Co. – TMCNet Newsletter, Sept 14, 2006)
    c. During 2002-2004, fire departments responded annually to about 31,000 fires caused by lightning with $213,000,000 in direct property damage. (NFPA Report, January 2008)
    d. Looking specifically at storage and processing facilities, lightning accounts for 61% of the accidents initiated by natural events. 16 out of 20 accidents involving petroleum products storage tanks were due to lightning strikes. (Journal of Hazardous Materials 40 (1995) 43-54
    e. 30% of U.S. businesses suffer damage from lightning storms. (Carnegie Mellon Report, 02/06)
    f. 30% of all power outages annually are lightning-related, on average, with a total cost of $1 billion dollars. (Ralph Berstein, EPRI; Diels, et al (1997))

5. According to the National Oceanic and Atmospheric Administration
    a. The average cost of lightning-caused damages in the US is between $5,000 and $50,000. (Storm Data)
    b. Between 1959 and 1994, there were 17 lightning losses of over $5 million dollars. (Storm Data)
    c. During these same years, 92 lightning losses exceed $500,000 dollars.

6. According to the Factory Mutual System:
    a. Lightning related private sector property damage costs for the 1990-1992 period averaged $27 million annually.
    b. Information complied by the nation's fire chiefs indicate structural lightning losses at $138.7 million as average over 1989-1993.
    c. There were 20,000 lightning-caused residential annually during that same period.
    d. During the period of 1973-1982, there were 2,926 lightning claims for a total cost of $385 million dollars. Lost time from an idle workforce was not included therein.

Cost:

1. The average cost of a complete lightning protection system, including deign, materials, installation, and maintenance is approximately 1% to 5% of total construction cost of the building.

2. The average cost to renovate a building with lightning protection after completion of construction is approximately 10 times that of a new building under construction.

3. The cost of the lightning protection system can be off-set as much as 80% by insurance deductions and rebates.

4. Lightning risk assessment calculations are readily available free online and take approximately 15 minutes to complete.

Enforcement:

1. Standard and reference materials are readily available. The NFPA 780 is already a referenced standard in the FBC and mandated by section 419, 420, and 423.

2. Underwriter's Laboratories offers lightning protection education for design professionals, installers, and enforcement officials. Systems installed under the provisions of NFPA 780 must be in compliance with UL96 and 96A.

3. UL has been testing and certifying lightning protection equipment since 1908. UL issues inspection certificates for systems by inspecting system components and checking completed installations. Installations are required to comply with UL's internationally recognized Standards for lightning protection systems.

Date Proposal Submitted	3/1/2010	**Section**	Section 35
Chapter	35	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Bryan Holland	**General Comments**	No
Attachments	No	**Alternate Language**	No

Related Modifications

Mod #3453

Summary of Modification

Update reference NFPA 780.

Rationale

Most current version of adopted reference.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes. New updates provide for safer installations.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Yes.

Does not degrade the effectiveness of the code

Yes.

780 - ~~04~~ 08 Installation of Lightning Systems.

Date Proposal Submitted	4/2/2010	**Section**	New appendix
Chapter	2711	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Doug Harvey	**General Comments**	Yes
Attachments	Yes	**Alternate Language**	No

Related Modifications

Add code reference to chapter 35 including the edition date.

Summary of Modification

Add a new Appendix “XX” (Designation to be assigned)

Rationale

Please see support document for rationale.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposed change does not impact local enforcement, it merely provides an alternate path for design that adhere to the Florida Building Code

Impact to building and property owners relative to cost of compliance with code

No fiscal impact to the building owner is anticipated

Impact to industry relative to the cost of compliance with code

No fiscal impact to the industry is anticipated

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposed change protects the health, safety and welfare by allowing the code compliant use of “green” ideas and technologies

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposed change improves the code for design consistency

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposed code change does not discriminate

Does not degrade the effectiveness of the code

This proposed change does not degrade the effectiveness of the code.

General Comment

E4391-G1

Proponent Doug Harvey **Submitted** 6/1/2010 **Attachments** No

Comment

BOAF has suggested the International Green Construction Code (IGCC) be included as an adoptable appendix. While many ideas for “green” and green construction are present in the marketplace today, no other document has been through the process the IgCC has. This document has been compared to the base codes for Building, Mechanical, Plumbing, Fuel Gas and Energy. The code has been scrutinized so as to prevent conflicts between building code requirements and green/sustainable requirements. The IgCC has been evaluated and endorsed by the USGBC and ASHRAE as well through the national consensus process. Many areas are in the process of trying to adopt “green” standards for their communities. This will provide a method for jurisdictions looking to mandate greener and more sustainable requirements. In addition, this document was created in conjunction with ASHRAE, ICC and others, including public meetings, to ensure compatibility with many of the existing requirements in existence today and with a forward looking approach. While this is a relatively new document, inclusion as an adoptable appendix will offer an option that will help with code compliance, not code violation or putting different standards at odds with each other.

General Comment

E4391-G2

Proponent Jack Glenn **Submitted** 6/1/2010 **Attachments** No

Comment

The new appendix is based on a proposed standard that is not yet approved.

APPENDIX 'XX' (Designation to be assigned)

International Green Construction Code (IGCC)

The provisions in this appendix are not mandatory unless specifically referenced in the adopting ordinance

SECTION (XX) 101

GENERAL

(XX) 101.1 Scope. The provisions of this appendix are applicable to all occupancies covered by the International Green Construction Code (IGCC).

(XX) 101.2 Intent. The intent of this appendix is to provide direction for communities having a desire to preserve natural resources, especially water, and lessen the impact of construction on the built environment. Adoption of this standard is to safeguard the environment, public health, safety and general welfare through the establishment of requirements to reduce the negative potential impacts and increase the potential positive impacts of the built environment and building occupants, by means of minimum requirements to: conservation of natural resources, materials and energy; the employment of renewable energy technologies, indoor and outdoor air quality; and building operations and maintenance.

(XX) 101.3 Requirements. The design of buildings shall be in accordance with the International Green Construction Code (IGCC).

Add the Following to Chapter 35 – references:

ICC

International Code Council, Inc.

500 New Jersey Avenue, NW

6th Floor

Washington, DC 20001

Standard Referenced: IGCC

Title: **International Green Construction Code (IGCC)**

Reference in code section number: Appendix L

Date Submitted	April 2, 2010
Mod Number	
Code Version	2010
Code Change Cycle	2010 Triennial Original Modifications 03/01/2010/-/04/02/2010
Sub-code	Building
Chapter Topic	Appendix, International Green Construction Code
Section	Appendix
Related Modification	Add code reference to chapter 35 including the edition date.
Affects HVHZ	No
Summary of modification	Add a new Appendix "XX" (Designation to be assigned)
Text of Modification	APPENDIX 'XX' (Designation to be assigned) International Green Construction Code (IGCC) The provisions in this appendix are not mandatory unless specifically referenced in the adopting ordinance SECTION (XX) 101 GENERAL (XX) 101.1 Scope. The provisions of this appendix are applicable to all occupancies covered by the International Green Construction Code (IGCC). (XX) 101.2 Intent. The intent of this appendix is to provide direction for communities having a desire to preserve natural resources, especially water, and lessen the impact of construction on the built environment. Adoption of this standard is to safeguard the environment, public health, safety and general welfare through the establishment of requirements to reduce the negative potential impacts and increase the potential positive impacts of the built environment and building occupants, by means of minimum requirements to: conservation of natural resources, materials and energy; the employment of renewable energy technologies, indoor and outdoor air quality; and building operations and maintenance. (XX) 101.3 Requirements. The design of buildings shall be in accordance with the International Green Construction Code (IGCC). Add the Following to Chapter 35 – references: ICC International Code Council, Inc.

	500 New Jersey Avenue, NW 6th Floor Washington, DC 20001 Standard Referenced: IGCC Title: International Green Construction Code (IGCC) Reference in code section number: Appendix L
Rational	1. The purpose of this proposed change is to add a new optional appendix to the FBC. 2. The proposed appendix will reference the International Green Construction Code (IGCC). This newly-developed, consensus-based standard may be used in conjunction with local code requirements specific to green buildings covered in the scope. 3. Green buildings are currently being designed and constructed nationwide using different programs guidelines, rating systems, and standards. The IGCC was developed under the direction of ICC, in conjunction with representatives from other nationally-recognized organizations with experience and expertise in this field, including ASHRAE members. In many cases, limited guidance is given as to the criteria to be used to determine if the building project meets the expectations. The IGCC provides a path using a publicly-reviewed resource for local jurisdictions to adopt and use in the administration of green residential building design.
Fiscal Impact statement	
Impact to Local Enforcement	This proposed change does not impact local enforcement, it merely provides an alternate path for design that adhere to the Florida Building Code
Impact to Building owner	No fiscal impact to the building owner is anticipated
Impact to Industry	No fiscal impact to the industry is anticipated
Requirements	
Has connection to health safety and Welfare	This proposed change protects the health, safety and welfare by allowing the code compliant use of "green" ideas and technologies
Strengths or improves Code	This proposed change improves the code for design consistency
Does not discriminate	This proposed change does not discriminate
Does not degrade effectiveness of code	This proposed change does not degrade the effectiveness of the code.

Sub Code: Residential

Date Proposal Submitted	3/31/2010	**Section**	315.1
Chapter	3	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	J Glenn-BASF	**General Comments**	No
Attachments	No	**Alternate Language**	Yes

Related Modifications

Summary of Modification

Retain base code (IRC) language

Rationale

Utilizes base code language as it provides better direction

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact on local enforcement

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

No change

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Brings Florida in-line with nationally accepted practice

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate against anything.

Does not degrade the effectiveness of the code

Does not degrade the code.

Alternate Language

E4190-A1

Proponent Mo Madani **Submitted** 5/19/2010 **Attachments** Yes

Rationale

Implement HB 663.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Implement HB 663.

Impact to building and property owners relative to cost of compliance with code

Implement HB 663.

Impact to industry relative to the cost of compliance with code

Implement HB 663.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Implement HB 663.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Implement HB 663.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Implement HB 663.

Does not degrade the effectiveness of the code

Implement HB 663.

R315.1Carbon monoxide ~~protection~~ alarms. ~~Every building for which a permit for new construction is issued having a fossil-fuel-burning heater or appliance, a fireplace, or an attached garage shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes.~~ For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

Chapter 2,

Revise the definition for the term "Addition" as follows:

Addition. An extension or increase in floor area, number of stories or height of a building or structure.

Revise Section R315.1 Add text to read as follows:

R315.1Carbon monoxide protection. Every separate building or an addition to an exiting building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, ~~or~~ an attached garage, or other feature, fixture, or element that emits carbon monoxide as byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes.

Exception: **This section shall not apply to existing buildings that are undergoing alterations or repair unless the alteration is an addition as defined in this Code.**

R315.1.1 Carbon monoxide alarm ~~Power Source~~. ~~In new construction, alarms shall receive their primary power from the building wiring when such wiring is served from the local power utility. Such alarms shall have battery back up.~~ The requirements of Section R315.1 shall be satisfied by providing for one of the following alarm installation:

(1) A hard-wired carbon monoxide alarm.

(2) A battery-powered carbon monoxide alarm.

(3) A hard-wired combination carbon monoxide and smoke alarm.

(4) A battery-powered combination carbon monoxide and smoke alarm.

R315.1.2 Combination alarms. Combination smoke/carbon monoxide alarms shall be listed or labeled by a Nationally Recognized Testing Laboratory.

Date Proposal Submitted	4/1/2010	**Section**	New section -E3901.1
Chapter	39	**TAC Recommendation**	Pending Review
Affects HVHZ	No	**Commission Action**	Pending Review
Proponent	Lorraine Ross	**General Comments**	No
Attachments	No	**Alternate Language**	No

Related Modifications

Mod # 4148 adds definition for photovoltaic modules/shingles
Mod #4151 adds new standard for photovoltaic modules/shingles
Mod #4269 adds reference standard UL 1741 for electrical aspects of photovoltaic modules/shingles.

Summary of Modification

Adds new section regarding electrical installation of of photovoltaic modules/shingles as roof covering materials.

Rationale

Photovoltaic roofing materials are becoming an important part of achieving energy efficiency goals in Florida. This code modification adds a new section to the residential electrical chapter that outlines electrical installation aspects for use of these products and systems. Please see related mods for proposed definition for photovoltaic modules/shingles and addition of new reference standard.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

There is no financial impact of the proposed code modification. This code mod will improve the enforceability of the code by adding in clear fire, wind and installation requirements for photovoltaic roofing products and systems.

Impact to building and property owners relative to cost of compliance with code

There is no fiscal impact to building and property owners. There is a benefit in assuring that these photovoltaic products and systems are installed safely and in accordance with these new code requirements.

Impact to industry relative to the cost of compliance with code

There is no fiscal impact of this code mod. There is a benefit in that it does add additional choices for roofing materials, as well as increasing energy efficiency of the home.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

With the growing attention to energy efficiency, this code mod will assure the public that photovoltaic roofing products and systems are installed safely.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This code mod strengthens and improves the code by putting into place code requirements for new roofing technology. While the energy efficiency benefits of PV products and systems are well know, this code change establishes electrical aspects for installation of these products.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This code change does not discriminate against materials, products, methods or systems of construction.

Does not degrade the effectiveness of the code

This code mod improves the effectiveness of the code.

Add new text as follows:

Chapter 39 Power And Lighting Distribution. Reserved except as shown below:

E3901.1 Photovoltaic panels and modules. Photovoltaic panels and modules shall be listed and labeled in

accordance with UL 1703

E3901.2 Inverters. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid

shall use inverters listed for utility interaction.